

2017 IEEE INTERNATIONAL ULTRASONICS SYMPOSIUM

WASHINGTON D.C., USA

SEPTEMBER 6-9, 2017



PROGRAM BOOK, SHORT COURSES AND EXHIBITS



**IEEE ULTRASONICS, FERROELECTRICS,
AND FREQUENCY CONTROL SOCIETY**



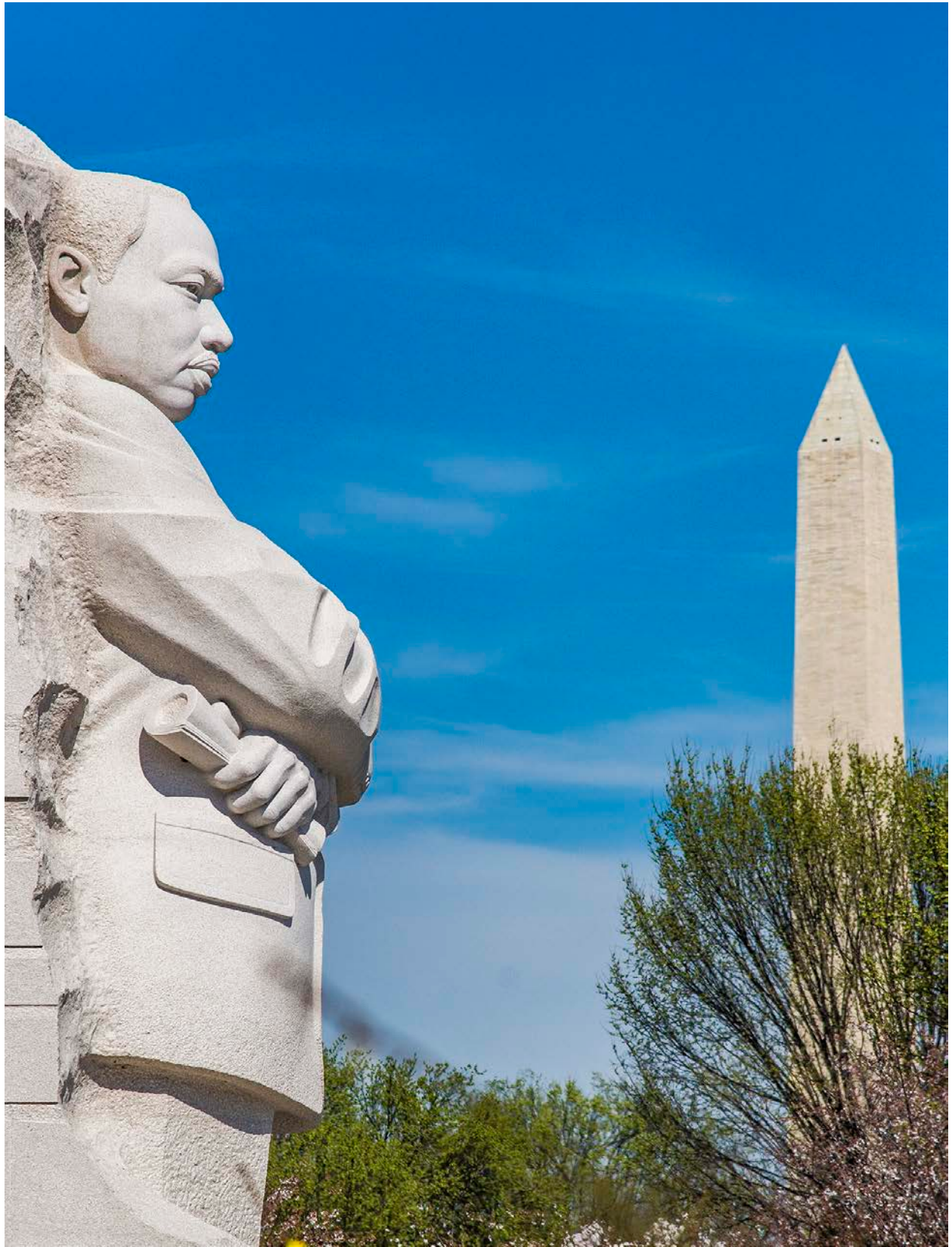


TABLE OF CONTENTS

Welcome from the General Chair	2
Sponsors	3
Conference Venue	4
Metro Map	5
Registration and Fees	6
Conference Proceedings	7
Visa Assistance	8
Student Travel Support	9
Industry & University Employer / Job Seeker Network Reception	9
Women in Engineering	9
IEEE Event Photography Statement	9
IEEE Non-Discrimination Policy	9
Conference Reception	10
Conference Banquet	10
Tours	11
Exhibitors List	12
Future Conference	17
Conference Organizing Committee	18
Short Courses	19
Technical Program Committee	21
Plenary Speaker	26
Invited Speakers	27
Student Paper Competition	29
Poster Presentation Guide	32
Oral Presentation Guide	33
Speaker Ready Room	35
Condensed Sessions Program	36
Omni Shoreham Hotel Floor Plans	39
Sessions Program	42
Author Index	116



Message from the 2017 IEEE Ultrasonics Symposium General Chair

Keith Wear,
US Food and Drug Administration
Washington, DC.

The IEEE International Ultrasonics Symposium (IUS) has served for many decades as an outstanding forum for researchers to present new results and learn about recent advances in ultrasonics. Over a thousand scientists and engineers attended each of three recent symposia in Chicago (2014), Taipei (2015), and Tours (2016). We anticipate another successful symposium in Washington, D.C. in 2017.

This year, we received 1319 abstracts, which is the most in the history of the IUS. The Technical Program Committee selected 945 papers for oral and poster presentations. I thank Professor Georg Schmitz, the Technical Program Chair, who led the organization of the symposium's technical presentations. The oral presentations include 21 invited papers highlighting emerging technologies or overviews of key areas. The poster presentations include 17 student poster finalists competing for the Student Paper Awards. Presentations cover the five areas of focus for this meeting:

- 1) Medical Ultrasonics,
- 2) Sensors, NDE & Industrial Applications,
- 3) Physical Acoustics,
- 4) Microacoustics - SAW, FBAR & MEMS, and
- 5) Transducers & Transducer Materials.

I extend sincere thanks to the IEEE, the IEEE UFFC Society, the Organizing Committee, the Technical Program Committee, and all of the attendees for making this event possible.

SPONSORS

 .GOLD. SPONSORS		Verasonics designs and sells the state-of-the-art Vantage ultrasound research systems for academic and commercial investigators.
 .BRONZE. SPONSORS		The Focused Ultrasound Foundation was created to improve the lives of millions of people with serious medical disorders by accelerating the development and adoption of focused ultrasound.
 .BRONZE. SPONSORS		Established in Zhangjiang Hi-tech Park, Shanghai, China in 2014, Acoustic Life Science Co., Ltd. (ALS) is a high-tech company dedicated to the research, development, production and application of advanced medical ultrasound technology. With expertise on composite and single crystal technology, ALS is specialized on high-end medical imaging ultrasound probes including high frequency transducer and imaging catheter.

CONFERENCE VENUE



Omni Shoreham Hotel
2500 Calvert Street NW
Washington, District of Columbia 20008
(202) 234-0700

The Omni Shoreham Hotel is easily accessed through public transportation. It is in easy walking distance of the Woodley Park Stop on the Red Line of the Washington, D. C. Metro. The Metro provides easy access to many tourist attractions, including the White House, U. S. Capitol, Arlington National Cemetery, and the National Mall. The National Mall includes many museums: National Gallery of Art, Air and Space Museum, Natural History Museum, National Museum of African American History and Culture, American History Museum, and the Holocaust Museum. In addition, the National Mall includes the Washington Monument, Jefferson Memorial, Lincoln Memorial, Franklin Delano Roosevelt Memorial, Martin Luther King, Jr. Memorial, World War II Memorial, Korean War Memorial, and the Vietnam Memorial.

To reach the Omni by Metro from **Reagan National Airport** (7 miles): Take the Yellow Line from Reagan National Airport to Gallery Place. At Gallery Place, transfer to the Red Line. Take the Red Line to the Woodley Park stop.

To reach the Omni by from **Dulles International Airport** (29 miles) or **Baltimore/Washington International Airport** (40 miles): Take a shuttle bus or a taxi.

For additional information, see Washington Metropolitan Area Transit Authority (<https://www.wmata.com/>)

System Map

wmata.com
Customer Information Service: 202-637-7000
TTY Phone: 202-638-3780

Legend

- Red Line • Glenmont to Shady Grove
- Orange Line • New Carrollton to Vienna
- Blue Line • Franconia-Springfield to Largo Town Center
- Green Line • Branch Ave to Greenbelt
- Yellow Line • Huntington to Fort Totten
- Silver Line • Future Dulles Corridor Line

- Station Features**
- Bus to Airport
 - Parking
 - Hospital
 - Airport
- Connecting Rail Systems**
- AMTRAK
 - VIRGINIA METRO RAIL
 - MARC

- Transfer Station**
- Under Construction**
- Full-Time Service**
- Station in Service**
- Rush-Only Service:**
Monday-Friday
6:30am - 9:00am
3:30pm - 6:00pm



REGISTRATION AND FEES (\$USD)

Registration Type	Before August 1, 2017	After August 1, 2017
IEEE Members*	\$725	\$875
Non-IEEE Members*	\$925	\$1075
Student* (Show valid student ID)	\$250 (IEEE Member) \$425 (Non-IEEE Member)	\$400 (IEEE Member) \$550 (Non-IEEE Member)
Retiree*	\$250	\$400
Life IEEE Member* (Show life member card)	\$250	\$400
One-Day Registration**	\$400	\$400
Short Courses***	\$250 (One Short Course) \$400 (Two Short Courses)	\$350 (One Short Course) \$500 (Two Short Courses)
Short Courses *** (Student with valid student ID) or Retiree	\$150 (One Short Course) \$250 (Two Short Courses)	\$250 (One Short Course) \$400 (Two Short Courses)
Guest**** (Includes awards ceremony and reception)	\$125	\$125
Banquet	\$90	\$90

* Registration includes access to all sessions, exhibits, welcome reception, banquet, conference program, and password-controlled internet access to the conference proceedings. Short courses are not included.

**One Day Registration includes password-controlled internet access to the conference proceedings and reception (if it coincides with the day of reception), but it does not include banquet. The banquet is optional and is \$90.

***Short Course Only Registration does not include access to conference sessions, banquet, reception, or exhibits. It includes password-controlled internet access to the conference proceedings.

****Guest registration includes attendance at the awards ceremony on Thursday morning and reception on Thursday night. The Friday banquet is not included in the guest registration. The banquet is optional and is \$90. Guests are NOT allowed to attend any technical sessions except for the Thursday morning plenary session. Only ages 10 or older need to register.

Life Member is defined by IEEE as at least 65-years old and the age plus years of IEEE membership should be equal or greater than 100. Life members should show their IEEE Life Member card or evidence of Life Membership when getting registration materials.

Refunds: General attendees (non-authors) are eligible for a registration refund if the refund is requested in writing prior to August 1, 2017 and will incur a processing fee of \$50. There are no registration refunds after August 1, 2017. Exceptions may apply for individuals affected by government-imposed travel restrictions. See symposium website for details (<http://ewh.ieee.org/conf/ius/2017/>). Authors who have uploaded their papers are NOT entitled to refunds.

CONFERENCE PROCEEDINGS

In order for the 2017 IEEE International Ultrasonics Symposium to be published in a timely manner, it is important that authors follow the submission instructions to the best of their ability. As the Proceedings is a record of the 2017 IEEE International Ultrasonics Symposium, only those papers that are actually presented and defended at the Symposium by the author during either an oral or a poster session will be accepted for publication in the Proceedings. In the event that an author is unable to personally present the paper, she/he MUST be represented in either poster or oral sessions by an individual who is qualified to discuss the technical material in the paper and who will remain in attendance for the full session in which the paper is presented. All the session chairpersons will be recording the presenters attendance, both oral and poster, and sending the results to the Proceedings Editor.

All presenters, both oral and poster, are encouraged to publish in the conference proceedings. Full paper submissions are limited to four (4) single-side pages in the required two-column format. Invited papers can be up to ten (10) pages in length. For all papers: two (2) extra pages may be used at an excess page charge of \$125/page. Payments for excess page charge are part of the paper submission process.

Instructions for the generation of the conference papers can be found at the IEEE Proceedings Author Tools Box at the following website:

http://www.ieee.org/conferences_events/conferences/publishing/templates.html. Here you will find Manuscript Templates for Conference Proceedings, IEEE Citation Reference, and IEEE Keyword Guidelines.

Part of the paper submission process involves standard conversion to PDF, and the authors will be given the opportunity to approve the converted files before the completion of the submission process. As part of the submission process, the author will have to indicate that they have read and conformed to the IEEE Proceedings formatting standards. Authors may risk having their paper not included in the proceedings if there are excessive deviations from the IEEE format standards. Our publication schedule will not allow the authors to make changes to their manuscripts after the deadline. If the papers deviate from the standard format they will be removed from publication.

All paper submissions will be checked in order to prevent plagiarism. Please note that self-plagiarism will also be checked. Plagiarism in any form is unacceptable and is considered a serious breach of professional conduct.

For authors who are including Multimedia content in their papers, they can find supporting Multimedia Materials instructions at the IEEE Author Digital Tool Box:

<http://www.ieee.org/web/publications/authors/transjnl/index.html>.

While this site provides the Multimedia instructions for the IEEE Transactions and Journals, the instructions are appropriate for our Proceedings. In simple terms, the author needs to make notation in her/his paper as to the multimedia file name so that a link can be added by the editor. During the standard submission process, the author will be requested to upload the multimedia file.

VISA ASSISTANCE

Obtaining Visa Application Document (Formal Letter of Invitation)

Visa requirements: The US has updated its visa policies to increase security, so it may take you several months to apply for and receive your visa. For details that apply specifically to your country please go immediately to your nearest US Consulate or Embassy. Review your visa status now to determine if you need a US visa or visa renewal and to find out how to schedule an interview appointment, pay fees, and other vital instructions.

If you need a personal letter of invitation to attend the Conference, please provide the following information (order like stated below):

- salutation (Mrs. / Mr.)
- title (Prof. / Dr. / ...)
- complete name (first, middle, last name)
- complete mailing address (company/institution, street, city, state/province, postal code, country)
- e-mail address
- whether you are author/co-author (including ID# of your contribution)
- whether you have already registered AND paid your registration fee (incl. Invoice #), and any other details that US or your country of residence requires for your visa application

Then, contact the Conference Coordinators by email at:

Erdal Oruklu

Local Chair, IUS 2017

oruklu@iit.edu

Telephone: +1-312-567-8814

IEEE VISA Guidelines

According to IEEE's guidelines for providing visa letters such formal letters of invitation will only be issued to:

- People the committee knows
- Speakers/Presenters
- Committee members
- Attendees/Exhibitors who have paid their registration fee in full

The Conference cannot contact or intervene with any US Embassy or Consulate office abroad on your behalf so please begin your visa application process as soon as you determine that you want to attend the 2017 IEEE International Ultrasonics Symposium.

STUDENT TRAVEL SUPPORT

Student Travel Support will be available beginning Friday, September 8th, 1:00 pm in the registration area. Please have identification and travel receipts available if they have not already been provided per instructions from the Finance Chair.

INDUSTRY & UNIVERSITY EMPLOYER / JOB SEEKER NETWORK RECEPTION

This reception will give students and other job seekers an opportunity to network with employers in academic and industrial setting. It will be held from 6:00 PM until 8:00 PM in the Blue Pre-Function Room on Wednesday September 6. You must register for this event when you register for the symposium.

WOMEN IN ENGINEERING LUNCHEON and CAREER DEVELOPMENT WORKSHOP

Women active in the technical areas of Ultrasonics are invited to attend a complimentary lunch and career development workshop organized by the women in the UFFC group on Saturday, September 9 from 12:00 to 1:30 PM. The workshop will highlight job searching and interviewing strategies and skills. You must register for this event when you register for the symposium.

IEEE EVENT PHOTOGRAPHY STATEMENT

Attendance at, or participation in this conference constitutes to the use and distribution by IEEE of the attendee's image or voice for informational, publicity, promotional and / or reporting purpose in print or electronic communications media. No flash photography will be used. Video recording by participants and other attendees during any portion of the conference is not allowed without special prior written permission of IEEE. Photographs of PowerPoint or other slides as well as posters are not permitted.

IEEE NON-DISCRIMINATION POLICY

IEEE is committed to the principle that all persons shall have equal access to programs, facilities, services, and employment without regard to personal characteristics not related to ability, performance or qualification as determined by IEEE policy and / or applicable laws.

CONFERENCE RECEPTION

Thursday, September 7th, 2017

Time: 7:00pm-9:00pm

Location: Omni Shoreham Hotel

The Conference Reception will be held in the Blue Room, Blue Pre-function Room, and outside patio (weather permitting).

Entertainment:



The Gatsby Gang. This quintet performs jazz and popular standards from the 1920's all the way to the present.

CONFERENCE BANQUET

Friday, September 8th, 2017

Time: 6:30pm-9:30pm

Location: Omni Shoreham Hotel

The Conference Banquet will be held in the Regency Ballroom.

Entertainment:



Amaris Trio. This trio plays an extensive repertoire of classical music, with a special emphasis on the baroque era.



Capitol Steps. They have been a popular performance act in Washington, D.C. for decades. They perform musical-comedy skits with a political edge. They have been featured on "The Today Show," "Nightline," and "Good Morning America."

TOURS

There are **two Washington DC tours** offered during the conference on Thursday and Friday. Guests are **encouraged to enroll as soon as possible** since seats are limited. Please check the desired tour options in the conference registration form - online or paper submission.

TOUR 1: Thursday 7 September, 08:30 am to 12:30 pm \$55



A Special Look at Washington DC

This tour will provide guests with a complete narrated overview of the U.S. Capital City including views of the White House, the Washington Monument, and the Capitol itself. Guests will pass the Smithsonian and the National Gallery of Art (to be visited on our Friday tour) prior to stopping on the National Mall to view the Lincoln Memorial, and the nearby Vietnam Veterans Wall and Korean War Memorial.

TOUR 2: Friday 8 September, 09:30 am to 01:30 pm \$55



The National Gallery of Art

On this tour a docent will describe highlights of the Gallery's vast collection of Western art from the 13th to the 20th centuries. On display are masterpieces of Italian painting and sculpture including the only painting by Leonardo da Vinci in the Western Hemisphere, major works by Bierstadt, Goya, Rembrandt, Vermeer, Botticelli, Cassatt, and Monet.

EXHIBITORS

Logo	Description
	At Acertara we are focused on advancing both the science and application of diagnostic ultrasound. From our unique and patented ultrasound probe testing devices, our ISO 17025:2005 accredited FDA and IEC acoustic power testing services and materials analysis, to our ISO 13485:2003 certified ultrasound probe repair laboratory, we insure the proper operation and safety of probes in clinical use. Acertara is advancing the Sonora Medical Systems legacy of extending the reach of probe repair into the most complex and expensive probes on the market - all with the goal of simultaneously reducing the costs associated with maintaining these device, while ensuring both patient and user safety, and the clinical integrity of the ultrasound examination.
	Established in Zhangjiang Hi-tech Park, Shanghai, China in 2014, Acoustic Life Science Co., Ltd. (ALS) is a high-tech company dedicated to the research, development, production and application of advanced medical ultrasound technology. With expertise on composite and single crystal technology, ALS is specialized on high-end medical imaging ultrasound probes including high frequency transducer and imaging catheter.
	Advanced Modular Systems Inc. (also known as AMSystems, or AMS, Inc.) is a world leader in manufacturing of deposition systems for Piezoelectric Aluminum Nitride (AlN) and doped-AlN thin films used in FBAR/BAW filters made for cell phones and other wireless applications. AMSystems designs, manufactures and services thin film processing equipment for the coating and ion mill trimming
	Manufacturer of advanced and open platform phased array ultrasonic instruments. Latest technology includes Full Matrix Capture (FMC) and Total Focusing Method (TFM) for high resolution ultrasonic imaging. Standard phased array configurations include 16/16, 32/32, 16/128, 32/128, 64/64, 128/128, 256/256. Customize your phased array solution today with our compact, yet advanced modules!
	Applied Sciences (ISSN 2076-3417) provides an advanced forum on all aspects of applied natural sciences. It publishes reviews, research papers and communications. Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. The journal covers all aspects of applied biology, applied chemistry, applied physics, and applied engineering. It has eight Sections: "Nanotechnology and Applied Nanoscience", "Optics and Lasers", "Acoustics", "Chemistry", "Materials", "Energy", "Mechanical Engineering" and "Computer Science and Electrical Engineering".

	Cephasonics is a medical- and industrial-device technology leader utilizing ultrasound and the power of the cloud to bring about the ubiquitous adoption of ultrasound-based measurement products that improve the quality of life. Launched with a management buyout in March 2012 and headquartered in Santa Clara, Calif., Cephasonics's™ ultrasound technology, including its AutoFocus™, beamforming technology, has won multiple industry awards for innovation.
	For over 30 years, CIRS has manufactured a wide range of ultrasound products for quality assurance, training and demonstration. Products such as our Biometric Fetal Phantom, Vascular Access Training Kits and Thyroid Biopsy Phantom provide users with a realistic tool to learn general scan techniques or practice ultrasound-guided interventional procedures. CIRS has several quality assurance phantoms and technical staff that can assist your facility in establishing a routine quality assurance program.
	Clarius is the only Handheld Wireless Ultrasound Scanner that doesn't compromise on image quality. It produces high resolution ultrasound images that are displayed on most iOS or Android smart devices. www.clarius.me.
	Electronics & Innovation Ltd, E&I, is a world leader in providing rugged and reliable RF power amplifiers. E&I designs and manufactures RF broadband power amplifiers, phased array systems, impedance matching and variable transformers, and CUSTOM RF solutions. In addition to our standard product lines, we offer custom modules and pallets - designed specifically to fulfill your OEM requirements. Operating globally and continuing to expand our technology, E&I is committed to providing RF power solutions of the highest quality, durability and ruggedness.
	The Focused Ultrasound Foundation was created to improve the lives of millions of people with serious medical disorders by accelerating the development and adoption of focused ultrasound.
	With its structure, starting with theoretical observations in application-specific simulations, transducer development and modular ultrasound systems including innovative software solutions, right up to signal processing, the main department Ultrasound of the Fraunhofer IBMT covers the whole range of competences for system solutions in medical, biotechnological and technical applications. With more than 40 members of staff in three business areas, and five highly specialized working groups, it is the largest ultrasound research unit in Europe. The competences of the working groups are based on more than 25 years of experience.

	FUJIFILM VisualSonics, the undisputed world leader in real-time, <i>in vivo</i>, high-resolution, micro-imaging systems, providing modalities specifically designed for preclinical research. These cutting edge technologies allow researchers to conduct research in cardiovascular, cancer and neurobiology areas. VisualSonics platforms combine high-resolution, real-time <i>in vivo</i> imaging at a reasonable cost with ease-of-use and quantifiable results.
	HTP-MEDS/Hitachi Cable America specializes in complete, in-house solutions for medical tubing applications and products. We can take a print of a multi-lumen tube, design the tooling, cut the tooling in our CNC machine shop, extrude the tube, and make whatever adjustments necessary. This includes the capability to design, manufacture, and prove new screw designs in-house whenever we encounter a new material. You bring the idea and we'll make it a reality.
	IMASONIC is an independent, privately-owned company that develops and produces ultrasonic transducers for health and safety applications. Since its creation in 1989, IMASONIC has been contributing to improving ultrasonic technology by designing and manufacturing transducers based on customer's requirements for medical (HIFU, diagnosis and monitoring) and industrial applications (NDT and measurement). Located in France, the company has 95 employees.
	Kolo Medical has developed a portfolio of ultrasound transducers using CMUT technology. We plan to display them and have a clinical ultrasound system demonstrating performance with live scans.
	Digital Holography Microscope (DHM) as MEMS analyzer and real-time 3D topography inspection tool. DHM is specialized for full field of view 3D topography measurement for MEMS/Ultrasound device up to 25MHz at pm out-of-plane resolution.
	Malvern Panalytical's advanced technologies help characterize materials from nanobubbles to proteins, nanometrology to drug products. Characterize your materials with confidence. Products include Light Scattering, Resonant Mass Measurement, Nanoparticle Tracking Analysis, X-ray Diffraction, X-ray Fluorescence, Chromatography, Rheology and more.
	50+ years of experience in manufacturing high quality piezoelectric ceramics. Meggitt A/S aim at providing materials and components with the highest possible reproducibility of properties and parameters, and to obtain the lowest aging rates in the industry. This strategy enables customers to optimize design and improve performance and production flow.

	NdtXducer is an independent, privately owned company dedicated to provide advanced products. We design and manufacture state-of-the-art ultrasonic transducers and accessories for academic research and industrial NDT applications. Our ultrasonic transducers cover the frequency range from 40kHz and up to 250MHz. We develop custom ultrasonic transducers for scientific, semiconductor, material analysis and medical applications. As a company, we are always motivated to answer many demanding manufacturing and engineering challenges to ensure quality customer service.
	ONDA is the global leader in ultrasound measurement instrumentation & services. Our products are used to acoustically test devices in the medical, industrial, and electronic markets. Over 3,000 hydrophones have been used around the world to support a broad range of applications including medical imaging, therapeutic ultrasound, ultrasonic cleaning, and non-destructive testing. Onda also provides services to design, develop, test, calibrate, and manufacture the most complex ultrasonic devices.
	Polytec is the market leader for non-contact, laser based vibration, and velocity measurement instrumentation. Our innovative solutions, which have inherent properties that are perfect for testing a huge range of ultrasonic actuators, motors and devices, allow our customers to maintain their own technical leadership across many fields.
	Hydrophones, transducer, acoustic measurement tanks and acoustic absorbers in the 0.5-60MHz frequency range
	PreXion Corporation specializes in research and development of medical imaging solutions. Since when we started in 2007, we have been developing and distributing mainly Dental Cone Beam CT scanners around the globe. With our accumulated knowledge in medical imaging systems, in 2015, we developed a commercial Near infrared LED-based photoacoustic imaging system, which is first of its kind in the world. We are committed to develop new technologies continuously and contribute to improve the quality of healthcare through the company philosophy "Make it visible".
	PZFlex has been at the cutting edge of product design and analysis for over 20 years. Heavily used by leading global companies and universities, PZFlex allows engineers to run accurate simulations in drastically reduced time-frames, driving the need for physical prototypes down and accelerating product design cycles.
	scia Systems is a full range supplier of advanced ion beam and plasma processing equipment. The systems are applicable for coating and etching processes in the production of microelectronics, MEMS and precision optical components, in both, high volume production as well as research and development environments.

	Sonic Concepts, Inc. manufactures high-power, wide-bandwidth ultrasound transducers and related equipment. SCI supplies single- or multi-element transducers, as well as annular, linear, and 2D arrays, transmit electronics, passive cavitation detectors, high-intensity hydrophones, radiation force balances, water degassing equipment, and more. SCI supports customer orders from initial prototyping into full-scale production.
	SonoVol's robotic preclinical imaging system will be exhibited at this year's meeting. The system enables whole-body rodent imaging at 35 MHz (b-mode) as well as microbubble enhanced Acoustic Angiography mode. This tool also enables customers to test their own transducers within our preclinical imaging platform.
Sound Technology, Inc	Sound Technology develops and manufactures OEM ultrasound transducers. The transducers are ergonomically designed to maximize comfort for the sonographers, physicians, and patients, even in the most demanding clinical settings. Our flexible design and manufacturing processes allow us to offer a complete portfolio of diagnostic medical ultrasound transducers.
	S-Sharp provides cutting edge solutions to preclinical and clinical research ultrasound. Our core competence is the ability to leverage advanced electronics technologies to address our customer's needs by providing programmability, power and speed. Please visit us to know more about our new products for imaging and therapeutic applications.
	Us4us Ltd. will display the following products and solutions: * advanced ultrasonic research systems featuring a direct RF processing on GPUs; * OEM board level solution for low-power ultrasound scanners with raw RF data acquisition and advanced processing; * services for R&D, medical product development and CE certification.
	Verasonics designs and sells the state-of-the-art Vantage ultrasound research systems for academic and commercial investigators. With patented software-beamforming for unparalleled flexibility, Vantage systems simplify the process of collecting and analyzing acoustic data to facilitate accelerated research and development and pioneer new applications in biomedical diagnosis and therapy and materials science.
	The Advanced Research Department of VERMON SA, France is having long expertise in Ultrasound Transducer Technologies. Our team of experienced Researchers is providing our partners and clients with support and prototypes in various domains such as piezoelectric (composites and single crystals) transducers, cMUTs and piezoelectric energy harvesting devices.
	WinProbe was founded on the idea that the ultimate ultrasonic scanner could be produced with a personal computer and when paired with a single, large, Field Programmable Gate Array chip, the product would attain cost Leadership, Optimal Size, Maximum Functionality, Maximum Upgradability, Ultimate Reliability. This idea is now realized in the product line called the UltraVision.



2018 IEEE International Ultrasonics Symposium

(Including Short Courses & Tutorials)



October 22-25, 2018

Sponsored by the IEEE Ultrasonics, Ferroelectrics, & Frequency Control Society

General Co-Chairs

Ken-ya Hashimoto
Chiba University, JAPAN
k.hashimoto@ieee.org
Clemens Ruppel
GERMANY
clemens.ruppel@t-online.de

Technical Chair

Jan D'hooge
Univ. of. Leuven, BELGIUM
jan.dhooge@uzleuven.be

Finance

Daniel Stevens
U.S.A.
dsjskss@me.com
Shin-ichiro Umemura
Tohoku University, JAPAN
sumemura@ecei.tohoku.ac.jp

Short Course

Pai-Chi Li
National Taiwan U., TAIWAN
Paichi@ntu.edu.tw

Exhibits

C.S. Lam
Skyworks, U.S.A.
CS.Lam@skyworksinc.com

Publication

Kentaro Nakamura
Tokyo Inst. Technology, JAPAN
knakamura@sonic.pi.titech.ac.jp

Web

Amelie Hagelauer
U of Erlangen-Nuremberg, GERMANY
amelie.hagelauer@fau.de

Local Arrangement

Masanori Ueda
Taiyo Yuden, JAPAN
maueda@jty.yuden.co.jp
Ryo Nakagawa
Murata MFG, JAPAN
r_nakagawa@murata.com

Audio Visual

Tatsuya Omori
Chiba University, JAPAN
omori@faculty.chiba-u.jp

Publicity

Robert Weigel
U of Erlangen-Nuremberg, GERMANY
robert.weigel@fau.de
Ji Wang
Ningbo University, CHINA
wangji@nbu.edu.cn



The annual 2018 IEEE International Ultrasonics Symposium (IUS) will be held at the Portopia Hotel, Kobe, Japan, from October 22-25, 2018. The Portopia Hotel is located on Port Island, the first man-made island of Kobe. Access to Port Island is easy because the Kansai International Airport (KIX) is directly connected by a High Speed Ferry (Bay Shuttle).

The abstracts should be submitted in electronic form according to the specific information posted on the conference web page. Each abstract will receive careful review and evaluation by the Symposium Technical Program Committee. Evaluation criteria will include originality of the work, contribution to the state-of-the-art, and overall interest to the ultrasonics community. Papers are solicited for this conference describing original work in the field of ultrasonics from the following **subject classifications**:

Group 1: Medical Ultrasonics

MBB Medical Beamforming and Beam Steering
MBE Biological Effects & Dosimetry
MBF Blood Flow Measurement
MCA Contrast Agents
MEL Elastography
MIM Medical Imaging
MPA Medical Photoacoustics
MSD System & Device Design
MSP Medical Signal Processing
MTC Medical Tissue Characterization
MTH Therapeutics, Hyperthermia, and Surgery

Group 2: Sensors, NDE & Industrial Applications

NAF Acoustic Microfluidics
NAI Acoustic Imaging
NAM Acoustic Microscopy
NAS Acoustic Sensors
NDE General NDE Methods
NEH Energy Harvesting
NFM Flow Measurement
NMC Material & Defect Characterization
NPA Photoacoustics
NPC Process Control
NSP Signal Processing
NTD Transducers: NDE and Industrial
NUA Underwater Acoustics
NWP Wave Propagation

Group 3: Physical Acoustics

PAT Acoustic Tweezers and Particle Manipulation
PNL Nonlinear Acoustics
PGP General Physical Acoustics
PTE High Performance and Temperature Effects
POA Opto-acoustics
PPN Phononics
PTF Thin Films
PMI Modeling and Inversion
PUM Ultrasonic Motors & Actuators
PNR Non-Reciprocal Acoustics

Group 4: Microacoustics – SAW, FBAR, MEMS

ADA Device Applications
ADD Device Design
ADM Device Modeling
AMP Materials & Propagation
AMR Microacoustic Resonators
AMS Microacoustic Sensor Devices & Apps.
ATR Tunable & Reconfigurable Devices

Group 5: Transducers & Transducer Materials

TMC Materials Fabrication and Characterization
TMO Modeling (Analytical & Numerical)
TFT Thin and Thick Piezoelectric Films
TMU Micromachined Ultrasonic Transducers
TMI Biomedical Diagnostic and Imaging Transducers
TTT Biomedical Therapeutic Transducers
THF Front-end and Integrated Electronics
TFI High Frequency Transducers
TPF Applications of Piezoelectrics & Ferroelectrics

CONFERENCE ORGANIZING COMMITTEE

 General Program Chair: Keith Wear US Food and Drug Administration	 Technical Program Chair: Georg Schmitz Ruhr-Universität, Germany	 Finance Chair: Dan Stevens UFFC Treasurer	
 Publicity and Web Chair: Erdal Oruklu Illinois Institute of Technology Chicago, IL, USA	 Short Course Chair: Mario Kupnik TU Darmstadt Germany	 Proceedings Chair: Steve Freear University of Leeds Leeds, United Kingdom	
 Communications Chair: Muyinatu A. Lediju Bell, Johns Hopkins University	 Communications Chair: Caterina Gallippi, University of North Carolina	 Local Arrangements Chair: Gerry Blessing, Former UFFC-S President	
 Local Arrangements Chair: Subha Maruvada, US Food and Drug Administration	 Audio-Visual Chair: Shigao Chen, Mayo Clinic	 Audio-Visual Chair: Yunbo Liu, US Food and Drug Administration	 Exhibits Chair: Larry Kessler Sonoscan Inc. Illinois, USA

SHORT COURSES

Group 1: Medical Ultrasonics

1A - Biomedical Photoacoustics: Illuminating the Principles of Acoustic Radiation Created by Optical Excitation

By: Michael C. Kolios, Ryerson University, Toronto, Ontario, Canada

8:00am-12:30pm Wednesday, September 6

2A - Ultrafast Ultrasound Imaging: Basic Principles and Applications

By: Michael Tanter, Inserm U979 Physics for Medicine, Institut Langevin (ESPCI/CNRS/Inserm), Paris

14:00-18:30 Wednesday, September 6

1B - Elasticity Imaging: Methods and Applications

By: Mark L. Palmeri, Duke University, USA

8:00am-12:30pm Wednesday, September 6

2B - Ultrasound Vector Velocity Imaging

By: Jørgen Arendt Jensen, Technical University of Denmark, Denmark

14:00-18:30 Wednesday, September 6

Group 2: Sensors, NDE & Industrial Applications

1C - Signal Processing and System-on-Chip Designs for Ultrasonic Imaging, Echo Estimation, and Data Compression

By: Jafar Saniie and Erdal Oruklu, Illinois Institute of Technology, Chicago, USA

8:00am-12:30pm Wednesday, September 6

2C - Introduction to Ultrasonic Simulation with COMSOL

By: David W. Greve, Emeritus Professor, Carnegie Mellon University; Principal, DW Greve Consulting

14:00-18:30 Wednesday, September 6

Group 3: Physical Acoustics

1D - The Fundamentals of Bulk-Acoustic-Wave Resonator Acoustics

By: Robert Thalhammer, Avago Technologies, a Broadcom Ltd company, Munich, Germany

8:00am-12:30pm Wednesday, September 6

2D - Phononics

By: Vincent Laude, Institut FEMTO-ST, CNRS, University de Bourgogne Franche-Comt, Besancon, France

14:00-18:30 Wednesday, September 6

Group 4: Microacoustics: SAW, FBAR, MEMS

1E - Numerical Techniques for Simulation and Design of RF SAW/BAW Devices

By: Ken-ya Hashimoto, Chiba University

8:00am-12:30pm Wednesday, September 6

2E - Time-domain Ultrasound Simulation in Biological Tissue using k-Wave

By: Bradley Treeby and Ben Cox, Department of Medical Physics and Biomedical Engineering, University College London, United Kingdom.

14:00-18:30 Wednesday, September 6

Group 5: Transducers & Transducer Materials

1F - Piezoelectric Fundamentals: Materials and Transducers

By: Susan Trolier-McKinstry, The Pennsylvania State University, USA and Sandy Cochran, University of Glasgow, Scotland

08:00-12:30 Wednesday, September 6

2F - Medical Ultrasound Transducers

By: Douglas Wildes and Scott Smith, GE Global Research

14:00-18:30 Wednesday, September 6

TECHNICAL PROGRAM COMMITTEE

Group 1: Medical Ultrasonics



Vice Chair Lori Bridal, University Pierre and Marie Curie, France

Co Chair Alfred Yu, University of Waterloo, Canada

Members

1. Ayache Bouakaz, INSERM, France
2. Lori Bridal, University Pierre and Marie Curie, France
3. Matthew F. Bruce, University of Washington, USA
4. Charles A. Cain, University of Michigan, USA
5. Jean-Yves Chapelon, INSERM, France
6. Magnus Cinthio, Lund University, Sweden
7. Jeremy Dahl, Stanford University, USA
8. Paul A. Dayton, University North Carolina/NCSU, USA
9. Marvin Doyley, University of Rochester, USA
10. Nico de Jong, Erasmus Medical Centre, The Netherlands
11. Chris de Korte, Radboud University Medical, The Netherlands
12. Jan Dhooge, Catholic University of Leuven, Belgium
13. Emad Ebbini, University of Minnesota, USA
14. Stas Emelianov, Georgia Institute of Technology & Emory University School of Medicine, USA
15. Mostafa Fatemi, Mayo Clinic, USA
16. Kathy Ferrara, University of California Davis, USA
17. Stuart Foster, University of Toronto, Canada
18. Brian Fowlkes, University of Michigan, USA
19. Steven Freear, University of Leeds, UK
20. Caterina Gallippi, University of North Carolina, USA
21. Damien Garcia, University of Montreal, Canada
22. James Greenleaf, Mayo Clinic, USA
23. Peter Hoskins, University of Edinburgh, UK
24. John Hossak, University of Virginia, USA
25. Kullervo Hynynen, University of Toronto, Canada
26. Jørgen Arendt Jensen, Technical University Denmark, Denmark
27. Hiroshi Kanai, Tohoku University, Japan
28. Jeff Ketterling, Riverside Research, USA
29. Kang Kim, University of Pittsburgh, USA
30. Michael Kolios, Ryerson University, Canada
31. Elisa Konofagou, Columbia University, USA
32. Nobuki Kudo, Hokkaido University, Japan
33. Roberto Lavarello, Pontificia Universidad Catolica, Peru
34. Pai-Chi Li, National Taiwan University, Taiwan
35. Hervé Liebgott, CREATIS, France
36. Lasse Løvtakken, Norwegian University of Science and Technology, Norway
37. Jian-yu Lu, University of Toledo, USA
38. James G. Miller, Washington University in St. Louis, USA
39. Helen Mulvana, University of Glasgow, UK

40. Kathy Nightingale, Duke University, USA
41. Svetoslav Nikolov, BK Ultrasound, Denmark
42. William D. O'Brien, University of Illinois, USA
43. Michael Oelze, University of Illinois, USA
44. Georg Schmitz, Ruhr-Universität Bochum, Germany
45. Ralf Seip, SonaCare Medical, USA
46. Mickael Tanter, INSERM, France
47. Kai E. Thomenius, Massachusetts Institute of Technology, USA
48. Hans Torp, University of Science and Technology, Norway
49. Piero Tortoli, University of Florence, Italy
50. Matthew W. Urban, Mayo Clinic, USA
51. Ton van der Steen, Erasmus Medical Centre, The Netherlands
52. Mingxi Wan, Xi'an Jiaotong University, China
53. Kendall Waters, Silicon Valley Medical Instruments, USA
54. Keith Wear, Food and Drug Administration, USA
55. Wilko G. Wilkening, Siemens Medical Solutions, USA
56. Chih-Kuang Yeh, National Tsing Hua University, Taiwan
57. Alfred Yu, University of Waterloo, Canada
58. Roger J. Zemp, University of Alberta, Canada
59. Hairong Zheng, Shenzhen Institutes of Advanced Technology, China

Group 2: Sensors, NDE, and Industrial Applications



Vice Chair Erdal Oruklu Illinois Institute of Technology USA

Co Chair Mario Kupnik Technische Universität Darmstadt Germany

Members

1. Robert C. Addison, Rockwell Science Center, USA
2. Walter Arnold, Fraunhofer Institute for NDT, Germany
3. James Blackshire, Air Force Research Laboratory, USA
4. Ramazan Demirli, Villanova University, USA
5. James Friend, UCSD, USA
6. Eric S. Furgason, Purdue University, USA
7. David Greve, Carnegie Mellon University, USA
8. Edward Haeggström, University of Helsinki, Finland
9. Joel Harley, University of Utah, USA
10. Jacqueline Hines, Applied Sensor R&D Corporation, USA
11. Patrick Johnston, NASA Langley Research Center
12. Lawrence W. Kessler, Sonoscan Inc.
13. Pierre T. Khuri-Yakub, Stanford University
14. Mario Kupnik, Technische Universität Darmstadt
15. Roman Maev, University of Windsor
16. Donald McCann, Seadrill, USA
17. Jennifer Michaels, Georgia Tech, USA
18. Kentaro Nakamura, Tokyo Institute of Technology, Japan
19. Erdal Oruklu, Illinois Institute of Technology, USA
20. Nishal Ramadas, Elster Instromet, Belgium – UK

21. Jafar Saniie, Illinois Institute of Technology, USA
22. Bernhard Tittman, Pennsylvania State University, USA
23. Jiromaru Tsujino, Kanazawa University, Japan
24. John F. Vetelino, University of Maine, USA
25. Paul Wilcox, University of Bristol, UK
26. William Wright, University College Cork, Ireland
27. Donald E. Yuhas, Industrial Measurement Systems, USA

Group 3: Physical Acoustics



Vice Chair Koen W.A. van Dongen Delft University of Technology Delft, Netherlands
Co Chair Dave Feld, Broadcom Ltd. USA

Members

1. Arthur Ballato, Clemson University, USA
2. Anne Bernassau, Heriot Watt University, UK
3. Jan Brown, JB Consulting, USA
4. Charles Courtney, University of Bath, UK
5. Emmanuel Defay, LIST, Luxemburg
6. Jiun-Der Yu, Epcos Inc., USA
7. Jianke Du, Ningbo University, China
8. Dave Feld, Broadcom Ltd., USA
9. Takefumi Kanda, Okayama University, Japan
10. Kimmo Kokkonen, Qorvo, Germany
11. Minoru Kuribayashi Kurosawa, Tokyo Institute of Technology, Japan
12. Amit Lal, Cornell University, USA
13. John Larson, Broadcom Ltd., USA
14. Vincent Laude, FEMTO-ST / CNRS, France
15. Andreas Mayer, HS Offenburg-Univ. of Applied Sciences, Germany
16. Alex Maznev, MIT, USA
17. Farid Mitri, Chevron, USA
18. Mihir Patel, Schlumberger-Doll Research, USA
19. Yan Pennec, IEMN / Universite de Lille 1, France
20. Bikash Sinha, Schlumberger-Doll Research, USA
21. Eun Sok Kim, University of Southern California, USA
22. Masaya Takasaki, Saitama University, Japan
23. Robert Thalhammer, Broadcom Ltd., Germany
24. Koen W.A. Van Dongen, Delft University of Technology, Netherlands
25. Jorg Wallaschek, Leibniz Universitat Hannover, Germany
26. Ji Wang, Ningbo University, China
27. Takahiko Yanagitani, Waseda University, Japan
28. Yook-Kong Yong, Rutgers University, USA

Group 4: Microacoustics - SAW, FBAR, MEMS



Vice Chair Karl Wagner RF360 Europe GmbH Munich, Germany

Co Chair Robert Weigel Universitat Erlangen-Nurnberg Germany

Members

1. Sylvain Ballandras, freq 'n' sys SAS, France
2. Sunil Bhawe, Purdue University, USA
3. Sergey Biryukov, IFW Dresden, Germany
4. Paul Bradley, Broadcom, USA
5. Jidong Dai, Murata Electronics, Inc., USA
6. Omar Elmazria, Universite de Lorraine, France
7. Gernot Fattinger, Qorvo Inc., USA
8. Gerhard Fischerauer, University of Bayreuth, Germany
9. Amelie Hagelauer, University Erlangen Nuernberg, Germany
10. Tao Han, Shanghai Jiao Tong University, China
11. Ken-ya Hashimoto, Chiba University, Japan
12. Shitang He, IACAS, China
13. Michio Kadota, Tohoku University, Japan
14. Jyrki Kaitila, Broadcom, Germany
15. Jan Kuypers, Qorvo Inc. , USA
16. Ryo Nakagawa, Murata, Japan
17. Hiroyuki Nakamura, Skyworks-Panasonic Corp., Japan/USA
18. Natalya Naumenko, Nat. University of Science & Technology MISIS, Russia
19. Tuomas Pensala, VTT, Finland
20. Mauricio Pereira da Cunha, University of Maine, USA
21. Maximilian Pitschi, RF360 Europe GmbH, Germany
22. Leonard Reindl, Albert-Ludwigs-University Freiburg, Germany
23. Richard Ruby, Broadcom, USA
24. Marc Solal, Qorvo, Inc , USA
25. Shuji Tanaka, Tohoku University, Japan
26. Masanori Ueda, Taiyo Yuden, Japan
27. Karl Wagner, RF360 Europe GmbH, Germany
28. Robert Weigel, University Erlangen Nuernberg, Germany
29. Ventsislav Yantchev, Q-Arts Consulting, Bulgaria
30. Sergei Zhgoon, National Research University, Russia

Group 5: Transducers and Transducer Materials

Vice Chair Sandy Cochran University of Glasgow UK

Co Chair Omer Oralkan North Carolina State University USA

Members

1. Jeremy Brown, Dalhousie University, Halifax, Canada
2. Sandy Cochran, University of Glasgow, UK
3. David Cowell, University of Leeds, UK
4. Christopher Daft, River Sonic Solutions, USA
5. Lorian Davidsen, Philips Healthcare, USA
6. Levent Degertekin, Georgia Institute of Technology, USA
7. Christine Demore, University of Glasgow, UK
8. Charles Emery, Ulthera Inc., USA
9. Arif Sanli Ergun, TOBB University, Turkey
10. Lynn Ewart-Paine, NUWC, USA
11. Nicolas Felix, Vermon SA, France
12. Tomas Gomez, CSIC, Madrid, Spain
13. Anne-Christine Hladky, Institut Supérieur d'Electronique et du Numerique, France
14. Xiaoning Jiang, North Carolina State University, USA
15. Ho-yong Lee, Ceracomp Co., Ltd, Korea
16. Richard O'Leary, University of Strathclyde, UK
17. Franck Levassort, Francois-Rabelais University of Tours, Tours, France
18. Omer Oralkan, North Carolina State University, USA
19. Wei Ren, Xi'an Jiaotong University, China
20. Paul Reynolds, Siemens Healthcare, USA
21. Yongrae Roh, Kyungpook National University, Korea
22. Stefan Rupitsch, Friedrich-Alexander University Erlangen-Nuremberg, Erlangen, Germany
23. Jean-Francois Saillant, Areva, France
24. Scott Smith, GE Global Research, USA
25. Wallace Smith, Office of Naval Research, USA
26. Susan Trolrier-McKinstry, Pennsylvania State University, USA
27. Jian Yuan, ALS Shanghai, China
28. Shujun Zhang, University of Wollongong, Australia
29. Qifa Zhou, University of Southern California, USA

PLENARY SPEAKER

Prospects of High Frequency Biomedical Ultrasound

K. Kirk Shung Professor of Bioengineering at University of Southern California
September 7th, 2017 Thursday 8:00 AM – 9:30 AM, Regency Ballroom, Omni Shoreham Hotel



K. Kirk Shung obtained a B.S. in EE from Cheng Kung University, Taiwan in 1968 and a Ph.D. in EE from University of Washington, Seattle, WA, in 1975. He has been a professor of biomedical engineering at USC since 2002 and the director of NIH Resource Center on Medical Ultrasonic Transducer Technology since 1997. He was appointed a dean's professor in biomedical engineering at the Viterbi School of Engineering of USC in 2013.

Dr. Shung is a life fellow of IEEE, and a fellow of American Institute of Ultrasound in Medicine. He is a founding fellow of American Institute of Medical and Biological Engineering. He received the IEEE Engineering in Medicine and Biology Society Early Career Award in 1985 and was the coauthor of a paper that received the best paper award for IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control (UFFC) in 2000. He was elected an outstanding alumnus of Cheng-Kung University in Taiwan in 2001. He was selected as the distinguished lecturer for the IEEE UFFC society for 2002-2003. He received the Holmes Pioneer Award in Basic Science from American Institute of Ultrasound in Medicine in 2010 and the academic career achievement award from the IEEE Engineering in Medicine and Biology Society in 2011. He is the recipient of IEEE Biomedical Engineering Award in 2016. Dr. Shung has published more than 500 papers and book chapters. He is an associate editor of IEEE Transactions on UFFC, IEEE Transactions on Biomedical Engineering and Medical Physics. He is an editorial board member of Scientific Reports. Dr. Shung's research interest is in ultrasonic transducers, high frequency ultrasonic imaging and ultrasound microbeam.

ABSTRACT

High frequency ultrasonic imaging (> 30 MHz) is considered by many to be a frontier in ultrasonic imaging because higher frequencies yield much improved spatial resolution. The consequence is a reduced depth of penetration. It has many biomedical applications ranging from visualizing internal and surface structures of the blood vessel wall and mapping anterior segments of the eye, to characterizing skin tumors. An added significance is the recent intense interest in small animal imaging for the purpose of evaluating the efficacy of drugs and gene therapy. A few novel applications are being investigated at USC. These include the development of a 60 MHz 64 element linear array mounted on a biopsy needle for identifying microcalcifications during breast biopsy. The main challenge lies not only in the design and fabrication of the array but also in the development of interconnect. In another project, a forward looking intravascular catheter with 32 element phased array mounted at the tip is being developed. It will facilitate catheter guidance and avoid perforation during catheterization. Biomedical applications of high frequency ultrasound especially in the ultrahigh frequency (UHF) range > 100 MHz other than imaging (acoustic microscopy) have been mostly overlooked. At UHF frequencies, the width of an ultrasound beam is of only a few microns, approaching the dimensions of many cells, hence it may be called "ultrasound microbeam". Sensitive UHF single element transducers have been developed to allow these applications to be advanced. In particular, the developments of acoustic tweezer for manipulating cells and acoustic transfection for transporting drug and genes across cell membrane are just two prominent examples. Efforts in utilizing acoustic tweezer to measure intercellular forces and cellular deformability and in utilizing UHF ultrasound to examine cellular mechanotransduction have also been pursued.

INVITED SPEAKERS

Group 1: Medical Ultrasonics

High intensity therapeutic ultrasound in the brain

Jeff Elias, M.D., Professor of Neurological Surgery, University of Virginia, USA

Frontiers in elastography including ultrasound and other modalities

Brian Garra, M.D., Food and Drug Administration, USA

Shear wave speed: Becoming a clinically valuable biomarker

Mark Palmeri, Associate Professor of the Practice in the Department of Biomedical Engineering, Duke University, USA

Frontiers in image-guided intervention including ultrasound and other modalities

Keyvan Farahani, Ph.D., National Institutes of Health, USA

Coherence beamforming and its applications to the difficult-to-image patient

Jeremy Dahl, Assistant Professor of Radiology, Stanford University, USA

Ultrafast imaging and its applications

Mathieu Pernot, Ph.D., Institute Langevin, France

Breaching the blood-brain barrier noninvasively

Kullervo Hynynen, Professor, University of Toronto, Canada

Next-generation ultrasound research scanner design

Piero Tortoli, Professor, University of Florence, Italy

Machine learning aided diagnosis in medical ultrasound

Alison Noble, Technikos Professor of Biomedical Engineering, Oxford University, UK

Ultrasonic neuromodulation by brain stimulation with pulsed ultrasound

William Tyler, Associate Professor of Biological Engineering, Arizona State University, USA

Group 2: Sensors, NDE & Industrial Applications

Shaping acoustofluidic landscapes to profile and separate cells and sub-micron particles

Per Augustsson, Ph.D., Lund University, Sweden

Chemical and biological sensing using acoustic wave propagation and nano-scale phenomena

Venkat Bhethanabotla, Professor of Chemical & Biomedical Engineering, University of South Florida, USA

Transducers for harsh environments for applications to the nuclear industry

Bernhard Tittmann, Schell Professor and Professor of Engineering Science and Mechanics, Pennsylvania State University, USA

Group 3: Physical Acoustics

Coupling of mechanical resonators under surface acoustic wave excitation

Sarah Benchabane, FEMTO-ST, CNRS, Université de Franche-Comté, Besancon, France

Nonlinear effects in NEMS - Improving frequency stability

Villanueva Luis Guillermo, Assistant Professor, École Polytechnique Fédérale de Lausanne, Switzerland

A few twists regarding the momentum of shaped beams

Gabe Spalding, Professor of Physics, Illinois Wesleyan University, USA

Group 4: Microacoustics: SAW, FBAR, MEMS

Temperature compensated SAW with high quality factor

Benjamin Abbott, Ph.D., Qorvo, Inc, USA

Which is the best thin film piezoelectric material?

Paul Muralt, Professor, École Polytechnique Fédérale de Lausanne, Switzerland

I.H.P. SAW technology and its application to microacoustic components

Tsutomu Takai, Murata, Japan

Group 5: Transducers & Transducer Materials

High frequency ultrasound arrays and their applications

Jeremy Brown, Associate Professor, Dalhousie University, Canada

Regulation of medical ultrasound devices in the United States of America

Keith Wear, Ph.D., Food and Drug Administration, USA

Piezoelectric materials and application-oriented figures of merit

Shujun Zhang, Professor, University of Wollongong, Australia

STUDENT PAPER COMPETITION

Student Paper Competition Chairs:

Ralf Seip (Group 1), Erdal Oruklu (Group 2), Koen van Dongen (Group 3), Karl Wagner (Group 4), and Sandy Cochran (Group 5)

PA-1 3D rendering of Electromechanical Wave Imaging for the characterization and optimization of biventricular pacing conditions in Heart Failure patients undergoing Cardiac Resynchronization Therapy
Lea Melki¹, Ethan Bunting¹, Daniel Wang², Pierre Nauleau¹, Elisa Konofagou^{1,3}

¹*Biomedical Engineering, Columbia University, New York, NY, USA,*

²*Medicine - Division of Cardiology, Columbia University, New York, NY, USA,*

³*Radiology, Columbia University, New York, NY, USA*

PA-2 Multispectral ultrafast ultrasound imaging: a versatile tool probing dynamic phase-change contrast agents

Heechul Yoon¹, Stanislav Emelianov^{1,2}

¹*School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA,*

²*Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA*

PA-3 In Vivo Photoacoustic Detection of Lymph Node Metastasis using Glycol-Chitosan-Coated Gold Nanoparticles

Diego Dumani^{1,2}, In-Cheol Sun^{1,2}, Stanislav Emelianov^{1,2}

¹*Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA,*

²*School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA*

PA-4 Full 4D functional ultrasound imaging in rodents using a matrix array

Claire Rabut¹, Victor Finel¹, Mafalda Correia¹, Mathieu Pernot¹, Thomas Deffieux¹, Mickaël Tanter¹

¹*INSERM U979, Paris, France*

PA-5 3D functional ultrasound imaging of the visual system in the pigeon brain

Richard Rau¹, Wolfgang Scheffer¹, Markus Belau¹, Pieter Kruizinga², Nico de Jong^{2,3}, Johan G. Bosch², Georg Maret¹

¹*University of Konstanz, Germany,*

²*Thorax Center, Erasmus MC, Rotterdam, Netherlands,*

³*Faculty of Applied Sciences, Delft University of Technology, Delft, Netherlands*

PA-6 Volumetric imaging of fast mechanical waves in the heart using a clinical ultrasound system: a feasibility study

Pedro Santos^{1,2}, Lasse Løvestakken^{2,3}, Eigil Samset^{2,4}, Jan D'hooge¹

¹*Department of Cardiovascular Sciences, KU Leuven, Belgium,*

²*GE Vingmed Ultrasound, GE Healthcare, Norway,*

³*Department of Circulation and Medical Imaging, NTNU, Norway,*

⁴*Center for Cardiological Innovation, Norway*

PA-7 Prevent lithium dendrite formation in rechargeable batteries through surface acoustic waves

Ann Huang¹, James Friend¹

¹Center for Medical Devices and Instrumentation, University of California, San Diego, La Jolla, CA, USA

PA-8 Directivity of a Planar Fabry-Perot Optical Ultrasound Sensor

Danny Ramasawmy¹, James Guggenheim¹, Paul Beard¹, Benjamin Cox¹, Bradley Treeby¹

¹Medical Physics and Biomedical Engineering, University College London, United Kingdom

PA-9 Ultrasound flow mapping of 3D turbulent liquid metal flows

Norman Thieme¹, Karl Büchner², Richard Nauber¹, Lars Büttner¹, Olf Pätzold², Jürgen Czarske¹

¹Laboratory for Measurement and Sensor System Techniques, TU Dresden, Germany,

²TU Freiberg, Germany

PA-10 Design of multi-frequency acoustic kinoforms

Michael Brown¹, Ben Cox¹, Bradley Treeby¹

¹University College London, London, United Kingdom

PA-11 High electromechanical coefficient $k_t^2=19\%$ thick ScAlN piezoelectric films for ultrasonic transducer in low frequency of 80 MHz

Ko-hei Sano¹, Rei Karasawa¹, Takahiko Yanagitani^{1,2}

¹Waseda university, Japan,

²JST-PRESTO, Japan

PA-12 Variable-focus liquid crystal lens using ultrasound vibration

Yuki Shimizu¹, Daisuke Koyama¹, Akira Emoto¹, Kentaro Nakamura², Mami Matsukawa¹

¹Faculty of Science and Engineering, Doshisha University, Kyotanabe, Kyoto, Japan,

²Laboratory for Future Interdisciplinary Research of Science and Technology, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan

PA-13 Role of metal electrodes in the generation of third order non-linearities in Surface Acoustic Wave components

Vikrant Chauhan¹, Markus Mayer², Andreas Mayer³, Elena Mayer³, Werner Ruile², Thomas Ebner², Karl Wagner², Robert Weigel¹, Amelie Hagelauer¹

¹Institute of Electronics Engineering, Erlangen Nuremberg University, Erlangen, Bayern, Germany,

²Advanced development discreet, RF360jv, Munich, Bayern, Germany,

³Hochschule Offenburg, Germany, Offenburg, Germany

PA-14 Piston Mode Operation of SAW Resonators Using Coupling Between Multiple SAW Modes

Benfeng Zhang^{1,2}, Tao Han¹, Gongbin Tang^{1,2}, Xinyi Li^{2,3}, Yulin Huang^{2,3}, Tatsuya Omori², Ken-ya Hashimoto²

¹School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, China, People's Republic of,

²Graduate School of Engineering, Chiba University, Japan,

³School of Electronic Engineering, University of Electronic Science and Technology of China, China, People's Republic of

PA-15 AlN/ZnO/LiNbO₃ packageless structure as a low-profile sensor for on-body applications

Cécile Floer¹, Mohammed Moutaouekkil¹, Florian Bartoli^{1,2}, Harshad Mishra¹, Sami Hage-Ali¹, Stefan MC Murtry¹, Philippe Pigeat¹, Thierry Aubert², Olivier Bou Matar³, Abdelkrim Talbi³, Omar Elmazria¹

¹*Institut Jean Lamour UMR 7198, Université de Lorraine - CNRS, Nancy, France,*

²*LMOPS EA 4423, CentraleSupélec - Université de Lorraine, Metz, France,*

³*LIA LEMAC/LICS - IEMN UMR CNRS 8520, ECLille - USTL, PRES Université Lille Nord de France, Villeneuve d'Ascq, France*

PA-16 An Optically Transparent Air-Coupled Capacitive Micromachined Ultrasonic Transducer (CMUT) Fabricated Using Adhesive Bonding

Xiao Zhang¹, Feysel Y. Yamaner¹, Oluwafemi Adelegan¹, Ömer Oralkan¹

¹*Electrical and Computer Engineering, North Carolina State University, Raleigh, North Carolina, USA*

PA-17 A Front-End ASIC for Miniature 3-D Ultrasound Probes with In-Probe Receive Digitization

Chao Chen¹, Zhao Chen¹, Deep Bera², Emile Noothout³, Zu-yao Chang¹, Hendrik Vos^{2,3}, Johan Bosch², Martin Verweij^{2,3}, Nico de Jong^{2,3}, Michiel Pertijs¹

¹*Electronic Instrumentation Lab., Delft University of Technology, Delft, Netherlands,*

²*Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands,*

³*AcousticalWavefield Imaging, Delft University of Technology, Delft, Netherlands*

PA-18 A Front-end Integrated Circuit for a 2D Capacitive Micromachined Ultrasound Transducer (CMUT) Array for a Noninvasive Neural Interface to the Retina

Chunkyun Seok¹, Xun Wu¹, F. Yalcin Yamaner¹, Omer Oralkan¹

¹*Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA*

POSTER PRESENTATION GUIDE

Posters will be on display in the Exhibit Hall. This year we will have three full day poster sessions. Each poster session is divided into two time slots, as follows:

Mornings: 9:30 to 10:30 AM
Afternoons: 3:00 to 4:00 PM

Posters must be posted in the morning between 7:30 am to 8:00 am. They must be removed between 5:30 pm to 6:00 pm at the end of the day. Therefore, each poster will be displayed for a full day (8:00 am instead of 5:30 pm). Please note, on the last day of conference (Saturday September 9th), posters need to be removed at 4:00pm instead of 5:30pm since exhibitor booths will be dismantled after 4:00pm.

Student Poster Competition (SPC) posters will be displayed in the Bird Cage Walk. In recognition of their accomplishment, SPC posters will be on display for all THREE days of the conference. Student authors are required to be present for all six poster sessions to describe their work. Judges will review the SPC posters on Friday only.

Instructions

- One poster board is allocated to each presentation. The recommended poster size is **Landscape format**, Arch E which is 36 inches high by 48 inches wide (92 cm x 122 cm). European alternative ISO A0 (84cm x 119cm) can also be used.
- Posters must be mounted using tapes/pins provided by the organizing committee.
- Each poster presenter is required to defend his/her poster during the respective poster session slot for the paper to be included in the conference proceedings.
- Simply posting the pages of your written version of the proceedings paper is NOT effective and thus NOT acceptable for your poster.
- The title of your poster should be done in block letters which are AT LEAST 8 to 10 cm (3 to 4 inches) high.
- All text must be easily readable from a distance of 1 to 2 meters. Make the lettering at least 1 cm high, smaller lettering will not be legible from a distance of 1 to 2 meters.
- All graphs and charts should be AT LEAST 25 X 30 cm (approximately 8.5 x 11 inches) or larger.
- It is a good idea to sequentially number your materials in the poster. This will indicate to the viewer a logical progression through your poster.
- Provide an introduction (outline) and a summary or conclusion for your poster.
- Prepare your poster carefully so that it can be used as the basis to explain and answer questions from the viewers.
- It is helpful to have copies of the written version of your paper available for those viewers who may want to study specifics of your work in more detail.
- Have your business cards available for those who may wish to contact you at a later date.
- Bring along a tablet of blank paper that you may use for a discussion of technical details relating to your poster.

ORAL PRESENTATION GUIDE

Observing Your Allotted Time

- The total time allotted to each speaker is 15 minutes. You should plan to speak for 12 minutes and leave 3 minutes for questions.
- Invited speakers have twice this time, 30 minutes in total, and they should plan to speak for about 25 min, leaving 5 min. for questions.
- There is NO EXCUSE for using more than your allotted time. Rehearse your presentation several times; projecting slides and doing anything else you would otherwise expect to do at the meeting. It is a discourtesy to your audience, the Session Chair and the other speakers to exceed your allotted time. The Session Chairs are instructed to adhere to the printed schedule for the session. With parallel sessions this is critical to the overall success of the conference.

Organization of Oral Sessions

- There are seven parallel sessions in the conference and the Technical Program Committee will ensure minimal conflicts of topics between the parallel sessions.
- Audio and Video Equipment Provided at the Conference: The conference will be equipped with a computer video projector and a computer that is connected to the projector for each oral presentation room. Normal audio equipment such as microphones will be provided.
- Software Used in the Conference: The computers are equipped with Windows OS as well as **Microsoft PowerPoint (Office)**, and **Adobe Acrobat Reader**. The PowerPoint 2013/2016 is the preferred projection software offered at the conference.
- It is strongly recommended to all authors to check their presentation in the Speaker Ready Room for compatibility and proper operation.
- Avoid Font Problems: Since your computer may have sophisticated fonts (such as special equation symbols) that the conference computers do not have, it is suggested that when you save your PowerPoint presentations, use "Save As" from your "File" pull-down menu. When a dialog box pops up, click on the "Tools" menu on that dialog box and select "Save Options". Then, check the option "Embed true type fonts". Click "OK" and then click "Save". This allows you to include the fonts you are using in your presentations to minimize the font incompatibility problems. Otherwise, any fonts that are not recognized by the conference computers would be incomprehensible. In addition to the default ".pptx" file format, we suggest that you also save a copy of your presentations in the ".ppsx" (PowerPoint Show) format for safe (the ".ppsx" version may also include some of the special fonts in your presentations). If you have a full version of Adobe Acrobat, we suggest you also save (or print) your presentations into a ".pdf" format and thus you will be able to use the free Adobe Reader software to present in case nothing else would work.
- Movies or Videos: If you have movies or videos, the best way to present them properly is to use your own laptop computers since the conference computers may not have the Code/Decode (Codec) software that is necessary to play your movies or videos. If you do not wish to bring your own computers, you may have to convert all of your movies and videos to the Moving Picture Experts Group 1 (MPEG1) format to ensure a cross-platform compatibility. In addition, the movie or video files should be placed where the links in your presentations are pointing to. To make it easy, you could place the movies and videos in the same folder as your ".pptx" or ".ppsx" files when you prepare your presentations and then copy all these files together to a folder or the desktop of the conference computers.
- USB Thumb Drives: Nowadays it is convenient to save your PowerPoint presentations in a USB 2.0/3.0 thumb drive. The conference computers will be equipped with the USB 2.0/3.0 interfaces. However, some USB drives may have security or driver issues that may prevent the drives from being recognized by the conference computers. Please scan your USB drives to remove viruses if there are any before you bring them to the conference.

- **CD or DVD Backup:** You could also save a copy of your presentation on a CD-R, CD-RW, DVD+/-R, or DVD+/-RW as a backup in case your USB thumb drives do not work with the conference computers (such as missing drivers or having security protections). When you use CD or DVD media, you should "close" (not be able to add any more files) them to increase the chance that these media could be read by the conference computers. If you use DirectCD to save your presentations, please make sure they are readable in a computer without DirectCD software installed.
- **VGA Adapters:** The conference computer projectors will be equipped only with a standard 15-pin analog Video Graphic Array (VGA) connector. If you decide to bring your laptop computers that do not have a VGA port, it is your responsibility to bring all necessary video output adapters with you so that your computers can be connected to the projectors (your computer vendors usually sell or ship such converters with your computers).
- **230V-110V Voltage Converters:** Washington, D.C. uses 110V/60Hz as its power standard with two-pronged plugs. If your laptop computers do not work with 110V/60Hz, it is your responsibility to bring all necessary power converters. In addition, please plug the power adapters into the power strips so that your laptop computers will not run out of power during your presentations. Please also notice that the plug of the power adapter of your laptop computer may not necessarily fit with the 110V power strip. In this case, international converters/adaptors may be needed for you to use the power strips.
- **Backup Your Laptop Computers:** We suggest you make a copy of your presentations on a USB thumb drive in case your computers are damaged, lost, or cannot be used for whatever reasons.

Good Practices

- Show no more than 1 slide per minute of speaking time. This means approximately 10-12 slides MAXIMUM for the 12 minutes of presentation at the symposium. Remember, the last three minutes of the presentation are for questions from the audience. It detracts from the quality of the presentation to flash numerous graphs, equations, or tables on the screen in rapid sequence in an effort to squeeze a presentation into its allotted time.
- Make the letters on your slides BIG ENOUGH. Suggested minimum font is 14.
- Put no more than 12 lines of text or 4 curves on any slide.
- Avoid lengthy tabulations of numerical data and limit equations to those for which the terms can be properly defined.
- Your audience needs time to interpret the data that you present. While you are very familiar with the data displayed, the audience is not. Describe the abscissa, coordinates, units and the legend for each curve.
- When you display a curve, tell the audience what they should be looking for in order to grasp the point you are trying to make. The audience will not have time to figure it out for themselves.
- Use repetition in your talk to ensure the facts are understood by the audience.
- In addition to the body of the talk, present an introduction and a summary or conclusion.
- Include only information or data that can be properly explained in the allotted time.
- Repeat any questions that are posed to you.
- If a question requires a lengthy reply, suggest that you and the person asking the question meet after the presentation. Then take the discussion out of the meeting room.

SPEAKER READY ROOM

The Speaker Ready Room is in the **Forum Room** of the Omni Shoreham Hotel.

Please submit your presentation in person to the Speakers' Ready Room at least 1 ½ hour before the beginning of session. For the morning sessions please submit power point presentations by the end of the prior day.

The Speaker ready hours for submitting presentations are:
Wednesday-Saturday: 7:00am–5:00pm.

CONDENSED IUS SESSIONS PROGRAM

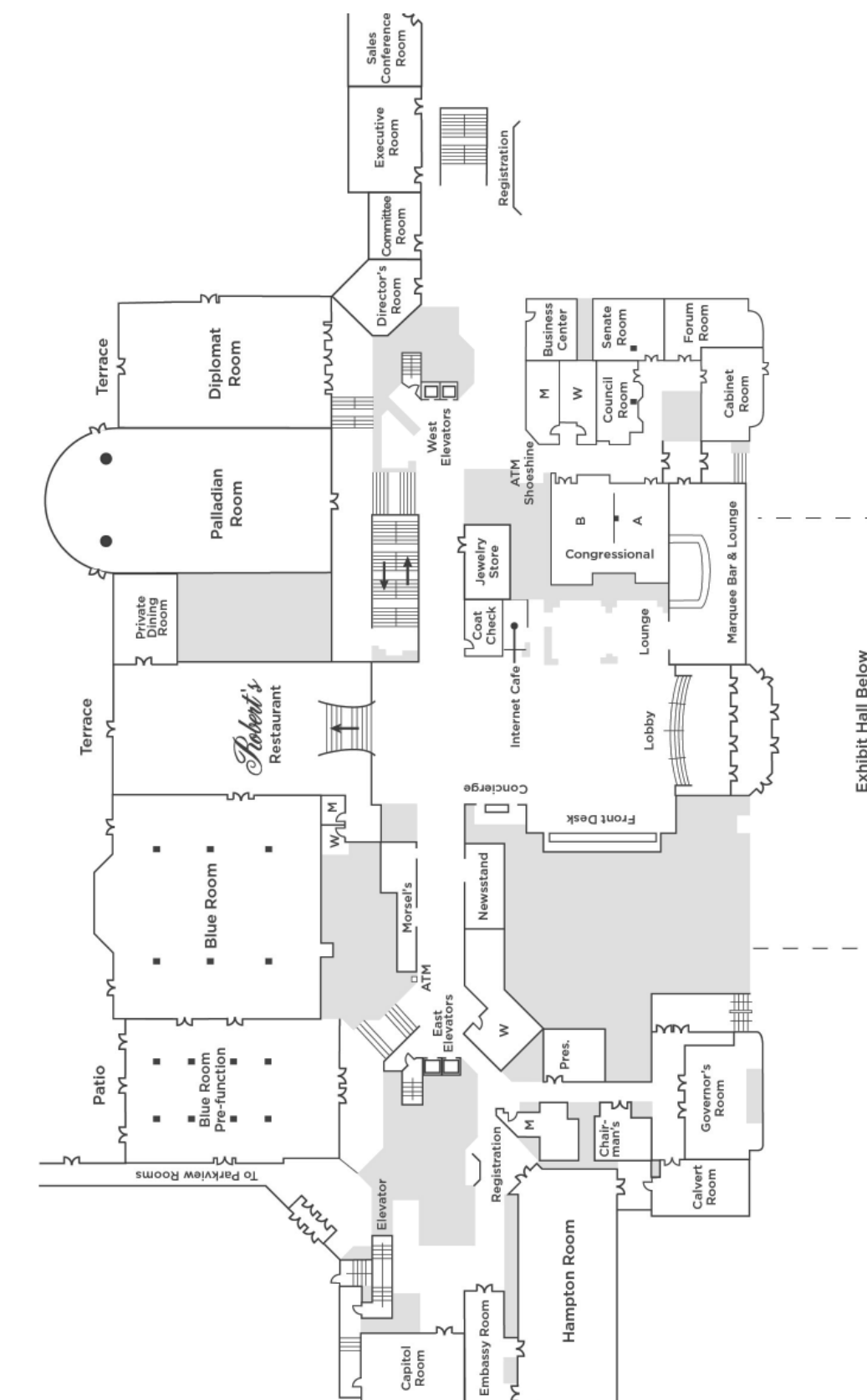
Condensed Program: Wednesday, September 6, 2017						
Locations for Short Course Will be Announced on September 6.						
8:00 am-12:30 pm	Short Course 1A Biomedical Photoacoustics: Illuminating the Principles of Acoustic Radiation Created by Optical Excitation	Short Course 1B Elasticity Imaging: Methods & Applications	Short Course 1C Signal Processing and System-on-Chip Designs for Ultrasonic Imaging, Echo Estimation, and Data Compression	Short Course 1D The Fundamentals of Bulk-Acoustic-Wave Resonator Acoustics	Short Course 1E Numerical Techniques for Simulation and Design of RF SAW/BAW Devices	Short Course 1F Piezoelectric Fundamentals - Materials and Transducers
12:30 pm-2:00 pm	Lunch					
2:00 pm-6:30 pm	Short Course 2A Ultrafast Ultrasound Imaging: Basic Principles and Applications	Short Course 2B Ultrasound Vector Velocity Imaging	Short Course 2C Introduction to Ultrasonic Simulation with COMSOL	Short Course 2D Phononics	Short Course 2E Time-Domain Ultrasound Simulation in Biological Tissue using k-Wave	Short Course 2F Medical Ultrasound Transducers
6:00 pm-8:00 pm	Industry & University Employer / Job Seeker Network Event (Blue Room)					

Condensed Program: Thursday, September 7, 2017							
8:00 am-9:30 am	Opening & Plenary Talk (Regency Ballroom)						
9:30 am-10:30 am	Poster Session and Refreshments (Exhibit Hall and Bird Cage Walk)						
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room	Empire Room
10:30 am-12:00 pm	Session 1A. MEL: Cardiac Elasticity Imaging	Session 2A. MBB: Coherence and adaptive beamforming	Session 3A. MTH: Histotripsy, Lithotripsy, Thrombotripsy	Session 4A. MBF: 3D Flow Imaging	Session 5A. Transducers	Session 6A. PNL: Nonlinear Acoustics	Session 7A. Ultrasound Imaging Devices I
12:00 pm-1:30 pm	Lunch Break						
1:30 pm-3:00 pm	Session 1B. Clinical: Clinical Ultrasound	Session 2B. MSP: Improving Resolution and Detection	Session 3B. MTH: Cavitation	Session 4B. MPA: Endoscopic / Intravascular Photoacoustic Imaging and New Approaches	Session 5B. Imaging and Photoacoustics	Session 6B. Materials for Microacoustics	Session 7B. High-frequency Imaging Devices and Systems
3:00 pm-4:00 pm	Poster Session and Refreshments (Exhibit Hall and Bird Cage Walk)						
4:00 pm-5:30 pm	Session 1C. MTH: HIFU and Ablation	Session 2C. MBB: Novel imaging methods	Session 3C. MCA: Microbubble localization microscopy 1	Session 4C. MTC: Staging and monitoring of diseases and tissue physiology	Session 5C. Material and Defect Characterization	Session 6C. POA - Opto-Acoustics	Session 7C. Innovative Applications of Microacoustic Components
7:00 pm-9:00 pm	Reception (Blue Room)						

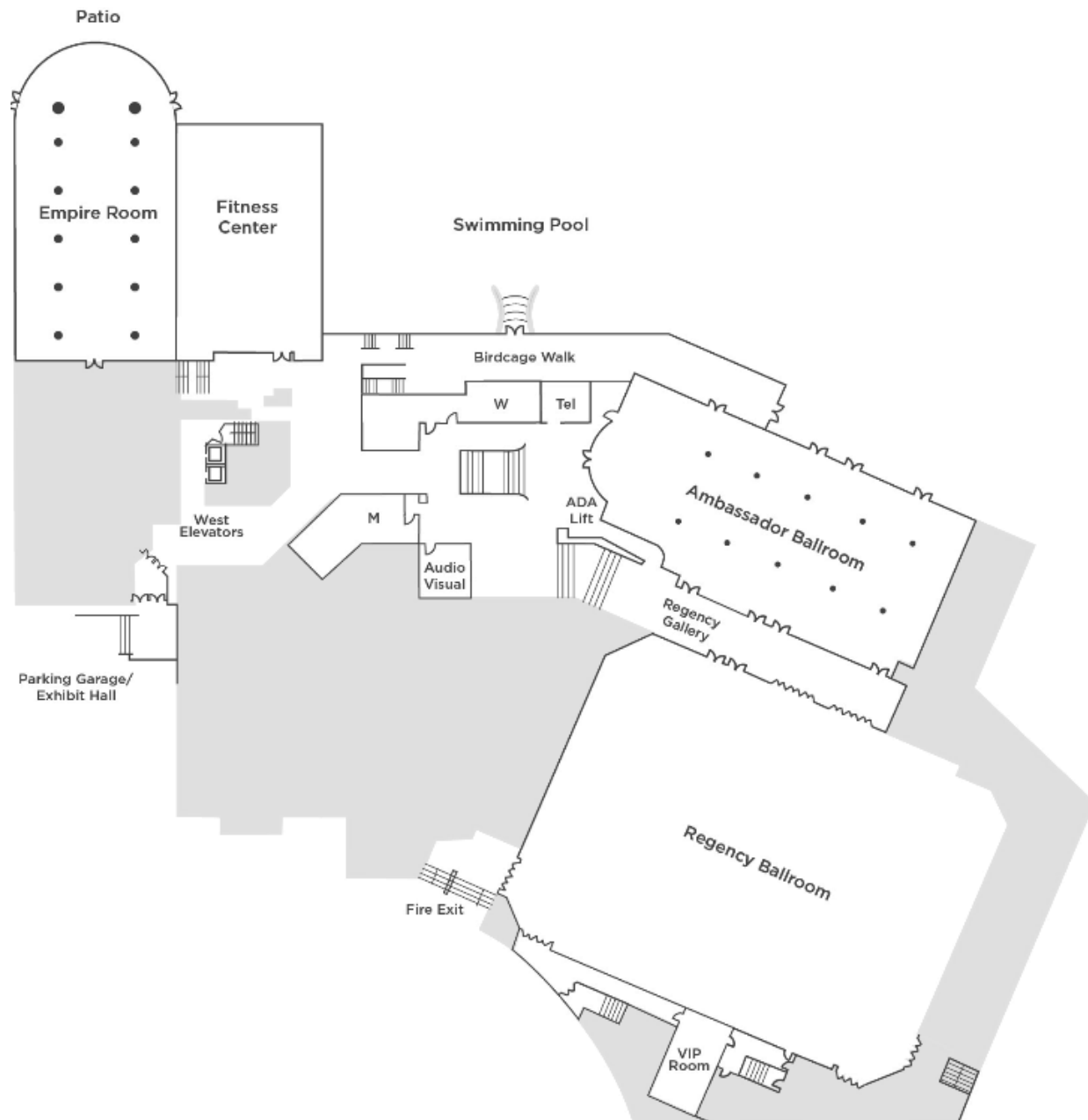
Condensed Program: Friday, September 8, 2017							
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room	Empire Room
8:00 am-9:30 am	Session 1D. MIM: Brain and acoustoelectric imaging	Session 2D. MSD: Novel real-time implementations	Session 3D. MEL: New Elasticity Methods	Session 4D. MPA: Photoacoustic reconstruction approaches and technical developments	Session 5D. Acoustic Nonlinearity	Session 6D. Microfluidics	Session 7D. Medical Ultrasound Devices and their Applications
9:30 am-10:30 am	Poster Session and Refreshments (Exhibit Hall and Bird Cage Walk)						
10:30 am-12:00 pm	Session 1E. MBF: Cerebrovascular and Microvascular Imaging	Session 2E. MSD: Towards real-time 3D imaging	Session 3E. MEL: Elasticity Based Tumor Detection	Session 4E. MPA: Clinical and Pre-Clinical models	Session 5E. PAT - Acoustic Tweezers and Particle Manipulation	Session 6E. Sensors	Session 7E. CMUT Technology
12:00 pm-1:30 pm	Lunch Break						
1:30 pm-3:00 pm	Session 1F. MTH: Brain	Session 2F. MIM: Fast cardiac imaging: methods and applications	Session 3F. MEL: Elastography in Anisotropic Tissue	Session 4F. MPA: Molecular Imaging and Photoacoustic Contrast Agents	Session 5F. Optimization of Quality Factor of Acoustic Resonators	Session 6F. NDE and Industrial Applications	Session 7F. Ultrasound Electronics and Systems
3:00 pm-4:00 pm	Poster Session and Refreshments (Exhibit Hall and Bird Cage Walk)						
4:00 pm-5:30 pm	Session 1G. MTH: Blood-Brain-Barrier	Session 2G. MEL: Carotid Elastography	Session 3G. MTC: <i>In vivo</i> soft tissue characterization	Session 4G. MCA: New US contrast agents for imaging and therapy	Session 5G. PGP - General Physical Acoustics	Session 6G. Signal Processing	Session 7G. Devices for Therapeutic Ultrasound
6:30 pm-9:30 pm	Banquet (Regency Ballroom)						

Condensed Program: Saturday, September 9, 2017							
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room	Empire Room
8:00 am-9:30 am	Session 1H. MBE: Cell Dynamics, Microbubbles, and Sonoporation	Session 2H. MTC: Hard and ex vivo human tissue characterization	Session 3H. MIM: Super-resolution and contrast imaging	Session 4H. MBF: Methods in Flow Studies: Phantoms and Algorithms	Session 5H. Flow Measurement and Wave Propagation	Session 6H. PPN - Phononics	Session 7H. Microacoustic Device Design
9:30 am-10:30 am	Poster Session and Refreshments (Exhibit Hall and Bird Cage Walk)						
10:30 am-12:00 pm	Session 1I. MTH: Therapeutic Ultrasound Applications	Session 2I. MIM: Machine learning for image reconstruction and interpretation	Session 3I. MCA: Contrast imaging: beamforming and signal processing	Session 4I. MBF: Vector Flow Imaging: Applications and Methods	Session 5I. MEL: Cardiac Strain Imaging	Session 6I. Advanced Transducer Materials and Designs	Session 7I. PTF - Thin Films
12:00 pm-1:30 pm	Lunch Break and Women in Engineering Luncheon (Congressional Room)						
1:30 pm-3:00 pm	Session 1J. MBE: Neuromodulation and Cell Stimulation	Session 2J. MIM: Improving image quality and analysis	Session 3J. MCA: Contrast agents and therapy assessment	Session 4J. MBB: Volumetric and Fourier domain approaches	Session 5J. MEL: Vascular Elastography	Session 6J. Ultrasound Imaging Devices II	Session 7J. Microacoustic Sensor and Lamb Wave Devices
3:00 pm-4:00 pm	Poster Session and Refreshments (Exhibit Hall and Bird Cage Walk)						
4:00 pm-5:30 pm	Session 1K. MTH: Ultrasound Mediated Delivery	Session 2K. MEL: Elastography in Clinical Application	Session 3K. MCA: Microbubble localization microscopy 2	Session 4K. MSP: Optimizing Imaging Performance	Session 5K. MIM: Medical Imaging	Session 6K. Novel Transducers and Transducer Applications	Session 7K. PUM - Ultrasonic Motors and High Intensity Applications

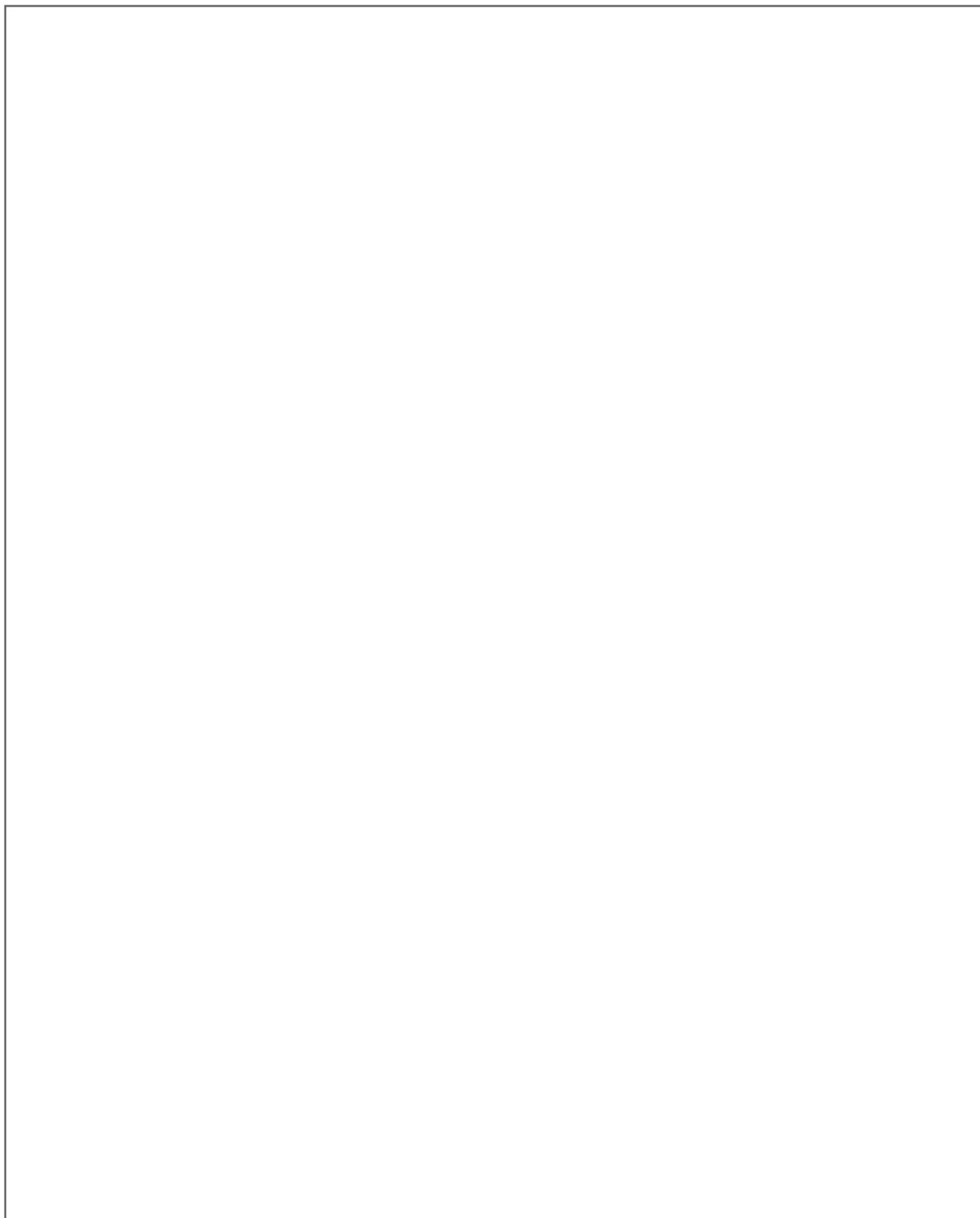
OMNI SHOREHAM HOTEL FLOOR PLANS



Shoreham Lower Level



NOTES

A large, empty rectangular box with a thin black border, intended for handwritten notes. It occupies the majority of the page area below the 'NOTES' header.

STUDENT PAPER COMPETITION

Thursday, Friday, and Saturday –
9:30 am – 4:00 pm

Posters of Student Paper Competition

Bird Cage Walk

Session PA. Student Poster Competition	PA-4 Full 4D Functional Ultrasound Imaging in Rodents Using a Matrix Array Claire RABUT ¹ , Victor Finel ¹ , Maléda Corraie ¹ , Mathieu Pernot ¹ , Thomas Defloux ¹ , Mickaël Tanter ¹ ¹ INSERM U979, PARIS, France	PA-8 Directivity of a Planar Fabry-Perot Optical Ultrasound Sensor Daany Ramaswamy ¹ , James Guggenheim ¹ , Paul Beard ¹ , Benjamin Cox ¹ , Bradley Treeby ¹ ¹ Medical Physics and Biomedical Engineering, University College London, United Kingdom	PA-12 Variable-Focus Liquid Crystal Lens Using Ultrasound Vibration Yuki SHIMIZU ¹ , Daisuke Koyama ¹ , Akira Emoto ¹ , Kentaro Nakamura ² , Mami Matsukawa ¹ ¹ Faculty of Science and Engineering, Doshisha University, Kyoto, Japan, ² Laboratory for Future Interdisciplinary Research of Science and Technology, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan	PA-17 a Front-End ASIC for Miniature 3-D Ultrasound Probes with In-Probe Receive Digitization Chao Chen ¹ , Zhao Chen ¹ , Deep Bera ² , Emile Nothout ³ , Zu-yao Chang ³ , Hendrik Vos ^{2,3} , Johan Bosch ² , Martin Verweij ^{2,3} , Nico de Jong ^{2,3} , Michiel Pertijs ¹ ¹ Electronic Instrumentation Lab., Delft University of Technology, Delft, Netherlands, ² Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ³ Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands
PA-1 3D Rendering of Electromechanical Wave Imaging for the Characterization and Optimization of Biventricular Pacing Conditions in Heart Failure Patients Undergoing Cardiac Resynchronization Therapy Lea Melki ¹ , Ethan Bunting ¹ , Daniel Wang ² , Pierre Naulau ¹ , Elisa Konofagou ^{1,3} ¹ Biomedical Engineering, Columbia University, New York, NY, USA, ² Medicine - Division of Cardiology, Columbia University, New York, NY, USA, ³ Radiology, Columbia University, New York, NY, USA	PA-5 3D Functional Ultrasound Imaging of the Visual System in the Pigeon Brain Richard Rau ¹ , Wolfgang Scheffer ¹ , Markus Belau ¹ , Pieter Knurzinga ¹ , Nico de Jong ^{2,3} , Johan G. Bosch ¹ , Georg Maret ¹ ¹ University of Konstanz, Germany, ² Thorax Center, Erasmus MC, Rotterdam, Netherlands, ³ Faculty of Applied Sciences, Delft University of Technology, Delft, Netherlands	PA-9 Ultrasound Flow Mapping of 3D Turbulent Liquid Metal Flows Norman Thiene ¹ , Karl Buchner ² , Richard Naber ¹ , Lars Büttner ¹ , Olaf Patzold ² , Jürgen Czarske ¹ ¹ Laboratory for Measurement and Sensor System Techniques, TU Dresden, Germany, ² TU Freiberg, Germany	PA-14 Piston Mode Operation of SAW Resonators Using Coupling Between Multiple SAW Modes Beiteng Zhang ^{1,2} , Tao Han ¹ , Gongbin Tang ^{1,2} , Xinyi Li ^{1,2} , Yulin Huang ^{2,3} , Tatsuya Omori ² , Ken-ya Hashimoto ² ¹ School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, China, People's Republic of, ² Graduate School of Engineering, Chiba University, Japan, ³ School of Electronic Science and Technology of China, China, People's Republic of	PA-18 a Front-End Integrated Circuit for a 2D Capacitive Micromachined Ultrasound Transducer (CMUT) Array for a Noninvasive Neural Interface To the Retina Chunhyun Seok ¹ , Xun Wu ¹ , F. Yalcin Yamaner ¹ , Omer Oralkan ¹ ¹ Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA
PA-2 Multispectral Ultrafast Ultrasound Imaging: a Versatile Tool Probing Dynamic Phase-Change Contrast Agents Heechul Yoon ¹ , Stanislav Emelianov ^{1,2} ¹ School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA, ² Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA	PA-6 Volumetric Imaging of Fast Mechanical Waves in the Heart Using a Clinical Ultrasound System: a Feasibility Study Pedro Santos ^{1,2} , Lasse Lovstakken ^{2,3} , Eigil Samset ^{2,4} , Jan Dhooge ¹ ¹ Department of Cardiovascular Sciences, KU Leuven, Belgium, ² GE Vingmed Ultrasound, GE Healthcare, Norway, ³ Department of Circulation and Medical Imaging, NTNU, Norway, ⁴ Center for Cardiological Innovation, Norway	PA-10 Design of Multi-Frequency Acoustic Kinoforms Michael Brown ¹ , Ben Cox ¹ , Bradley Treeby ¹ ¹ University College London, London, United Kingdom	PA-15 Aln/ZnO Inbo ₃ Packageless Structure As a Low-Profile Sensor for On-Body Applications Cécile FLOER ¹ , Mohamad Moutaouekkil ¹ , Florian Bartoli ^{1,2} , Harshad Mishra ¹ , Sami Hage-Ali ¹ , Stefan Me Murty ¹ , Philippe Piguet ¹ , Thierry Aubert ² , Olivier Bou Matar ³ , Abdelkrim Tabti ¹ , Omar Elmazria ¹ ¹ Institut Jean Lamour UMR 7198, Université de Lorraine - CNRS, Nancy, France, ² LMOPS EA 4423, CentraleSupélec - Université de Lorraine, Metz, France, ³ LIA LEMAC/LICS - IEMN UMR CNRS 8520, ECLILLE - USTL, PRES Université Lille Nord de France, Villeneuve d'Ascq, France	
PA-3 in Vivo Photoacoustic Detection of Lymph Node Metastasis using Glycol-Chitosan-Coated Gold Nanoparticles Diego Dumani ^{1,2} , In-Cheol Sun ^{1,2} , Stanislav Emelianov ^{1,2} ¹ Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA, ² School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA	PA-7 Prevent Lithium Dendrite Formation in Rechargeable Batteries Through Surface Acoustic Waves Ann Huang ¹ , James Friend ¹ ¹ Center for Medical Devices and Instrumentation, University of California, San Diego, La Jolla, CA, USA	PA-11 High electromechanical coefficient $k^2=19\%$ thick ScAlN piezoelectric films for ultrasonic transducer in low frequency of 80 MHz Ko-hei Sano ¹ , Rei Karasawa ¹ , Takahiko Yanagisani ^{1,2} ¹ Waseda University, Japan, ² JST-PRESTO, Japan	PA-16 An Optically Transparent Air-Coupled Capacitive Micromachined Ultrasound Transducer (CMUT) Fabricated Using Adhesive Bonding Xiao Zhang ¹ , Feysel Y. Yamaner ¹ , Oluwafemi Adelegan ¹ , Omer Oralkan ¹ ¹ Electrical and Computer Engineering, North Carolina State University, Raleigh, North Carolina, USA	

NOTES

10:30 am – 12:00 pm				Oral – Thursday, September 7, 2017			
Session 1A. MEL: Cardiac Elasticity Imaging	Session 2A. MBB: Coherence and Adaptive Beamforming	Session 3A. MTH: Histotripsy, Lithotripsy, Thrombotripsy	Session 4A. MBF: 3D Flow Imaging	Session 5A. Transducers	Session 6A. PNL - Nonlinear Acoustics	Session 7A. Ultrasound Imaging Devices I	
Chair: Emad Ebbini Univ. of Minnesota	Chair: Hideyuki Hasegawa University of Toyama	Chair: Zhen Xu University of Michigan	Chair: Stefano Ricci Florence University	Chair: Mario Kupnik Technische Universität Darmstadt	Chair: Dave Feld Broadcom Ltd	Chair: Xiaoning Jiang North Carolina State University	
Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room	Empire Room	
10:30 am	2A-1 Enhanced Ultrasound Harmonic Imaging Using the Filtered-Delay Multiply and Sum Beamformer Giulia Matrone ¹ , Alessandro Ranalli ² , Piero Tortoli ² , Giovanni Magenes ¹ ¹ Department of Electrical, Computer and Biomedical Engineering, University of Pavia, Pavia, Italy, ² Department of Information Engineering, University of Florence, Firenze, Italy	3A-1 Rapid Liquefaction of Blood Clots Using Histotripsy in an in Vivo Porcine Intracerebral Hemorrhage (ICH) Model Jonathan Sukovich ¹ , Aditya Pandey ² , Tyler Gerhardson ¹ , Timothy Hall ¹ , Charles Cain ¹ , Zhen Xu ¹ ¹ Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA, ² Neurosurgery, University of Michigan, Ann Arbor, MI, USA	4A-1 In-Vivo 3D Cardiac Vector Flow Imaging – a Comparison Between Ultrasound and Phase-Contrast MRI Morten Wigen ¹ , Alfonso Rodriguez-Molares ¹ , Tore Bjåstad ¹ , Marius Eriksen ² , Knut Håkon Sørensen ² , Lasse Lovstakken ¹ ¹ Department of circulation and medical imaging, Norwegian University of Science and Technology, Norway, ² Department of Radiology and Nuclear Medicine, St. Olavs Hospital, Norway	5A-1 Transducers for Harsh Environments in Nuclear Applications Bernhard Tittmann ¹ ¹ Engineering Science and Mechanics, Penn State University, University Park, Pennsylvania, USA	6A-1 Through Transmission Measurement of the Nonlinear Viscoelastic Memory of Rocks by Co-Propagating Longitudinal Ultrasonic Pulses Xuan Feng ¹ , Michael Fehler ² , Stephen Brown ² , Daniel Burns ² , Thomas Szabo ³ ¹ College of Geo-Exploration Science and Technology, Jilin University, Changchun, China, ² People's Republic of Earth Resources Laboratory, Massachusetts Institute of Technology, Cambridge, MA, USA, ³ Biomedical Engineering, Boston University, Boston, MA, USA	7A-1 a Magnetic Resonance Compatible E4D Ultrasound Probe for Motion Management of Radiation Therapy Warren Lee ¹ , Heather Chan ¹ , Kwok Pong Chan ¹ , Timothy Fiorillo ¹ , Eric Fiveland ¹ , Thomas Foo ¹ , David Mills ¹ , James Sabatini ¹ , David Shoudy ¹ , Scott Smith ¹ , Bryan Bednarz ² ¹ GE Global Research, Niskayuna, NY, USA, ² Department of Medical Physics, University of Wisconsin-Madison, WI, USA	
10:45 am	2A-2 Adaptive Beamforming Applied to Transverse Oscillation Hideyuki Hasegawa ¹ ¹ Graduate School of Science and Engineering, University of Toyama, Toyama, Japan	3A-2 Stress Waves in Model Kidney Stones Exposed To Burst Wave Lithotripsy Adam Maxwell ¹ , Brian MacConaghay ² , Michael Bailey ^{1,2} , Oleg Sapozhnikov ^{2,3} ¹ Department of Urology, University of Washington School of Medicine, Seattle, WA, USA, ² Center for Industrial and Medical Ultrasound, Applied Physics Laboratory, University of Washington, Seattle, WA, USA, ³ Department of Acoustics, Physics Faculty, Moscow State University, Moscow, Russian Federation	4A-2 Validation of High Frame Rate Echo-PIV With Optical PIV in a Realistic Left Ventricular Phantom Jason Voorneveld ¹ , Aswin Muralidharan ² , Timothy Hope ¹ , Hendrik Vos ¹ , Peter Krutzinger ¹ , Antonius F.W. van der Steen ¹ , Nico de Jong ¹ , Frank Gijzen ¹ , Sasa Kenjeres ² , Johan Bosch ¹ ¹ Thorax Center, Erasmus MC, Rotterdam, Netherlands, ² Transport Phenomena Section, Chemical Engineering, Delft University of Technology, Netherlands	6A-2 Characterizing Micro-Crack Distributions With Nonlinear Acoustic Surface and Wedge Waves Marck Rjelka ¹ , Bernd Koehler ¹ , Pavel Popyrev ² , Andreas Mayer ³ ¹ Fraunhofer IKTS, Dresden, Germany, ² Prokhorov General Physics Institute, Moscow, Russian Federation, ³ HS Offenburg - University of Applied Sciences, Gengenbach, Germany	7A-2 PIN-PMN-PT Single Crystal Composite and 3D Printed Interposer Backing for ASIC Integration of Large Aperture 2D Array Robert Wodnicki ¹ , Haochen Kang ¹ , Rui Zhang ² , Nestor Cabrera Munoz ¹ , Ruimin Chen ¹ , Chi Tat Chui ¹ , Qifa Zhou ^{1,3} , Douglas N. Stephens ² , Katherine W. Ferrara ² ¹ Biomedical Engineering, University of Southern California, Los Angeles, California, USA, ² Biomedical Engineering, University of California, Davis, Davis, California, USA, ³ Roski Eye Institute, Department of Ophthalmology, University of Southern California, Los Angeles, California, USA		

11:00 am	1A-3 Calibration of ARFI Displacements Using Diastolic Shear Wave Speeds for Estimating Systolic Elasticity Peter Hollender ¹ , Vaibhav Kakkad ² , Gregg Trahey ^{1,3} ¹ Biomedical Engineering, Duke University, Durham, NC, USA, ² Biomedical Engineering, Duke University, Durham, North Carolina, USA, ³ Radiology, Duke University Medical Center, Durham, North Carolina, USA	2A-3 Influence of the Delay-Multiply-And-Sum Beamformer on the Ultrasound Image Amplitude. Fabrice Prieur ¹ , Ole Marius Hoel Rindal ¹ , Sverre Holm ¹ , Andreas Austeng ¹ ¹ Department of Informatics, University of Oslo, Oslo, Norway	3A-3 Non-Invasive Liver Cancer Ablation Using Histotripsy in an In Vivo Murine Hepatocellular Carcinoma (HCC) Model Tejaswi Worlikar ¹ , Eli Vlasovlevich ¹ , Tyler Gerbrandson ¹ , Joan Greve ¹ , Shanshan Wan ¹ , Kimberly Ives ¹ , Timothy Hall ¹ , Theodore Welling ¹ , Zhen Xu ¹ ¹ University of Michigan, Ann Arbor, Michigan, USA	4A-3 3D Tracking Doppler for Quantitative Blood Flow Assessment of Coronary Arteries Stefano Fiorentini ¹ , Lars Saxhaug ¹ , Tore Bjåstad ¹ , Espen Holte ¹ , Hans Torp ¹ , Jørgen Avdal ¹ ¹ Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Norway	5A-2 High Temperature Ultrasonic Transducers by CaBi₂Ta₂O₇/Pb(Zr,Ti)O₃ Sol-Gel Composite Tomoya Yamamoto ¹ , Masaki Yugawa ¹ , Hajime Nagata ² , Makiko Kobayashi ¹ ¹ Kumamoto University, Japan, ² Toyo University of Science, Japan	6A-3 Nonlinear Effects in NEMS - Improving Frequency Stability Luis Guillermo Villanueva ¹ , Rassul Karabalin ² , Mathew Matheny ² , Michael Cross ² , Eyal Kenig ² , Ron Lifshitz ² , Michael Lee Roukes ² ¹ EPFL, Switzerland, ² Caltech, USA, ³ Tel Aviv University, Israel	7A-3 a Handheld 1D Transparent CMUT Array Probe for Photoacoustic Imaging Jean L. Sanders ¹ , Xiao Zhang ¹ , Xun Wu ¹ , Oluwafemi Joel Adelegun ¹ , F. Yalcin Yamaner ¹ , Michael Kudenov ¹ , Omer Oralkan ¹ ¹ Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA
11:15 am	1A-4 the Effect of Stretching on Transmural Shear Wave Anisotropy in Cardiac Shear Wave Elastography: an Ex Vivo and in Silico Study Annette Caenen ¹ , Abdullah Thabit ¹ , Mathieu Perno ² , Darva Sheherbakova ¹ , Luc Mertens ³ , Segers ¹ , Abigail Swillens ¹ , Patrick Segers ¹ ¹ IBiTech - bioMMeda, Ghent University, Ghent, Belgium, ² Langevin Institute, Ecole Supérieure de Physique et de Chimie Industrielles, Paris, France, ³ Hospital of Sick Children, University of Toronto, Toronto, Canada	2A-4 Phase Coherence Beamforming To Enhance Myocardial Speckle Tracking Performance Pedro Santos ¹ , Nadezhda Kortakina ¹ , Bidisha Chakraborty ¹ , João Pedroso ¹ , Vangush Komini ¹ , Jan Dhooze ¹ ¹ Department of Cardiovascular Sciences, KU Leuven, Belgium	3A-4 Evaluation of a New Non-Invasive Ultrasonic Device for Venous Recanalization: Assessment of Feasibility and Safety of Thrombotripsy At 2.25 Mhz in an In Vitro Model of Recent Venous Thrombosis Guillaume Goudot ¹ , Bastien Amal ¹ , Tristan Miralet ¹ , Catherine Boisson-Vidal ¹ , Bernard Le Bonniec ¹ , Mickael Tanier ¹ , Emmanuel Messas ² , Mathieu Perno ¹ ¹ Institut Langevin, INSERM U979, Paris, France, ² PARCC, INSERM U970, Paris, France, ³ UMRS 1140, INSERM, Paris, France	4A-4 Doppler Velocity Estimation in 3d Cardiac Ultrafast Ultrasound Imaging: an In Vitro Study Emilia Badesco ¹ , Lorena Petrusca ¹ , Damien Garcia ¹ , Denis Friboulet ¹ , Hervé Liebgott ¹ ¹ Univ-Lyon, INSA-Lyon, UCBL1, UJM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, Lyon, France	5A-3 Design of High-Intensity Ultrasound Reactor Örjan Johansson ¹ , Torbjörn Lofqvist ² , Taraka Rama Krishna Pamidi ¹ ¹ Department of Civil, Environmental and Natural Resources Engineering, Luleå tekniska universitet, Luleå, Sweden, ² Department of Computer Science, Electrical and Space Engineering, Luleå tekniska universitet, Luleå, Sweden		7A-4 Imaging Performance Analysis of a Foldable Large Aperture 2-D ICE Array Bernard Shieh ¹ , Karim Sabra ¹ , F. Levent Degertekin ¹ ¹ Georgia Institute of Technology, USA
11:30 am	1A-5 Cardiac Atrial Kick Shear Wave Elastography with Ultrafast Diverging Wave Imaging: an In Vivo Pilot Study Aaron Engel ¹ , Hao Hsu ² , Pengfei Song ³ , Gregory Bashford ¹ ¹ Department of Biological Systems Engineering, University of Nebraska-Lincoln, Lincoln, Nebraska, USA, ² Department of Pediatric Cardiology, Children's Hospital and Medical Center, Omaha, Nebraska, USA, ³ Department of Radiology, Mayo Clinic College of Medicine, Rochester, Minnesota, USA	2A-5 Coherence Beamforming and Its Applications to the Difficult-to-Image Patient Jeremy Dahl ¹ ¹ Radiology, Stanford University, Stanford, CA, USA	3A-5 Preclinical Safety and Effectiveness of a Longer Beam and Burst Duration for Ultrasonic Repositioning of Urinary Stones Barbrina Dummiré ¹ , Karmon M. Janssen ² , Timothy C. Brand ² , Bryan W. Cunitz ¹ , Yak-Nam Wang ¹ , Julianna C. Simon ¹ , Frank Starr ¹ , H.Denny Liggit ⁴ , Jeff Thiel ¹ , Jonathan D. Harper ⁴ , Mathew D. Sorensen ⁴ , Michael R. Bailey ^{4,5} ¹ Applied Physics Laboratory, University of Washington, USA, ² Department of Urology, Madigan Army Medical Center, USA, ³ Department of Acoustics, Pennsylvania State University, USA, ⁴ Department of Comparative Medicine, University of Washington, USA, ⁵ Department of Radiology, University of Washington, USA, ⁶ Department of Urology, University of Washington, USA, ⁷ Applied Physics Laboratory, University of Washington, Seattle, WA, USA	4A-5 3D Blood Vessel Mapping of Adult Zebrafish Using High Frequency Ultrasound Ultrafast Doppler Imaging Chao-Chuan Chang ¹ , Pei-Yu Chen ¹ , Chih-Chung Huang ¹ ¹ Department of Biomedical Engineering, National Cheng Kung University, Taiwan	5A-4 An Effect At the Source Creates Ringing in a Thick Plate David Greve ^{1,2} , Jaime Parra ¹ , Mario Berge ³ , Joel Harley ⁴ , Warren Junker ² , Irving Oppenheim ³ , Zitian Zhang ³ ¹ Electrical and Computer Engineering, Carnegie Mellon University, USA, ² DWGreve Consulting, Sedona, AZ, USA, ³ Department of Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA, USA, ⁴ Department of Electrical and Computer Engineering, University of Utah, Salt Lake City, UT, USA, ⁵ Consultant, Pittsburgh, PA, USA	6A-4 Force-Frequency Effects in Third Overtone Thickness Shear Quartz Resonators. Yook-Kong Yong ¹ , Jianfeng Chen ¹ ¹ Civil and Environmental Engineering, Rutgers University, Piscataway, NJ, USA	7A-5 Validation of Optimal 2D Sparse Arrays in Focused Mode: Phantom Experiments Emmanuel Roux ¹ , Emilia Badesco ² , Lorena Petrusca ² , François Varray ² , Alessandro Ramalli ¹ , Christian Cachard ² , Marc Robin ² , Hervé Liebgott ¹ , Piero Totoli ¹ ¹ Department of Information Engineering, Università Degli Studi di Firenze, Firenze, Italy, ² Univ-Lyon, INSA-Lyon, UCBL1, UJM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, F-69100, Villeurbanne, France

Oral – Thursday, September 7, 2017						
10:30 am – 12:00 pm						
11:45 am	1A-6 3D Myocardial Mechanical Wave Measurements Using High Frame Rate Ultrasound Imaging and Clutter Filter Wave Imaging: Towards a 3D Myocardial Elasticity Mapping Sebastien salles ¹ , Alfonso Rodriguez-Molares ¹ , Ashjorn Stoylen ¹ , Tore Bjaastad ² , Svein Arne Aase ² , Lasse Lovstakken ¹ , Hans Torp ¹ ¹ Norwegian University of Science and Technology, Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Norway, ² GE Vingmed Ultrasound, Norway	3A-6 Integrated Histotripsy and Bubble Coalescence Transducer for Rapid Tissue Ablation Aiwei Shi ¹ , Timothy Hall ¹ , Tejaswi Worlikar ¹ , Zhen Xu ¹ ¹ Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA	4A-6 Volumetric 3-D Vector Flow Measurements Using a 62x62 Row-Column Addressed Array Simon Holbek ^{1,2} , Matthias Bo Stuart ² , Hamed Bouzar ² , Jorgen Arendt Jensen ² ¹ BK Ultrasound, Herlev, Denmark, ² Technical University of Denmark, Lyngby, Denmark	5A-5 Flexible Ultrasonic Transducers by Automatic Spray Coating for Non-Destructive Testing Yuto Kiyota ¹ , Kei Nakatsuma ¹ , Makiko Kobayashi ¹ ¹ Kumamoto University, Japan	6A-5 Nonlinear Ultrasound Simulations Using a Time-Explicit Discontinuous Galerkin (DG) Method James Kelly ¹ , Xiaofeng Zhao ² , Drew Murray ³ , Simone Marras ⁴ , Robert McGough ⁵ ¹ Probability and Statistics, Michigan State University, USA, ² Electrical and Computer Engineering, Michigan State University, USA, ³ Computer Science and Engineering, Michigan State University, USA, ⁴ Geophysics, Stanford University, USA, ⁵ Electrical and Computer Engineering, Michigan State University, East Lansing, MI, USA	7A-6 Computer Aided Detection of Lumbar Spine Landmarks for Ultrasound Guided Lumbar Punctures and Epidurals Adam Dixon ¹ , Kevin Owen ¹ , Mohamed Tiourime ² , Will Mauldin ¹ ¹ Rivanna Medical, LLC, Charlottesville, VA, USA, ² Anesthesiology, University of Virginia Health System, Charlottesville, VA, USA

NOTES

THURSDAY ORAL

Oral – Thursday, September 7, 2017					
01:30 pm – 03:00 pm	Session 1B. Clinical: Clinical Ultrasound	Session 2B. MSP: Improving Resolution and Detection	Session 3B. MTH: Cavitation	Session 4B. MPA: Endoscopic / Intravascular Photoacoustic Imaging and New Approaches	Session 5B. Imaging and Photoacoustics
	Chair: Keith Wear U.S. Food and Drug Administration	Chair: Adrian Basarab University of Toulouse, Université Paul Sabatier	Chair: Brian Fowlkes Univ. of Michigan	Chair: Stas Emelianov Georgia Institute of Technology and Emory University School of Medicine	Chair: Jafar Sanite Illinois Institute of Technology
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room
1:30 pm	1B-1 Shear Wave Speed: Becoming a Clinically Valuable Biomarker Mark Palmeri ¹ ¹ Duke University, USA	2B-1 In-vitro Detection of Micro Calcifications Using Dual Band Ultrasound Eva Florenas ¹ , Stian Solberg ² , Ola Finneang Myhre ^{3,4} , Johannes Kvam ⁵ , Ole Martin Brende ⁶ , Bjorn Alle J. Angelsen ³ ¹ Department of Electronic Systems, Norwegian University of Science and Technology, Trondheim, Norway, ² SURF Technology AS, Trondheim, Norway, ³ Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, ⁴ Klinikk for bildediagnostikk, St. Olavs Hospital HF, Trondheim, Norway, ⁵ Norsvin SA, Hamar, Norway	3B-1 Pulsed Cavitation Ultrasound Softening: a New Non-invasive Therapeutic Approach of Calcified Valve Stenosis Olivier Villedmain ¹ , Justine Robin ¹ , Alain Bel ² , Wojciech Kwiecinski ¹ , Patrick Bruneval ² , Bastien Arnal ¹ , Mathieu Rémond ² , Mickael Tanter ¹ , Emmanuel Messas ² , Mathieu Pernot ¹ ¹ Institut Langevin, INSERM, ESPCI, Paris, France, ² APHP, Paris, France, ³ Cardiawave, Paris, France	4B-1 Characterization of Intestinal Strictures by Photoacoustics in Vivo: Endoscopic and Transcutaneous Approaches Guan Xu ¹ , Hao Lei ² , Yunhao Zhu ³ , Laura Johnson ¹ , Jonathan Rubin ¹ , Peter Higgins ⁴ , Jun Ni ⁵ , Xueding Wang ³ ¹ Radiology, University of Michigan, Ann Arbor, Michigan, USA, ² Mechanical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ³ Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ⁴ Internal Medicine, University of Michigan, Ann Arbor, Michigan, USA, ⁵ Mechanical Engineering, University of Michigan, Ann Arbor, Michigan, USA	5B-1 Introducing a New Method for Efficient Visualization of Complex Shape 3D Ultrasonic Phased-Array C-Scans Carmelo Mineo ¹ , Rahul Summan ¹ , Jonathan Riise ¹ , Charles MacLeod ¹ , Gareth Pierce ¹ ¹ Department of Electronic & Electrical Engineering, University of Strathclyde, Glasgow, Scotland, United Kingdom
	Empire Room	Hampton Room	Hampton Room	Hampton Room	Hampton Room
	7B-1 High-Frequency Arrays and Applications Jeremy Brown ^{1,2} ¹ Biomedical and Electrical Engineering, Dalhousie University, Halifax, Nova Scotia, Canada, ² Surgery, Nova Scotia Health Authority, Halifax, Nova Scotia, Canada	6B-1 Dependence of the Different Elastic Constants of Scale Films on Sc Content: a Brillouin Scattering Study With Polarization Analysis Giovanni Carloti ¹ , Jyothi Sadhu ² , Fabien Dumont ² ¹ Dept Physics and Geology, University of Perugia, Perugia, Italy, ² QORVO, Apopka, FL, USA	6B-2 Investigation of 20% Scandium-doped Aluminum Nitride Films for MEMS Laterally Vibrating Resonators Luca Colombo ¹ , Abhay Kochhar ¹ , Changting Xu ¹ , Gianluca Piazza ¹ , Sergey Mishkin ² , Yury Osinsky ² ¹ EECE, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA, ² Advanced Modular Systems, Inc., Goleta, California, USA	6B-2 Investigation of 20% Scandium-doped Aluminum Nitride Films for MEMS Laterally Vibrating Resonators Luca Colombo ¹ , Abhay Kochhar ¹ , Changting Xu ¹ , Gianluca Piazza ¹ , Sergey Mishkin ² , Yury Osinsky ² ¹ EECE, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA, ² Advanced Modular Systems, Inc., Goleta, California, USA	6B-2 Investigation of 20% Scandium-doped Aluminum Nitride Films for MEMS Laterally Vibrating Resonators Luca Colombo ¹ , Abhay Kochhar ¹ , Changting Xu ¹ , Gianluca Piazza ¹ , Sergey Mishkin ² , Yury Osinsky ² ¹ EECE, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA, ² Advanced Modular Systems, Inc., Goleta, California, USA
1:45 pm	1B-2 Frontiers in Elastography Including Ultrasound and Other Modalities Brian Garra ¹ ¹ Division of Imaging and Applied Mathematics/OSEL, Food and Drug Administration, Silver Spring, Maryland, USA	2B-2 Point Scatterer Enhancement in Ultrasound by Wavelet Coefficient Shrinkage Stine M. Hverven ¹ , Ole Martinus Hoel Rindal ¹ , Alan J. Hunter ² , Andreas Austeng ¹ ¹ Department of Informatics, University of Oslo, Oslo, Norway, ² University of Bath, Bath, United Kingdom	3B-2 Acoustic Cavitation Emission Feedback to Monitor Tissue Fractionation During Histotripsy Therapy Jonathan Macoskey ¹ , Jonathan Sukovich ¹ , Timothy Hall ¹ , Charles Cap ¹ , Zhen Xu ¹ , ¹ Biomedical Engineering, University of Michigan, USA	4B-2 Determining the Laser Damage Threshold of Tissues for the Design of a Clinical IVP Imaging Protocol. Timothy Sowers ^{1,2} , Andrei Kapiouk ³ , Don Vandelan ⁴ , Giji Joseph ⁴ , Eleanor Donnelly ⁵ , Robert Taylor ⁴ , Stanislav Emelianov ^{3,5} ¹ Parker H. Petit Institute for Biomedical Engineering and Bioscience, Georgia Institute of Technology, Atlanta, GA, USA, ² George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, USA, ³ School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA, ⁴ Division of Cardiology, Department of Medicine, Emory University, Atlanta, GA, USA, ⁵ Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA, USA	5B-2 NDE Application of Air-Coupled Ultrasonic Array System and F-K Domain Analysis for Delamination-Like Defect Detection in Bridge Deck Hajin Choi ¹ , Sadegh Shams ¹ , Michael Grissom ¹ , Hoda Azari ¹ , FAST NDE Laboratory, Federal Highway Administration, McLean, VA, USA

2:00 pm	1B-3 High Intensity Therapeutic Ultrasound in the Brain Jeff Elias ¹ ¹ Neurological Surgery, University of Virginia, Charlottesville, Virginia, USA	2B-3 Maximum Likelihood Estimation of Scattering Strength for High Range Resolution Ultrasound Imaging Hideyuki Hasegawa ¹ , Michiya Mozumi ¹ ¹ University of Toyama, Toyama, Japan	3B-3 Estimation of Size Distribution for Cavitation Bubbles Combining Time Intensity Curve and Bubble Dissolution Kinetics in Tissue Shanshan Xu ¹ , Runna Liu ¹ , Shukuan Lu ¹ , Supin Wang ¹ , Mingxi Wan ¹ ¹ Department of Biomedical Engineering, Xi'an Jiaotong University, China, People's Republic of	4B-3 Characterization of Human Carotid Plaques Using Multi-Wavelength Photoacoustic Imaging Mustafa Umit Arabul ¹ , Maarten Heres ¹ , Marcel Rutten ¹ , Marc van Sumbek ² , Frans van de Vosse ³ , Richard Lopata ⁴ ¹ Biomedical Engineering, Eindhoven University of Technology, Netherlands, ² Vascular Surgery, Catharina Hospital Eindhoven, Netherlands	5B-3 Automatic Segmentation and Object Classification with Neural Network for an Airborne Ultrasound Imaging System Wei Yap Tan ¹ , Grisechan Erbacher ¹ , Till Steiner ² , Nicole V. Rutter ¹ ¹ Karlsruhe Institute of Technology, Germany, ² Pepperl+Fuchs GmbH, Germany	6B-3 Which is the Best Thin Film Piezoelectric Material? Paul Muralt ¹ ¹ Electroceramic Thin Films Group, EPFL, Lausanne, Switzerland	7B-2 High Frequency Row Column Addressed Matrix Array for Volumetric Ultrafast Ultrasound Imaging Guillaume Ferin ¹ , Martin Flesch ^{1,2} , Thomas Defieux ² , Claire Banigues ¹ , Marie-Coline Dumoux ¹ , Tony Mateo ¹ , Agnes Lejeune ¹ , Bogdan Rosinski ¹ , Mickael Tanter ² , Mathieu Pernot ² , an Nguyen-Dinh ¹ ¹ Advanced Research Dpt., VERMON, Tours, France, ² Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR7587, INSERM U979, Paris VII, France
2:15 pm	2B-4 Velocity Resolution Improvement for High Temporal Resolution Ultrasonic Transducer Thuy Thu Nguyen ¹ , Andreas W. Espinoza ² , Stefan Hyler ² , Espen W. Remme ² , Jan Dhooze ³ , Lars Hoff ¹ ¹ University College of Southeast Norway, Norway, ² Oslo University Hospital, Rikshospitalet, Norway, ³ Catholic University of Leuven, Belgium	3B-4 Laser-Generated Focused Ultrasound for Micro-cavitation and its Application to High-Precision Cavitation Treatment Taechwa Lee ¹ , Wei Luo ² , Qiaochu Li ³ , Hakkan Demirci ⁴ , Jay Guo ¹ ¹ Mechanical Engineering, University of Michigan, Michigan, USA, ² School of Optical and Electrical Information, Huazhong University of Science and Technology, China, People's Republic of, ³ Electrical Engineering and Computer science, University of Michigan, Michigan, USA, ⁴ Kellogg Eye Center, University of Michigan, Michigan, USA	4B-4 Real-Time Recording of Membrane Variation During Seizure Using Transcranial Photoacoustic Voltage-Sensitive Dye Imaging Jeeun Kang ¹ , Shilpa Kadam ² , Haichong Zhang ³ , Heather Valentine ² , Julie Fedorko ² , Dean Wong ² , Enad Bector ^{1,2} ¹ Johns Hopkins University, USA, ² Johns Hopkins University School of Medicine, USA	5B-4 Isolation and Direct Imaging of Polycrystalline Backscatter Waves James Blackshire ¹ ¹ AFRL/RXCA, Air Force Research Laboratory, WPAFB, Ohio, USA	6B-4 Characterization of Graphene Electrodes as Piezoresistive SAW Transducers Benjamin Davaji ¹ , Alexander Ruyack ¹ , Amit Lal ¹ ¹ SonicMEMS, Cornell University, Ithaca, NY, USA	7B-3 Development of Multi-Frequency Intravascular Ultrasound Transducers for Tissue Harmonic Imaging Junsu Lee ¹ , Eun-Ji Shin ¹ , Jin Ho Chang ^{2,3} ¹ Electronic Engineering, Sogang University, Korea, Republic of, ² Biomedical Engineering, Sogang University, Korea, Republic of, ³ Sogang Institute of Advanced Technology, Sogang University, Korea, Republic of	
2:30 pm	1B-4 Frontiers in Image-Guided Intervention Including Ultrasound and Other Modalities Keyvan Farahani ¹ ¹ National Cancer Institute, Rockville, Maryland, USA	2B-5 Enhanced Axial and Lateral Resolution Using Stabilized Pulses Shulie Chen ¹ , Kevin Parker ² ¹ Electrical & Computer Engineering, University of Rochester, Rochester, NY, USA, ² Electrical & Computer Engineering, University of Rochester, Rochester, New York, USA	3B-5 Prediction of Thermal Coagulation by Short-Pulse Pre-Exposure for Cavitation-Enhanced Ultrasonic Heating Ryosuke Iwasaki ¹ , Ryo Takagi ² , Shin Yoshizawa ² , Shin-ichiro Umemura ¹ ¹ Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan, ² Graduate School of Engineering, Tohoku University, Sendai, Japan	4B-5 Near-Infrared Photoacoustic Imaging of Atrial RF Ablation Sophiane Iskander-Rizk ¹ , Pieter Kruijzinga ^{1,2} , Antonius F.W. Van der Steen ^{1,3} , Gijs Van Soest ¹ ¹ Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ² Delft University of Technology, Netherlands, ³ Shenzhen Institutes of Advanced Technology, China, People's Republic of	5B-5 Feasibility Study of Photo Thermal Acoustic Imaging of Buried Nanowires in Gate-All-Around (GAA) Nanowire FETs Paul van Neek ¹ , Daniele Piras ² , Wouter Koek ³ , Erwin van Zwel ³ , Hamed Sadeghian Mamani ² ¹ Acoustics and Sonar, TNO, the Hague, Netherlands, ² Optomechanics, TNO, Delft, Netherlands, ³ Optics, TNO, Delft, Netherlands	7B-4 Thin Film PZT-Based PMUT Arrays for Microultrasound Capsule Endoscopy Yongqiang Qiu ¹ , Christopher Cheng ² , Holly Lay ² , Aaron Welsh ² , Margeaux Wallace ² , Susan Troller-McKinstry ² , Sandy Cochran ¹ ¹ University of Glasgow, United Kingdom, ² Pennsylvania State University, USA	

Oral – Thursday, September 7, 2017					
01:30 pm – 03:00 pm	2:45 pm	2B-6 B-Mode Subwavelength Vibration Imaging	3B-6 Image-guided Ultrasound/Microbubble-mediated Drug Delivery Platform with Passive Cavitation Mapping	4B-6 Using Ultrasound and Photoacoustics To Monitor in Situ Forming Implant Structure and Drug Release	5B-6 Laser Generated Ultrasound Sources using Carbon-Polymer Nanocomposites for High Frequency Metrology
	Tzu-Min Yeh ¹ , Meng-Lin Li ¹ ¹ National Tsing Hua University, Taiwan	Tachwa Lee ¹ , Dongwoon Hyun ¹ , Sayan M. Chowdhury ¹ , Sunitha Bachawal ¹ , Carl D. Herckhoff ¹ , Jeremy Dahl ¹ , Juergen K. Willmann ¹ ¹ Radiology, Stanford University, Stanford, California, USA	Elizabeth Bernull ¹ , Eno Hysi ¹ , Christopher Hernandez ² , Agata Exner ² , Michael Kolios ¹ ¹ Department of Medical Physics, Ryerson University, Toronto, Ontario, Canada, ² Department of Radiology, Case Western University, Cleveland, Ohio, USA	Srinath Rajagopal ^{1,2} , Ben Cox ¹ , Bradley Treeby ¹ , Toby Sansbury ³ ¹ Department of Medical Physics and Biomedical Engineering, University College London, London, United Kingdom, ² Ultrasound and Underwater Acoustics, National Physical Laboratory, Teddington, United Kingdom, ³ KAUST Catalysis Center and Division of Physical Sciences and Engineering, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia	7B-5 an Endoscope for Micro-Ultrasound and Photoacoustic Imaging of Barrett's Esophagus Aaron Royes ¹ , Jungik Jay Son ¹ , Jianhua Yin ¹ , Brian C. Wilson ^{2,3} , Christine Demore ^{1,3} , F. Stuart Foster ^{1,3} ¹ Sunnybrook Research Institute, Toronto, Ontario, Canada, ² Princess Margaret Cancer Centre, Toronto, Ontario, Canada, ³ Medical Biophysics, University of Toronto, Toronto, Ontario, Canada
					6B-5 Comparison Between Ir, Ir _{0.8} Rh _{0.2} and Ir _{0.7} Rh _{0.3} Thin Films As Electrodes for Surface Acoustic Waves Applications Above 800°C in Air Atmosphere Amine Taguet ^{1,2} , Thierry Aubert ^{1,2} , Omar Elmazria ³ , Florian Baroli ¹ , Marc Lomello ² , Michel Hehn ¹ , Stéphane Mangin ³ , Yong Xu ³ ¹ LMOPS, CentraleSupélec - Université de Lorraine, 57070 Metz, France, ² SYMME, Université Savoie Mont Blanc, 74940 Amey-le-Vieux, France, ³ Institut Jean Lamour, UMR 7198 Université de Lorraine-CNRS, 54506 Vandoeuvre-lès-Nancy, France, France

NOTES

52

Oral – Thursday, September 7, 2017								
04:00 pm – 05:30 pm	04:30 pm	1C-3 a HIFU Excitation Scheme to Reduce Switching-Induced Grating Lobes and Hard Tissue Interface Heating Chris Adams ¹ , David Cowell ¹ , Luzhen Nie ¹ , James McLaughlin ¹ , Thomas Carpenter ¹ , Steven Freear ¹ ¹ University of Leeds, United Kingdom	2C-3 Deep Neural Networks for Ultrasound Beamforming Adam Luchies ¹ , Brett Byram ¹ ¹ Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, USA	3C-3 Localisation of Multiple Non-Isolated Microbubbles With Frequency Decomposition in Super-Resolution Imaging Sevan Harput ¹ , Kirsten Christensen-Jeffries ² , Jemma Brown ² , Robert J. Eckersley ² , Christopher Dunsby ³ , Meng-Xing Tang ¹ ¹ Department of Bioengineering, Imperial College London, London, United Kingdom ² Biomedical Engineering Department, King's College London, London, United Kingdom ³ Department of Physics and Centre for Pathology, Imperial College London, United Kingdom	4C-3 Staging Hepatic Steatosis in Nonalcoholic Fatty Liver Disease by Quantitative Conventional Ultrasound Imaging, Validated With Histopathology Gert Weijers ¹ , Isabelle Munsterma ² , Johan Thijssen ¹ , Aisha Meel - van den Abeelen ¹ , Joost Drenth ² , Eric Tjwa ² , Chris de Korte ¹ ¹ Medical UltraSound Imaging Center (MUSIC), department of Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Netherlands ² Gastroenterology and Hepatology, Radboud University Medical Center, Nijmegen, Netherlands	5C-3 Finite-Element Modelling of Elastic Wave Propagation and Scattering Within Heterogeneous Media Istvan Veres ¹ , Martin Ryzyl ¹ , Tomáš Grabec ² ¹ RECENDT, Linz, Austria ² Laboratory of Ultrasonic Methods, IT CAS, Prag, Czech Republic	6C-3 High-Performance Lithium Niobate Quasi-Collinear Acousto-Optic Filter Vladimir Molchanov ¹ , Alexander Chizhikov ¹ , Sergey Chizhikov ¹ , Natalya Naumenko ¹ , Konstantin Yushkov ¹ ¹ Acousto-Optical Research Center, Natl. Univ. Sci. Technol. MISIS, Moscow, Russian Federation	7C-3 Monolithic Aluminum Nitride MemS-Cmos Resonant Transformer for Wake-Up Receivers Jeronimo Segovia Fernandez ¹ , James Do ² , Yuhao Liu ² , Julius M. Tsai ¹ , Hooman Rashidian ² , Xiaoguang Liu ² , David A. Horsley ¹ ¹ Mechanical and Aerospace Engineering, University of California, Davis, California, USA ² Electrical and Computer Engineering, University of California, Davis, CA, USA ³ Invensense Inc., San Jose, California, USA ⁴ Mechanical and Aerospace Engineering, University of California, Davis, Davis, CA, USA
	04:45 pm	1C-4 Transoesophageal HIFU for Cardiac Ablation : Experiments on Beating Hearts Paul Grellier ¹ , Bénédicte Ankou ¹ , Francis Bessiere ² , Ali Zargani ¹ , Fabrice Marquet ³ , Julie Magat ⁴ , Sandrine Melot-Dusseaux ⁴ , Romain Lacoste ⁴ , Bruno Queson ³ , Mathieu Pernot ³ , Stefan Catheline ¹ , Philippe Chevalier ² , Cyril Lafon ^{1,6} ¹ LabTau - INSERM U1032, France ² Hôpital Louis-Pradel, France ³ HU-LIRYC - CHU Bordeaux, France ⁴ Station de primatologie - CNRS- UPS846, France ⁵ Institut Langevin - Ondes et Images - ESPCI ParisTech, CNRS UMR 7587, France ⁶ University of Virginia, USA	2C-4 High-Resolution Passive Cavitation Mapping by Source Localization from Aperture-Domain Signals Taehwa Lee ¹ , Dongwoon Hyun ¹ , Sayan M. Chowdhury ¹ , Marko Jakovljevic ¹ , Juergen K. Willmann ¹ , Jeremy Dahl ¹ ¹ Radiology, Stanford University, Stanford, California, USA	3C-4 Determination of Adequate Measurement Times for Super-Resolution Characterization of Tumor Vascularization Stefanie Dencks ¹ , Tatjana Opacic ² , Marion Peppenbrock ¹ , Fabian Kessling ² , Georg Schmitz ¹ ¹ Institute for Medical Engineering, Ruhr-University Bochum, Bochum, Germany ² Institute of Experimental Molecular Imaging, University of Aachen (RWTH), Aachen, Germany	4C-4 In-Vivo Study of Quantitative Ultrasound Parameters in Fatty Rabbit Livers Trong Nguyen ¹ , Anthony Podkawa ¹ , Rita Miller ¹ , Minh Do ¹ , Michael Oelze ¹ ¹ Electrical and Computer Engineering, University of Illinois at Urbana Champaign, Urbana, Illinois, USA	5C-4 Ultrasonic Quantification of Fusion Zone in Resistance Spot Welds Jeong Na ¹ ¹ Advanced NDI, KBRWyle, Dayton, Ohio, USA	6C-4 Conventional and Micro-Focused Brillouin Light Scattering for the Elastic Characterization and the Acoustic Field Mapping in SAW and BAW Resonators Giovanni Carloti ¹ ¹ Dept Physics and Geology, University of Perugia, Perugia, Italy	7C-4 C-Axiszig-Zag Polarization Inverted Scaln Multilayer for FBAR Transformer Rectifying Antenna Rei Karasawa ¹ , Takahiko Yanagitani ^{1,2} ¹ Faculty of Science and Engineering, Waseda University, Tokyo, Japan ² JST PRESTO, Japan
	05:00 pm	1C-5 Real-time Control of Bulk Ultrasound Thermal Ablation Using Echo Decorrelation Imaging Feedback Mohamed A. Abbass ¹ , Allison-Joy Garbo ¹ , Neeraja Mahalingam ¹ , Jakob K. Killin ¹ , T. Douglas Mast ¹ ¹ Biomedical Engineering, University of Cincinnati, Cincinnati, Ohio, USA	2C-5 Contrast Ratio Dynamic Range: a New Beamformer Performance Metric Kazuyuki Del ¹ , Adam Luchies ¹ , Brett Byram ¹ ¹ Biomedical Engineering, Vanderbilt University, Nashville, Tennessee, USA	3C-5 Subwavelength Motion-Correction for Ultrafast Ultrasound Localization Microscopy Vincent Hingot ¹ , Claudia Errico ¹ , Mickael Tanter ¹ , Olivier Couture ¹ ¹ Institut Langevin (CNRS, ESPCI, INSERM), Paris, France	4C-5 Backscattered Power Anisotropy Throughout Non-Human Primate Pregnancy Quinton Guerrero ¹ , Ivan Rosado-Mendez ² , Andrew Santoso ¹ , Lindsey Drehtal ¹ , Helen Felovich ^{1,2} , Timothy Hall ¹ ¹ Medical Physics Department, University of Wisconsin Madison, Madison, WI, USA ² Maternal Fetal Medicine Department, Intermountain Healthcare, Provo, UT, USA	5C-5 Laser Ultrasonic Assessment of the Effects of Oxidation and Microcracking on the Elastic Moduli of Nuclear Graphites James Spicer ¹ , Fan Zeng ¹ , Nidia Gallego ² , Cristian Contescu ² ¹ The Johns Hopkins University, USA ² Oak Ridge National Laboratory, USA	6C-5 a High-Sensitivity and Wide Dynamic Range Acoustic Sensor Using Multiple Mzis Micro-Opto-Mechanical Technology Hang Gao ¹ , Chih-Hsien Huang ¹ , Veronique Rochus ¹ , Xavier Rottenberg ¹ ¹ LSI imec, Leuven, Belgium	7C-5 an Oven Controlled +/-1.6ppm stable 0.32mmx3 FBAR based Transformer coupled Colpitts Oscillator Jabcom Koo ^{1,2} , Kannan Sankaragomathi ¹ , Richard Ruby ¹ , Brian Otis ¹ ¹ Electrical Engineering, University of Washington, Seattle, WA, USA ² Intel Corporation, Hillsboro, OR, USA ³ Avago Technologies, San Jose, California, USA

THURSDAY ORAL

05:15 pm	1C-6 Development of a Toroidal High-Intensity Focused Ultrasound Transducer for the Treatment of Pancreatic Tumors. In Vivo Study of the Safety and Efficacy in a Porcine Model David McDaniel¹, Aurelien Dupre², Anthony Kocq¹, Jeremy Vincentot¹, Yao Cher², Stefan Langonne², Hannah Pflieger², Michel Rivoire² ¹LabTAU, INSERM, France, ²Centre Leon Berard, France	2C-6 the UltraSound ToolBox Alfonso Rodriguez-Molares¹, Ole Marius Hoel Rindal², Olivier Bernard³, Hervé Liebgott³, Andreas Austeng², Lasse Lovstakken¹ ¹Norwegian University of Science and Technology, Norway, ²University of Oslo, Norway, ³University of Lyon, France	3C-6 In Vivo Super-Resolution Imaging of Vasa Vasorum in Rabbit Atherosclerotic Plaque Model Using Deconvolution-Based Localization Technique Jaesok Yu^{1,2}, Linda Lavery², Kang Kim^{1,2} ¹Bioengineering, University of Pittsburgh, USA, ²Medicine & Heart and Vascular Institute, University of Pittsburgh, USA	4C-6 Ultrasonic Method for Monitoring Muscle Water Content Colin McLeish¹, Erich Everbach¹, Sergey Tsyryupa², Armen Sarvazyan² ¹Engineering, Swarthmore College, Swarthmore, PA, USA, ²Artann Labs, West Trenton, NJ, USA	5C-6 Characterization of Metallic Glasses using Ultrasound Broadband Spectroscopy Megha Agrawal¹, Ashwin Seshia¹ ¹Nanoscience Center, Dept of Engineering, University of Cambridge, United Kingdom	6C-6 Optical and Acoustic Study on Phase Transition of Nanodroplets: Acoustic Droplet Vaporization Versus Photoacoustic Cavitation Yi Feng¹, Dui Qin¹, Lei Zhang¹, Yujin Zong¹, Mingxi Wan¹ ¹Department of Biomedical Engineering, the Key Laboratory of Biomedical Information Engineering of Ministry of Education, Xi'an city, China, People's Republic of	7C-6 Manipulation of Carriers in Graphene Using an On-Chip Acoustic Wave Device Ji Liang¹, Xing Yang¹, Shijun Zheng¹, Hao Zhang¹, Mengjun Zhang¹, Daihua Zhang¹, Wei Pang¹ ¹Tianjin University, Tianjin, China, People's Republic of
----------	---	--	---	---	---	---	--

NOTES

THURSDAY POSTER

9:30 am – 4:00 pm

Poster --- Thursday, September 7, 2017

Exhibit Hall

Session P1-A1. MBB: Non linear and Coherence Imaging Chair: François Varray CREATIS	P1-A1-8 Extending the Convergence Limit of Nonlinear Speed of Sound Reconstructions Towards Common Ultrasonic Frequencies Andreas Ilrig ¹ , Georg Schmitz ¹ ¹ Chair for Medical Engineering, Ruhr-University Bochum, Bochum, Germany	P1-A2-6 High-Frame-Rate Imaging of a Carotid Bifurcation Using a Low-Complexity Velocity Estimation Approach Tommaso Di Lami ¹ , Carlos A. Villagómez Hoyos ¹ , Caroline Ewertsen ² , Michael Bachmann Nielsen ² , Jørgen A. Jensen ¹ ¹ Technical University of Denmark, Lyngby, Denmark, ² Department of Radiology, Copenhagen University Hospital, Copenhagen, Denmark	P1-A3-5 on the Fate of Mesh-Stabilized Lipid Nanobubbles After Destruction With Ultrasound Christopher Hernandez ¹ , Sahil Gulati ² , Gabriella Fioravanti ¹ , Phoebe Stewart ² , Agata A. Exner ² ¹ Department of Biomedical Engineering, Case Western Reserve University, USA, ² Department of Pharmacology and Cleveland Center for Membrane and Structural Bio, Case Western Reserve University, USA, ³ Department of Radiology, Case Western Reserve University, USA	P1-A4-4 Non-Invasive Carotid Artery Elastography Using Multi-Element Synthetic Aperture and Plane Wave Imaging: Phantom and in Vivo Evaluation Rohit Nayak ¹ , Giovanni Schiffrino ² , Marvin Doyley ¹ ¹ Department of Electrical and Computer Engineering, University of Rochester, Rochester, NY, USA, ² Department of Neurology, University of Rochester, Rochester, NY, USA
P1-A1-1 an Improved Spatio-Temporally Smoothed Coherence Factor Combined With Eigenspace-Based Minimum Variance Beamformer for Plane-Wave Imaging in Medical Ultrasound Xiang Wu ¹ , Xiao Zhang ¹ , Minhua Lu ² ¹ School of Biomedical Engineering, Shenzhen University, China, People's Republic of, ² School of Biomedical Engineering, Shenzhen University, Shenzhen, Guangdong, China, People's Republic of	P1-A1-9 Low-Complexity Compressive Beamforming for Portable Ultrasound Imaging Svetlana George ¹ , Ajay Anand ² , Jovan Mitrovic ¹ , Zeljko Ignjatovic ¹ ¹ Electrical and Computer Engineering, University of Rochester, Rochester, New York, USA, ² Carestream Health Inc., Rochester, New York, USA	P1-A2-7 Ultrafast Cardiac 2D Vector Flow Imaging Tong Yu ¹ , Oudom Somphone ² , Shiyang Wang ¹ , Sheng-Wen Huang ¹ , Francois Vignon ³ ¹ Philips Research North America, Cambridge, MA, USA, ² Philips Research North America, Andover, Massachusetts, USA	P1-A3-6 Destruction of Giant Cluster-Like Vesicles Assisted by Contrast Agent Under 2.8-MHz Ultrasound Irradiation Kenji Yoshida ¹ , Ryoike Yahagi ² , Yiting Zhang ² , Masahiko Ebata ² , Taro Toyota ³ , Tadashi Yamaguchi ¹ , Hideki Hayashi ¹ ¹ Center for Frontier Medical Engineering, Chiba University, Japan, ² Department of Medical System Engineering, Graduate School of Engineering, Chiba University, Japan, ³ Department of Basic Science, Graduate School of Arts and Sciences, the University of Tokyo, Japan	P1-A4-5 Normalization of Carotid Plaque based Strain Indices using Blood Pressure Measurements Tony Varghese ^{1,2} , Nirvedh Moshram ¹ , Carol Mitchell ¹ , Bruce Hernum ¹ , Stephanie Wilbrand ¹ , Daren Jackson ¹ , Robert Dempsey ³ ¹ Medical Physics, University of Wisconsin, Department of Medicine and Public Health, Madison, Wisconsin, USA, ² Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, Wisconsin, USA, ³ Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA, ⁴ Neurology, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA, ⁵ Neurological Surgery, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA
P1-A1-2 Theoretical Application of Short-Lag Spatial Coherence to Photoacoustic Imaging Michelle Graham ¹ , Muyinatu Lediju Bell ¹ ¹ Electrical and Computer Engineering, Johns Hopkins University, Baltimore, MD, USA	Session P1-A2. MBF: Multi-Directional and Multi-Plane Flow Imaging Chair: Mengxing Tang Imperial College London	P1-A2-8 High-Speed, High-Frequency, Vector-Flow Imaging of in Utero Mouse Embryos Jeffrey A. Ketterling ¹ , Orlando Aristizabal ¹ , Alfred C.H. Yu ¹ , Billy Y.S. Yu ¹ , Daniel H. Tumbull ² , Colin K.L. Phoon ⁴ , Ronald H. Silverman ⁵ ¹ Lizzi Center for Biomedical Engineering, Riverside Research, New York, NY, USA, ² Scribball Institute of Biomedical Research, New York, NY, USA, ³ Department of Radiology, New York University School of Medicine, New York, NY, USA, ⁴ Department of Electrical and Computer Engineering, University of Waterloo, Waterloo, Canada, ⁵ Division of Pediatric Cardiology, Hassenfeld Children's Hospital of New York at NYU Langone Medical Center, New York, NY, USA, ⁶ Department of Ophthalmology, Columbia University Medical Center, New York, NY, USA	P1-A3-7 High Resolution Ultrafast Imaging of Microbubble Destruction During Sonoporation Sara Keller ¹ , Michalakis Averkiou ¹ ¹ Bioengineering, University of Washington, Seattle, Washington, USA	P1-A4-6 Update on Carotid Plaque Instability Quantification Using Strain Indices From Multiple Regions of Interest in Carotid Plaque Nirvedh Moshram ^{1,2} , Carol Mitchell ¹ , Bruce Hernum ¹ , Stephanie Wilbrand ¹ , Daren Jackson ¹ , Robert Dempsey ³ , Tony Varghese ^{1,2} ¹ Department of Medical Physics, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA, ² Department of Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, Wisconsin, USA, ³ Department of Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA, ⁴ Neurology, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA, ⁵ Neurological Surgery, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA
P1-A1-3 a Computationally Efficient Non-Linear Beamformer Based on P th Root Signal Compression for Enhanced Ultrasound B-Mode Imaging Maxime Polichetti ¹ , François Varray ¹ , Giulia Marone ² , Alessandro Stuart Savio ¹ , Jean-Christophe Bena ¹ , Christian Cachard ¹ , Barbara Nicolas ¹ ¹ CREATIS, Univ Lyon, INSALyon, Univ Lyon 1, UJM-Saint-Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, Lyon, France, ² Dipartimento di Ingegneria Industriale e dell'Informazione, Università degli Studi di Pavia, Pavia, Italy, ³ Dipartimento di Ingegneria, Università degli Studi Roma Tre, Rome, Italy, ⁴ Université Lyon 1, Inserm U1032, LabTou, Université Claude Bernard Lyon 1, Lyon, France	P1-A2-1 Plane-Wave Based Vector Flow Imaging: Beamforming and Velocity Estimation Loads in Different Processing Scenarios Matteo Lenge ¹ , Alessandro Ramalli ¹ , Stefano Ricci ¹ , Piero Tortoli ¹ ¹ Department of Information Engineering, University of Florence, Firenze, Italy	Session P1-A3. MCA: Microbubbles and Therapy Chair: Nico de Jong Erasmus Medical Centre	P1-A3-8 Contrast-Enhanced Ultrasound Evaluation of Skeletal Muscle Perfusion in Response To Left Ventricular Assist Device (LVAD) Therapy Lauren Jablonowski ¹ , Maria Stanczak ¹ , Priscilla Machado ¹ , Kathleen Fitzgerald ² , Gordon Reeves ² , Flemming Fosberg ¹ ¹ Radiology, Thomas Jefferson University, Philadelphia, PA, USA, ² Cardiology, Thomas Jefferson University, Philadelphia, PA, USA	P1-A4-7 Assessment of Plaque Wave Velocity by Shear Wave Elastography Using a Combined Ex-Vivo and Phantom Setup David Larsson ^{1,2} , Elira Maksut ¹ , Matthew W Urban ³ , Matild Larsson ² ¹ KTH Royal Institute of Technology, Sweden, ² Karolinska Institutet, Sweden, ³ Mayo Clinic College of Medicine, USA

P1-A1-4 the Dark Region Artifact in Adaptive Ultrasound Beamforming Ole Marius Hoel Rindal¹, Alfonso Rodriguez-Molares², Andreas Austeng¹ ¹University of Oslo, Norway, ²Norwegian University of Science and Technology, Norway	P1-A2-2 Estimating 2D Flow Vectors in Ultrasound Plane-Wave Fourier Imaging Shang-Ching Lin Lin¹, Pai-Chi Li¹ ¹National Taiwan University, Taipei, Taiwan	P1-A3-1 Tumor Hypoxia Modulation Dynamics Using Intra-Tumoral, Intra-Pertoneal and Intra-Venous Oxygen Microbubbles Administrations – in Vivo Real-Time Measurements Via Spectroscopic Absorbance on a Rat Subcutaneous Fibrosarcoma Model Virginie Papadopoloul¹, Samantha M. Fix^{1,2}, Hunter Velde³, Sha Chung⁴, Mark A. Borden³, Paul A. Dayton¹ ¹UNC Chapel Hill, USA, ²Eshelman School of Pharmacy, UNC Chapel Hill, USA, ³Department of Mechanical Engineering, University of Colorado, USA, ⁴Department of Radiation Oncology, UNC Chapel Hill, USA	Session P1-A4. MEL: Cardiovascular Elastography Chair: Pengfei Song Mayo Clinic	P1-A4-8 Improved Ultrasound-Based Mechanical Characterization of Abdominal Aortic Aneurysms Niels Pettersen¹, Emiel van Disseldorp^{1,2}, Frans van de Vosse¹, Marc van Sambeek², Richard Lopata¹ ¹Cardiovascular Biomechanics, Eindhoven University of Technology, Eindhoven, Netherlands, ²Department of Surgery, Catharina Hospital Eindhoven, Eindhoven, Netherlands	P1-A4-9 Strain and Strain Rate Generated by Shear Wave Elastography in ex vivo Porcine Aortas Elira Maksut¹, David Larsson^{1,2}, Matthew W. Urban³, Kenneth Caidahl⁴, Matilda Larsson^{1,4} ¹Medical Engineering, KTH Royal Institute of Technology, Stockholm, Sweden, ²Clinical Sciences, Karolinska Institutet, Stockholm, Sweden, ³Radiology, Mayo Clinic, Rochester, MN, USA, ⁴Molecular Medicine and Surgery, Karolinska Institutet, Stockholm, Sweden	P1-A4-10 Mechanical Characterization of Vascular Tissue Using Ultrasound Joerik de Ruijter^{1,2}, Frans van de Vosse¹, Marc van Sambeek², Richard Lopata¹ ¹Eindhoven University of Technology, Netherlands, ²Catharina Hospital, Netherlands	P1-A4-11 Comparison of Different Motion Estimation Methods for Vessel Cross-Sectional Shear Wave Imaging Qiong He¹, Guoyang Li², Yanping Cao², Jianwen Luo¹ ¹Department of Biomedical Engineering, Tsinghua University, China, People's Republic of, ²Department of Engineering Mechanics, Tsinghua University, China, People's Republic of
		P1-A3-2 the Effect of Pulse Length on Sonoreperfusion Therapy Francois T.H. Yu¹, Gary Yu¹, Xucai Chen¹, Linda Lavery¹, Flordeliza S. Villanueva¹, John J. Paacella¹ ¹Center for Molecular Imaging and Therapeutics, University of Pittsburgh, USA	P1-A4-1 4D Strain Imaging Using Single and Dual Probe Acquisitions of a Patient Specific Carotid Bifurcation Phantom Stein Fekkes¹, Hendrik Hansen¹, Jan Menssen¹, Maartje Nillesen¹, Anne Saris¹, Chris de Korte^{1,2} ¹Medical Ultrasound Imaging Center (MUSIC), department of Radiology & Nuclear Medicine, Radboud university medical center, Netherlands, ²Physics of Fluids Group, University of Twente, Enschede, Netherlands				
			P1-A3-3 Feasibility Study of Dual-Frequency Chirp Excitation for Passive Cavitation Imaging Hsiang-Ching Lin¹, Chih-Kuang Yeh¹ ¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Taiwan	P1-A4-2 3D Geometry Assessment and Wall Stress Analysis of Carotid Arteries Using 2D US Segmentation During a Controlled Sweep Joerik de Ruijter^{1,2}, Koen Hobelma¹, Frans van de Vosse¹, Marc van Sambeek², Richard Lopata¹ ¹Eindhoven University of Technology, Netherlands, ²Catharina Hospital, Netherlands			
		P1-A3-4 Translating Microbubbles with Millisecond Scale Ultrasound Pulses: Implications for Controlled Transport of Bubbles to a Boundary Christopher Accorcia^{1,2}, Alex Wright¹, Dave Goertz^{1,2} ¹Sunnybrook Research Institute, Toronto, Ontario, Canada, ²University of Toronto, Toronto, Ontario, Canada					P1-A4-3 Experimental Observations of Shear Waves in Cylindrical Phantoms and Excised Equine Carotid Artery Darya Shcherbakova¹, Mathieu Pernot², Julie Vasmans¹, Mathias Kensemans¹, Annette Caenen¹, Abigail Swillens¹, Patrick Segers¹, BiTech – bioMMeta, Department of Electronics and Information Systems, Ghent University, Ghent, Belgium, ²Institut Langevin, ESPCI ParisTech, CNRS UMR 7587, INSERM ERL U979, Paris Cedex 05, France, ³Biomechanics Section, KU Leuven, Leuven, Belgium, ⁴Mechanics of Materials and Structures MMS, Department of Materials, Textiles and Chemical Engineering, Ghent University, Ghent, Belgium

P1-A4-12 Estimation of Arterial Transverse Stiffness Using Vascular Guided Wave Imaging (VGWI) in Comparison With Pulse Wave Imaging (PWI) Yuevin Guo¹, Yahua Wang¹, Jing-Han Chang¹, Wei-Ning Lee^{1,2} ¹Department of Electrical and Electronics Engineering, the University of Hong Kong, Hong Kong, ²Medical Engineering Program, the University of Hong Kong, Hong Kong	P1-A5-2 RF-NRIR for Motion Estimation in Fast Cardiac Anatomical Imaging Bidisha Chakraborty¹, João Pedrosa¹, Vangjush Komini¹, Brecht Heyde¹, Jan Dhooze¹ ¹Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium	P1-A6-3 an Evaluation of Microwave Diathermy Systems Using Temperature Increase Distributions Produced by Ultrasound Imaging Techniques Yasuhiro Shindo¹, Kenji Takahashi², Fumishi Ikumi¹, Kazuo Kato¹, Yuya Iishi¹ ¹Department of Mechanical Engineering, Toyo University, Sakama, Japan, ²Department of Orthopaedic Surgery, Nippon Medical School, Tokyo, Japan, ³Graduate School of Medical Technology and Health Sciences, Hiroshima University, Hiroshima, Japan, ⁴Department of Mechanical Engineering, Information Media University, Kanagawa, Japan, ⁵Department of Mechanical Engineering, Hachinohe National College of Technology, Aomori, Japan	P1-A7-3 Hemorrhages Detection in Atherosclerotic plaques using Ultrasound and Photoacoustic, Phantom Study Louise Goutoux¹, Umair Arabul¹, Marcel Rutten¹, Frans Van de Vosse¹, Richard Lopotat¹ ¹Biomedical Engineering, Technische Universiteit Eindhoven, Eindhoven, Netherlands	Session P1-A8, MSD: Novel Medical Devices Chair: Enrico Boni <i>University of Florence</i>
P1-A4-13 Diffuse Shear Wave Elastography in a Thin Plate Phantom L. Keizer¹, A. Sabbadini², J.G. Bosch¹, M.D. Verweij^{1,2}, A.F.W. van der Steen^{1,2}, N. de Jong^{1,2}, H.J. Vos^{1,2} ¹Biomedical Engineering, Thorax Center, Erasmus MC Rotterdam, Netherlands, ²Acoustical Wavefield Imaging, ImPhys, Faculty of Applied Sciences, Delft University of Technology, Netherlands	P1-A5-3 Improved Tendon Tracking Using Singular Value Decomposition Clutter Suppression Raja Sekhar Bandaru¹, Stefanie Evers^{2,3}, Ruud W. Selles², Andrew R. Thoreson³, Peter C. Amadio¹, Johan G. Bosch¹ ¹Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ²Department of Plastic, Reconstructive and Hand Surgery & Department of Rehabilitation Medicine, Erasmus MC, Rotterdam, Netherlands, ³Biomechanics Laboratory and Tendon and Soft Tissue Biology Laboratory, Mayo Clinic, Rochester, MN, USA	P1-A6-4 CT Scan Based Prostate Cancer Patient-Specific Transperineal Ultrasound Probe Setups for Image Guided Radiotherapy Saskia Camps^{1,2}, Frank Verhaegen³, Peter de Wit¹, Davide Fontanarosa⁴ ¹Faculty of Electrical Engineering, University of Technology Eindhoven, Netherlands, ²Oncology Solutions Department, Philips Research, Netherlands, ³Department of Radiation Oncology (MAASTRO), GROW - School for Oncology and Developmental Biology, Netherlands, ⁴School of Clinical Sciences, Queensland University of	P1-A7-3 SO₂ Quantification of Rat HCC Tumors Using Fluence-Corrected Photoacoustic Imaging Mohamed Naser¹, Houra Taghavi¹, Nina Munoz², Kiersten Maldonado³, Charles Kingsley⁴, Rony Avritscher⁵, Richard Bouchard¹ ¹Imaging Physics, the University of Texas MD Anderson Cancer Center, USA, ²Interventional Radiology, the University of Texas MD Anderson Cancer Center, USA	P1-A8-1 Simulation, Design and Implementation of External Mechanical Vibration for Shear Wave Elastography Imaging Heng Yang¹, Brian Anthony¹ ¹Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA
P1-A4-14 Experimental Investigation of Shear Wave Imaging in Thin Soft Media in Various Coupling Conditions Enoch Jing-Han Chang¹, Yuevin Guo¹, Wei-Ning Lee¹ ¹Electrical and Electronic Engineering, the University of Hong Kong, Hong Kong, Hong Kong	P1-A5-4 an Optical Flow Method for Elastography At Large Strains Using Three Image Frames Zhi Liu¹, Jianwen Luo¹ ¹Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of	P1-A6-5 a New High Definition Voxel-based Multi-planar Reformatting Method in 3-D Ultrasound Imaging Sungehan Kim¹, Jinbum Kang¹, Ilseob Song¹, Yangmo Yoo^{1,2} ¹Electronic engineering, Sogang university, Seoul, Korea, Republic of, ²Biomedical engineering, Sogang university, Seoul, Korea, Republic of	P1-A7-4 Implications of Tumor Oxygenation and Blood Flow for Cancer Treatment Monitoring Using Photoacoustic Imaging and Power Doppler Bao Hye^{1,2}, Lauren A. Wirtzfeld^{1,2}, Azza Al-Mahrouk^{1,3}, Niki Law^{1,2}, Mai Ellamawany^{1,2}, James C. Lacfield^{1,2}, Gregory J. Carnota¹, Michael C. Kolos^{1,2} ¹Institute for Biomedical Engineering, Science and Technology, Toronto, Ontario, Canada, ²Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada, ³Radiation Oncology, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada, ⁴Biomedical Engineering, Western University, London, Ontario, Canada, ⁵Robarts Research Institute, London, Ontario, Canada, ⁶Biomedical Engineering, Electrical and Computer Engineering, Medical Biophysics, Western University, London, Ontario, Canada	P1-A8-2 Needle Guidance Using Laser Generated Leaky Acoustic Waves Yi-An Wang¹, U Wai Lok¹, Pai-Chi Li¹ ¹National Taiwan University, Taipei, Taiwan
P1-A4-15 Quantitative Assessment of Plate-Like Tissue Viscoelastic Properties Using Ultrasonic Micro-Elastography With Lamb Wave Model Cho-Chiang Shih^{1,2}, Xuequn Qian¹, Teng Ma¹, Chih-Chung Huang², Qifa Zhou^{1,3}, K. Kirk Shung¹ ¹Department of Biomedical Engineering, NIH Recourse Center on Medical Ultrasonic Transducer Technology, University of Southern California, Los Angeles, CA, USA, ²Department of Biomedical Engineering, National Cheng Kung University, Tainan City, Taiwan, ³Roski Eye Institute, Department of Ophthalmology, University of Southern California, Los Angeles, Los Angeles, CA, USA	P1-A5-5 a Novel Strain-based Drift Compensation Algorithm for Improved Beat-to-Beat Repeatability of Myocardial Strain Imaging: Preliminary in vivo Results Harrison Ferlauto¹, Vaibhav Kakkad¹, Brecht Heyde², Joseph Kisslo³, Gregg Trahey¹ ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA, ²Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium, ³Cardiology, Duke University Hospital, Durham, North Carolina, USA	P1-A6-5 Validation of image restoration methods on 3D-printed ultrasound phantoms Krisztián Füzesi¹, Adrian Basarab², György Cserey¹, Denis Kouamé², Miklós Gyöngy¹ ¹Faculty of Information Technology and Bionics, Pázmány Péter Catholic University, Budapest, Hungary, ²Institut de Recherche en Informatique de Toulouse, France	P1-A7-5 Perfusion-Rate Estimation Using Compression-Based Photoacoustic-Ultrasound Imaging Min Choi¹, Roger Zemp¹ ¹Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada	P1-A8-3 a Study for Real-time B-Mode Imaging using 100-MHz-Range Ultrasound through a Fused Quartz Fiber Takasuke Irie^{1,2}, Masakazu Sato¹, Norio Tagawa³, Masasumi Yoshizawa⁴, Tadashi Moriya² ¹Microsonic co., Ltd., Tokyo, Japan, ²Tokyo metropolitan university, Japan, ³Tokyo metropolitan college of industrial technology, Japan

P1-A4-16 Parameters Impacting Accuracy of ARFI-derived Stiffness Ratios: a Simulation Study with Implications on Measurement of Dynamic Myocardial Stiffness Vaibhav Kakkad¹, Peter Hollender¹, Mark Palmeri¹, Gregg Trahey¹ ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA	P1-A5-6 Image Registration in a Tomographic Limb Ultrasound System: Comparison Between Camera-Tracking and Image-Based Motion Compensation Bryan Ranger¹, Micha Feigin¹, Hugh Herr¹, Brian Anthony¹ ¹Massachusetts Institute of Technology, Cambridge, MA, USA	P1-A6-7 In Vivo Monitoring of Microwave Ablation in a Porcine Model Using Ultrasonic Nakagami Imaging Siyan Zhang¹, Shaoqiang Shang¹, Yuqiang Han¹, Ranxiang Xu¹, Shiao Liu¹, Lei Zhang¹, Mingxi Wan¹ ¹Department of Biomedical Engineering, Xi'an Jiaotong University, China, People's Republic of	P1-A7-6 Quantitative Evaluation of Skin Aging With Photoacoustic Microscopy Yuya Murata¹, Takeshi Namita¹, Kengo Kondo¹, Makoto Yamakawa¹, Tsuyoshi Shima¹ ¹Graduate School of Medicine, Kyoto University, Kyoto, Japan	P1-A8-4 Ultrasonic Imaging Research Platform with GPU Based Software Focusing Chun Duck Park¹, Baek Sop Kim¹, Seong Ho Chang¹, Sung Jae Kwon¹, Mok Kun Jeong¹ ¹Computer Engineering, Hallym University, Korea, Republic of, ²Waygence Co. Ltd., Korea, Republic of, ³Medical IT Engineering, Daejin University, Korea, Republic of, ⁴Electronic engineering, Daejin University, Korea, Republic of
P1-A4-17 Comparison of Cardiac Displacements in a Murine model of Myocardial Ischemia using Cardiac Elastography and Speckle Tracking Echocardiography Rashid Al Mukaddim^{1,2}, Kayvan Samimi^{1,2}, Allison Rodgers², Timothy a Hacker¹, Tony Varghese^{1,2} ¹Department of Electrical and Computer Engineering, University of Wisconsin - Madison, Madison, Wisconsin, USA, ²Department of Medical Physics, University of Wisconsin - Madison, Madison, Wisconsin, USA, ³Department of Medicine, Section of Cardiovascular Medicine, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA	Session P1-A6: MIM: Medical Imaging Chair: Massimo Mischi Eindhoven University of Technology	P1-A6-8 Increased Clutter Level in Echocardiography Due To Interaction Between Ribs and Lungs Ali Fatemi¹, Alfonso Rodriguez-Molares¹, Hans Top¹, Svend Aakhus¹, Lasse Lovstakken¹, Oddveig Lyng¹, Tore Bjastad² ¹Centre for Innovative Ultrasound Solutions (CIUS), Norwegian University of Science and Technology, Trondheim, Norway, ²GE Vingmed, Horten, Norway	P1-A7-7 Photoacoustic and High Frequency Ultrasound Imaging of Mechanical and Thermal HIFU Ablation Khalid Daoudi¹, Martijn Hoogenboom², Martijn Den Broek³, Gosse Adema³, Jurgen Futterer⁴, Chris De Korte¹ ¹Department of Radiology and Nuclear Medicine, Medical UltraSound Imaging Centre, radboud university medical center, Nijmegen, Netherlands, ²Radiology and Nuclear Medicine, radboud university medical center, Nijmegen, Netherlands, ³Radiation Oncology laboratory, dep. Radiation Oncology, radboud university medical center, Nijmegen, Netherlands, ⁴Department of Radiology and Nuclear Medicine, radboud university medical center, Nijmegen, Netherlands	P1-A8-5 a Micro Self-Spin Electromagnetic Actuator for Intravascular Ultrasound (IVUS) Imaging Application Jue Peng^{1,2}, Lucai Ma^{1,2}, Hu Tang^{1,2}, Sping Chen^{1,2} ¹National-Regional Key Technology Engineering Laboratory for Medical Ultrasound, Department of Biomedical Engineering, School of Medicine, Shenzhen University, Shenzhen, China, People's Republic of, ²Guangdong Key Laboratory for Biomedical Measurements and Ultrasound Imaging, Department of Biomedical Engineering, School of Medicine, Shenzhen University, Shenzhen, China, People's Republic of
Session P1-A5: MIM: Ultrasound Motion/Deformation Estimation Chair: Richard Lopata Eindhoven University of Technology	P1-A6-1 Ex-Vivo Phantom for Evaluation of Ultrasound Speckle Tracking in the Uterus Federica Sammiti¹, Celine Blank^{1,2}, Lin Xu¹, Dick Schoot^{1,3}, Massimo Mischi¹ ¹Eindhoven University of Technology, Netherlands, ²Catharina Hospital Eindhoven, Netherlands, ³University Hospital Ghent, Belgium	Session P1-A7: MPA: Applications of Photoacoustics Chair: Chulhong Kim Pohang University of Science and Technology	P1-A7-8 Identification of Aggressive Prostate Cancer in Ex Vivo Human Prostates by Physio-Chemical Photoacoustics Guan Xu¹, Shengsong Huang², Yu Qin³, Jing Pan³, Qian Cheng³, Yingna Chen³, Xueding Wang⁴, Denglong Wu² ¹Radiology, University of Michigan, Ann Arbor, MI, USA, ²Urology, Tongji University Hospital, China, People's Republic of, ³Tongji University, China, People's Republic of, ⁴University of Michigan, USA	P1-A8-6 Design of a 2D Sparse Array Transducer for Integration into an Ergonomic Transcranial Ultrasound System Xiaotong Li¹, Anthony Gachagan¹, Paul Murray² ¹Electronic and Electrical Engineering, Centre for Ultrasonic Engineering, Glasgow, United Kingdom, ²Electronic and Electrical Engineering, Centre for Signal and Image Processing, Glasgow, United Kingdom
P1-A5-1 Fast Frame Rate 2D Cardiac Deformation Imaging Based on RF Data: What Do We Gain? Francois Vignon¹, Sheng-Wen Huang¹, Shiyong Wang¹, Lea Melki¹, Baptiste Blochet¹, Oudom Somphone², Eric Saloux³, Patrick Rafter⁴, Scott Dians¹ ¹Philips Research North America, Cambridge, MA, USA, ²Philips Research France, Suresnes, France, ³CHU Caen, France, ⁴Philips Healthcare, Andover, MA, USA	P1-A6-2 Multi-2D Reconstruction of Electromechanical Activation Maps of a Beating Heart Pierre Nauléau¹, Lea Melki², Elaine Wan³, Elisa Konofagou^{2,4} ¹Ultrasound Elasticity Imaging Laboratory, Dpt of Biomedical Engineering, Columbia University, New York, NY, USA, ²Ultrasound Elasticity Imaging Laboratory, Dpt of Biomedical Engineering, Columbia University, USA, ³Department of Medicine, Division of Cardiology, College of Physicians and Surgeons, Columbia University, USA, ⁴Department of Radiology, Columbia University, USA	P1-A7-9 In Vivo Spectroscopic Photoacoustic Imaging of Tumor Protease Activity by Using Gold Nanoparticle-based Activatable Nanoprobe Cheng Liu¹, Shiyong Li¹, Yanjuan Gu², Lei Sun¹ ¹Interdisciplinary Division of Biomedical Engineering, the Hong Kong Polytechnic University, China, People's Republic of, ²Department of Applied Biology and Chemical Technology, the Hong Kong Polytechnic University, China, People's Republic of	P1-A8-7 a Delayed-Excitation Imaging Method for Micro-Ultrasound Peitian Mu¹, Jingjing Xia¹, Xinying Wang¹, Congzhi Wang¹, Yang Xiao¹, Ge Yang¹, Lei Sun², Hairong Zheng¹, Weibao Qiu¹ ¹Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of, ²Interdisciplinary Division of Biomedical Engineering, the Hong Kong Polytechnic University, Hong Kong, China, China, People's Republic of	

P1-A8-8 a Multi-channel Doppler Ultrasound and Near-Infrared Spectroscopic Patch for Quantitative Monitoring of Cardiopulmonary Resuscitation Sangyeon Yoon¹, Jihun Kim¹, Kijoon Lee¹, Jae Gwan Kim², Jae Youn Hwang¹ ¹DGIST, Daegu, 27 - Daegu Gwanggyeoksi, Korea, Republic of, ²GIST, Korea, Republic of	P1-A9-7 Improved High Axial Resolution Ultrasound Imaging Using Spectral Whitening and Minimum-Variance Based Coherence Weighting Hong-Sheng Chen¹, Meng-Lin Li¹ ¹National Tsing Hua University, Taiwan	P1-A10-1 Numerical Computation of Time-Domain Green's Functions for the Treeby-Cox Space-Fractional Wave Equation Xiaofeng Zhao¹, Robert McCough¹ ¹Electrical and Computer Engineering, Michigan State University, East Lansing, MI, USA	Session P1-A11 MTH: Cavitation, Histotripsy, Microbubbles Chair: Mingxi Wan Xi'an Jiaotong University	P1-A11-8 Swept Frequency Waveforms Enhance Target Specificity of Ultrasonic Neuromodulation in Mice in Vivo Christian Aurup¹, Elisa Konofagou^{1,2} ¹Biomedical Engineering, Columbia University, New York, NY, USA, ²Radiology, Columbia University, New York, NY, USA
Session P1-A9. MSP: Optimizing Imaging Performance Chair: Jianwen Luo Tsinghua University	P1-A9-8 Ultrafast Ultrasound Imaging Using a Resolution and Bandwidth Enhancement Technique Yanis Benane¹, Roberto Lavarello², Christian Cachard¹, François Varray¹, Jean-Michel Escoffier³, Anthony Novel¹, Emilie Franceschini⁴, Olivier Basset¹ ¹Univ-Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, UJM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, F-69100, Lyon, France, ²Laboratorio de Imágenes Médicas, Departamento de Ingeniería, Pontificia Universidad Católica del Perú, Lima, Peru, ³Imagerie et Cerveau, Université François-Rabelais, Inserm, Tours, France, ⁴Aix-Marseille Université, CNRS, Centrale Marseille, Laboratoire de Mécanique et d'Acoustique, Marseille, France	P1-A10-2 White-Silicone Rubber and Copolymer-in-Oil Blend for Ultrasound Soft Tissue Mimicking Material Felipe Grillo¹, Luciana Cabrelli¹, Leticia Ribeiro¹, Rondinelli Herculanoo², Felipe Borges², Theo Pavan¹, Antonio Carneiro¹ ¹Physics Department, University of São Paulo, Ribeirão Preto, São Paulo, Brazil, ²Departamento de Bioprocessos e Biotecnologia, UNESP, Araraquara, São Paulo, Brazil	P1-A11-1 Daily Intra-Tumoral Administration of Oxygen Microbubbles Slows Tumor Growth in the Absence of Other Therapy in a Rat Subcutaneous Fibrosarcoma Model Virginie Papadopoulos¹, Samantha M. Fix^{1,2}, Hunter Velds³, Mark A. Borden³, James Tsuruta¹, Paul A. Dayton¹ ¹Department of Biomedical Engineering, UNC Chapel Hill, USA, ²Eschelman School of Pharmacy, UNC Chapel Hill, USA, ³Department of Mechanical Engineering, University of Colorado, USA	Session P2-A1. Imaging Chair: Joel Harley University of Utah
P1-A9-1 USSR: an Ultrasound Sparse Regularization Framework Adrien Besson¹, Dimitris Perdios¹, Florian Martinez¹, Marcel Arditi¹, Yves Wiaux², Jean-Philippe Thiran^{1,3} ¹Signal processing laboratory (LTS5), Ecole Polytechnique Fédérale de Lausanne, Lausanne, VD, Switzerland, ²Institute of sensors, signals, and systems, Heriot-Watt University, Edinburgh, United Kingdom, ³Department of Radiology, University Hospital Center (CHUV) and University of Lausanne (UNIL), Lausanne, VD, Switzerland	P1-A9-9 Cross-Correlation Detection Improves Spatial Delineation and Enables High Resolution Tracking of Temporal Events in Magnetoacoustic Ultrasound Imaging Roger Andersson¹, Maria Evertsson², Magnus Cinhio², Tomas Jansson^{1,3} ¹Skåne University Hospital, Medical Services, Lund, Sweden, ²Biomedical Engineering, Lund, Sweden, ³Biomedical Engineering, Clinical Sciences, Lund, Sweden	P1-A10-3 3D Ultrasound Imaging of Tissue Anisotropy Using Spatial Coherence: Comparison Between Plane Waves and Diverging Waves Emeline Turquin¹, François Varray¹, Lorena Petrusca¹, Magalie Viallon¹, Hervé Liebgott¹ ¹CREATIS, Univ.Lyon, INSA-Lyon, Univ.Lyon 1, UJM, CNRS, Inserm, UMR 5220, U1206, Villeurbanne, France	P1-A11-2 Determining a Cavitation Threshold for Focused Ultrasound Enhanced Intranasal Drug Delivery Robin Ji¹, Elisa Konofagou^{1,2} ¹Biomedical Engineering, Columbia University, New York, New York, USA, ²Radiology, Columbia University, USA	P2-A1-1 3D Ultrasound Palm Vein Recognition Through the Centroid Method for Biometric Purposes Michele De Santis¹, Sandro Agnelli¹, Donatella Nardello², Antonio Iula² ¹University Niccolò Cusano, Roma, RM, Italy, ²School of Engineering, University of Basilicata, Potenza, PZ, Italy
P1-A9-2 Beam Domain Adaptive Beamforming using Generalized Side Lobe Canceller with Coherent Factor for Medical Ultrasound Imaging Acácio Zimbico¹, Diego Granado², Fábio Schneider¹, Joaquim Maia³, Amauri Assel⁴, Daniel Pipa¹, Eduardo Costa⁵ ¹CPGEI, UTFPR, Curitiba, PR, Brazil, ²CPGEI, UTFPR, Curitiba, Brazil, ³DAELN/PPGEB/CPGEI, UTFPR, Curitiba, Brazil, ⁴DAELT/PPGSE/CPGEI, UTFPR, Curitiba, Brazil, ⁵DAELN/CPGEI, UTFPR, Curitiba, Brazil, ⁶DEB/FEEC/CEB, UNICAMP, Campinas, São Paulo, Brazil	P1-A10-4 Structure Factor Model-Based Approach for Analyzing Two-Dimensional Impedance Map and Studying Scattering From Polydisperse Dense Media Kazuki Tamura¹, Emilie Franceschini², Jonathan Mamou³, Tadashi Yamaguchi⁴ ¹Graduate school of Engineering, Chiba university, Chiba, Japan, ²Laboratoire de Mécanique et d'Acoustique, Aix-Marseille Université, CNRS, Centrale Marseille, Marseille, France, ³Lizzi Center for Biomedical Engineering, Riverside Research, New York, NY, USA, ⁴Center for Frontier Medical Engineering, Chiba University, Chiba, Japan	P1-A11-3 Acoustic Methods for Cavitation Threshold Modulation Hedieh Alavi Tamaddon¹, Timothy L. Hall¹ ¹Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA	P2-A1-2 Frequency Display by Clustering Multispectral Acoustic Imaging Data Xinhua Guo¹, Xiaodong Ye¹, Kaihua Cao¹ ¹School of Mechanical and Electronic Engineering, Wuhan University of Technology, China, People's Republic of	

P1-A9-3 Estimation of Phase Velocity and Attenuation of Visco-Elastic Plate With Adaptive Beamforming Technique for Cortical Bone Assessment Shigeaki Okumura¹, Vu-Hieu Nguyen², Hirofumi Taki³, Tomi Sato⁴ ¹Kyoto University, Kyoto, Japan, ²Université Paris-Est, France, ³Tohoku University, Japan	P1-A9-11 Iterative Trace Reconstruction of Aliased RF Data Obtained Using Harmonic Imaging: a Feasibility Study Paul van Neer¹, Hendrik Vos², Arno Volker¹ ¹Acoustics and Sonar, TNO, the Hague, Netherlands, ²Biomedical Engineering, ErasmusMC, Rotterdam, Netherlands	P1-A10-5 Consistency of Echo Signal Power Spectra Among Systems and Transducers Quinton Guerrero¹, Yassin Labyed², Liexiang Fan², Shelby Brunk², Andy Milkowski², Timothy Hall¹ ¹Medical Physics Department, University of Wisconsin Madison, Madison, WI, USA, ²Ultrasound Division, Siemens Medical Solutions USA, Issaquah, WA, USA	P1-A11-4 Precisely Controlled Cavitation During the Perfluorocarbon (PFC) Nanodroplets Assisted HIFU Surgery Nan Chang¹, Xin Wang¹, Mingzhu Lu¹, Shukuan Lu¹, Supin Wang¹, Mingxi Wan¹ ¹Department of Biomedical Engineering, Xian Jiaotong University, Xi'an, China, People's Republic of	P2-A1-3 Evaluation of Position and Velocity Measurement for a Moving Object by Pulse Compression Using Ultrasound Coded by Preferred-Pair M-Sequences Shinosuke Hirata¹, Kota Yamanaka¹, Hiroyuki Hachiya¹ ¹Dept. of Systems and Control Engineering, Tokyo Institute of Technology, Meguro, Japan
P1-A9-4 Simultaneous Coded Plane Wave Imaging: Implementation on a Research Echograph Denis Bujoreanu¹, Adeline Bernard¹, Barbara Nicolas¹, Hervé Liebgott¹, Denis Friboulet¹ ¹Univ-Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, UJM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, F-69100, LYON, France	P1-A9-12 Complexity Reduction of Ultrasound Sub-Ultra-Harmonic Modeling by an Input Modified Volterra Approach Fatima Sheit¹, Sébastien Menigot², Emma Kanbar³, Jamal Charara¹, Jean-Marc Girault² ¹Department of Physics and Electronics, Faculty of Sciences I, Lebanese University, Beirut, Lebanon, ²Politech Tours, Université François-Rabelais de Tours, Inserm, Imagerie et Cerveau UMR U930, Tours, France, ³Université François-Rabelais de Tours, Inserm, Imagerie et Cerveau UMR U930, Tours, France	P1-A10-6 Reflector-Based 3D Tomographic Ultrasound Reconstruction: Simulation Study Bhaskara Rao Chintada¹, Sergio J. Sanabria¹, Wolfgang Bost², Orcun Goksel¹ ¹Computer-assisted Applications in Medicine, ETH Zurich, Switzerland, ²Fraunhofer Institute for Biomedical Engineering, Sulzbach, Germany	P1-A11-5 Histotripsy Produced by Dual Frequency of Fundamental and Harmonic Superimposition with Protocol of Hundred-Microsecond-Length Pulses and Two Stages Mingzhu Lu¹, Rui Wang¹, Yujiao Li¹, Linglu Zhang¹, Dan Han¹, Yanshan Liu¹, Mingxi Wan¹ ¹Department of Biomedical Engineering, Xian Jiaotong University, Xi'an, Shaanxi, China, People's Republic of	P2-A1-4 A Comparison of Walsh and Maximum Length Sequence Signal Coding Applied to Time Domain Beamforming Carson Willey¹, Carlos Rentel¹ ¹X-wave Innovations, Inc., Gaithersburg, Maryland, USA
P1-A9-5 Fourier-Based Ultrafast Ultrasound Imaging Based on In-Phase Quadrature (IQ) Data Miaomiao Zhang¹, Hervé Liebgott¹, François Varray¹, Denis Friboulet¹, Olivier Bernard¹ ¹Univ-Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, UJM-Saint Etienne, CNRS, Inserm, CREATIS, Villeurbanne, France	P1-A9-13 Micro-Embolus Sub-Band Detection Based on Doppler Energy Fluctuations Maroun Geryes¹, Sébastien Menigot², Jamal Charara¹, Jean-Marc Girault² ¹Department of Physics and Electronics, Faculty of Sciences I, Lebanese University, Beirut, Lebanon, ²Politech Tours, Université François-Rabelais de Tours, Inserm, Imagerie et Cerveau UMR U930, Tours, France	P1-A10-7 Effect of Multi-Reflection on Analysis of Acoustic Impedance of Cultured Cells Tamaki Honda¹, Kazuyo Ito¹, Kenji Yoshida², Hitoshi Maruyama³, Tadashi Yamaguchi² ¹Graduate School of Engineering, Chiba University, Chiba, Japan, ²Center for Frontier Medical Engineering, Chiba University, Chiba, Japan, ³Graduate School of Medicine, Chiba University, Chiba, Japan	P1-A11-6 Enhanced Histotripsy Induced by Hundreds of Microsecond Pulses and Dual-Frequency Second Harmonic Superimposition: a Preliminary Study Yujiao Li¹, Mingzhu Lu¹, Rui Wang¹, Dan Han¹, Yanshan Liu¹, Mingxi Wan¹ ¹Department of Biomedical Engineering, School of Life Science and Technology, Xian Jiaotong University, Xi'an, Shaanxi, China, People's Republic of	P2-A1-5 Analytical Foundations of Multimode Focusing in Pipes Julio Isla¹ ¹Mechanical Engineering, Imperial College London, London, United Kingdom
P1-A9-6 on an Analytical, Spatially-Varying, Formulation of the Point-Spread-Function With an Application To Deconvolution Lucien Roquet^{1,2}, Matthieu Simeoni^{1,2}, Paul Hurley¹, Adrien Besson³ ¹IBM, Rüschlikon, Zurich, Switzerland, ²Mathematics, EPFL, Lausanne, Vaud, Switzerland, ³Signal Processing Laboratory (LTS5), EPFL, Lausanne, Vaud, Switzerland	Session P1-A10: MTC: Instrumentation and Processing Methods for Tissue Characterization Chair: Lori Bridal Laboratoire d'Imagerie Biomédicale	P1-A10-8 a Model-based Approach for Estimating Local Speed of Sound in Tissue using Pulse Echo Ultrasound Marko Jakovljevic¹, Rehman Ali¹, Dongwoon Hyun¹, Scott Hsieh², Jeremy Dahl¹ ¹Radiology, Stanford University, Palo Alto, CA, USA, ²Radiology, University of California Los Angeles, Los Angeles, CA, USA	P1-A11-7 Impact of Step Size on Histotripsy Treatment of Staphylococcus aureus Biofilms on Surgical Mesh Timothy Bigelow¹, Clayton Thomas¹, Huaqing Wu¹, Kamal Itani^{2,3} ¹Iowa State University, Ames, Iowa, USA, ²VA Boston Healthcare System, USA, ³Boston Medical Center, USA	Session P2-A2: Sensors Chair: David Greve Carnegie Mellon University

P2-A2-1 The Influence of Surface Conductivity of Thin Layer Near the Free Side of Piezoelectric Resonator With Lateral Electric Field on Its Characteristics Boris Zaitsev¹, Andrey Teplykh¹, Alexander Shkhabudinov¹, Irina Borodina¹ ¹Saratov Branch, Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Saratov, Russian Federation	P2-A3-3 Using SAM Technology and Fuzzy C-Means Algorithm for Defect Inspection of Solder Bumps Xiangning Lu¹, Zhenzhi He¹, Minghui Shao¹, Lei Su² ¹Jiangsu Normal University, China, People's Republic of, ²Jiangnan University, China, People's Republic of	P2-A4-2 Influence on the Accuracy of Clamp-On Ultrasonic Flowmeters Due To the Recombination of Multiple Propagation Paths Oliver Millán-Blasco¹, Jordi Salazar¹, Juan A. Chávezz¹, Antoni Turó¹, Miguel J. García-Hernández² ¹Electronic Engineering, Universitat Politècnica de Catalunya, Barcelona, Barcelona, Spain	P3-A2-2 Proposal for Topological Insulator Realized with Piezoelectric Resonators Sean McHugh¹ ¹Resonant Inc., Santa Barbara, CA, USA	P3-A3-5 Nonlinear Ultrasound Propagation in homogeneous and heterogeneous media: factors affecting the in situ Mechanical Index (MI) Bofeng Zhang¹, Gianmarco Pinton^{2,3}, Bharat Tripathi^{2,3}, Yuteng Deng¹, Kathryn Nightingale¹ ¹Duke University, USA, ²University of North Carolina at Chapel Hill, USA, ³North Carolina State University, USA
P2-A2-2 The Influence of Viscous and Conducting Liquids on Slot Wave in the Device Based on Delay Line With Shear - Horizontal Acoustic Wave of Zero Order Irina Borodina¹, Boris Zaitsev¹, Andrey Teplykh¹ ¹Saratov Branch, Kotel'nikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Saratov, Russian Federation	P2-A3-4 Dynamic Shear Strain Analysis for Silhouette Reconstruction of Defects in Anisotropic Laminated Composites Kenbu Teramoto¹, Haruka Ishibashi¹ ¹Saga University, Saga-shi, Japan	P2-A4-3 Characterization of Nonhomogeneity in the Dispersive Properties of the Materials Used in Pipes Oliver Millán-Blasco¹, Jordi Salazar¹, Juan A. Chávezz¹, Antoni Turó¹, Miguel J. García-Hernández² ¹Electronic Engineering, Universitat Politècnica de Catalunya, Barcelona, Barcelona, Spain	P3-A2-3 Observation of Band Gaps in Chirped Interdigital Transducers ANURUPA SHAW¹, Damien Teyssieux², Vincent Laude¹ ¹FEMTO-ST, Besançon, France, ²FEMTO-ST, France	Session P3-A4. PUM - Ultrasonic Motors and High Intensity Applications Chair: Vincent Laude Université de Bourgogne Franche-Comté, CNRS
P2-A2-3 Measurements of Oil Quality Using Shear Horizontal Surface Acoustic Wave Sensor Saya Kobayashi¹, Jun Kondoh² ¹Graduate School of Integrated Science and Technology, Shizuoka University, Hamamatsu-shi, Japan, ²Graduate School of Science and Technology, Shizuoka University, Hamamatsu-shi, Japan	P2-A3-5 Extraction of Healthy Part Using Two Acoustic Characteristics for Defect Detection by Non-Contact Acoustic Inspection Method Kazuko Sugimoto¹, Tsuneyoshi Sugimoto¹, Takeyuki Oodaira¹, Itsuki Uechi¹, Noriyuki Utagawa² ¹Graduate School of Engineering, Toin University of Yokohama, Yokohama, Japan, ²Sato Kogyo Co., Ltd., Japan	Session P3-A1. POA - Opto-Acoustics Chair: Sarah Benchabane CNRS, Université de Bourgogne Franche-Comté	P3-A2-4 Tuning Waves in Soft Phononic Rods via Large Deformation and Electromechanical Coupling Bin Wu¹, Weiqiu Chen² ¹Department of Engineering Mechanics, Zhejiang University, Hangzhou, China, People's Republic of, ²Department of Engineering Mechanics, Zhejiang University, Hangzhou, Zhejiang, China, People's Republic of	P3-A4-1 Design and Experimental Evaluation of a Linear Piezoelectric Ultrasonic Motor Using Longitudinal Transducers Hongpeng Yu¹, Yingxiang Liu¹, Shengjun Shi², Xinqi Tian² ¹State Key Laboratory of Robotics and System, Harbin Institute of Technology, Harbin, Heilongjiang, China, People's Republic of, ²Harbin Institute of Technology, China, People's Republic of
P2-A2-4 Design and Enhancement of a Magnetostrictive Generating EMAT Without Magnet Jianpeng He¹, Ke Xu² ¹National Engineering Research Center of Advanced Rolling Technology, University of Science and Technology Beijing, Beijing, China, People's Republic of, ²Collaborative Innovation Center of Steel Technology, University of Science and Technology Beijing, Beijing, China, People's Republic of	P2-A3-6 Generation and Propagation of Rayleigh Surface Wave in Anisotropic Materials by Line-focus Ultrasonic Transducer Qiyuan Li¹, Yuxiang Wang¹, Chenglong Ji¹, Qing-Ming Wang¹ ¹Mechanical Engineering and Materials Science, University of Pittsburgh, Pittsburgh, PA, USA	P3-A1-1 Spatio-Temporal Superposition of LGFU and HIFU to Facilitate Acoustic Cavitation Lee Seung Jin¹, Baac Hyoung Won¹ ¹Sungkyunkwan University, Korea, Republic of	Session P3-A3. PNL - Nonlinear Ultrasound Chair: Andreas Mayer HS Offenburg - Univ. of Applied Sciences, Gengenbach	Session P3-A5. PTF - Thin Films Chair: Vincent Laude Université de Bourgogne Franche-Comté, CNRS

P2-A2-5 Fabrication and Characterization of a Photoacoustic Lens Using a CNT Gel-PDMS Composite Film Jeongmin Heo¹, Erwin J. Alles², Sacha Noimark^{2,3}, Radhika Podaval^{2,3}, Richard J. Colchester², Ivan P. Parkin³, Ioannis Papakonstantinou⁴, Adrien E. Desjardins², Hyung Won Baac¹ ¹School of Electronic and Electrical Engineering, Sungkyunkwan University, Suwon 440-746, Korea, Republic of; ²Department of Medical Physics and Biomedical Engineering, University College London, London, United Kingdom; ³Materials Chemistry Research Centre, Department of Chemistry, University College London, London, United Kingdom; ⁴Department of Electronic and Electrical Engineering, University College London, London, United Kingdom	P2-A3-7 Estimation of the Thickness of Refractory Ceramics by the Impact-Echo Method Seongmin Lee¹, Namho Shin², Yongrae Roh¹ ¹School of Mechanical Engineering, Kyungpook National University, Daegu, Korea, Republic of; ²Technical Research Laboratory, POSCO, Pohang, Korea, Republic of	P3-A1-2 Photoacoustic-Based SO₂ Assessment of Femoral Bone Marrow in a Murine Model of Leukemia Cayla Wood^{1,2}, Karine Hartunyan³, Jorge Delacorda¹, Niki Zacharias Millward^{2,4}, Stram Shammugavelandy⁴, Caterina Kafes¹, Marina Konopleva^{2,3}, Richard Bouchard^{1,2} ¹Department of Imaging Physics, the University of Texas MD Anderson Cancer Center, Houston, Texas, USA; ²Graduate School of Biomedical Sciences, the University of Texas MD Anderson Cancer Center UTHHealth, Houston, Texas, USA; ³Department of Leukemia, the University of Texas MD Anderson Cancer Center, Houston, Texas, USA; ⁴Department of Cancer Systems Imaging, the University of Texas MD Anderson Cancer Center, Houston, Texas, USA	P3-A3-1 Investigation of the Nonlinear Propagation of Ultrasound Through a Bubbly Medium Including Multiple Scattering and Bubble-Bubble Interaction: Theory and Experiment Amin JafariSojehrood^{1,2}, Qian Li³, Hossein Haghi¹, Tyrone M. Porter³, Michael C. Kolios¹ ¹Physics, Ryerson University, Toronto, Ontario, Canada; ²Institute for Biomedical Engineering, Science and Technology (IBEST), a partnership between Ryerson University and St. Michael's Hospital, Toronto, Canada; ³Biomedical Engineering, Boston University, Boston, MA, USA	P3-A5-1 Mechanisms of Appearance of Backward Shear-Horizontal Waves in Potassium Niobate Plates Ilya Nedospasov¹, Vladimir Mozhaev², Iren Kuznetsova¹ ¹Kotel'nikov Institute of Radio Engineering and Electronics, Russian Academy of Sciences, Moscow, Russian Federation; ²Physics Faculty, Lomonosov Moscow State University, Moscow, Russian Federation
P2-A2-5 Fabrication and Characterization of a Photoacoustic Lens Using a CNT Gel-PDMS Composite Film Jeongmin Heo¹, Erwin J. Alles², Sacha Noimark^{2,3}, Radhika Podaval^{2,3}, Richard J. Colchester², Ivan P. Parkin³, Ioannis Papakonstantinou⁴, Adrien E. Desjardins², Hyung Won Baac¹ ¹School of Electronic and Electrical Engineering, Sungkyunkwan University, Suwon 440-746, Korea, Republic of; ²Department of Medical Physics and Biomedical Engineering, University College London, London, United Kingdom; ³Materials Chemistry Research Centre, Department of Chemistry, University College London, London, United Kingdom; ⁴Department of Electronic and Electrical Engineering, University College London, London, United Kingdom	P2-A3-8 Damage Identification in Plate-Like Structures Based on Lamb Waves Mode-Conversion Sensing Using 3D Laser Vibrometer Lukasz Ambrozinski¹, Jakub Spytek¹, Kajetan Dzedziech¹, Lukasz Pieczonka¹ ¹Robotics and Mechatronics, AGH University of Science and Technology, Krakow, malopolskie, Poland	P3-A1-3 Evaluation of Wave Velocity in C-Axis Oriented Hydroxyapatite Film by Brillouin Scattering Technique Hiroimichi Hayashi¹, Mami Matsukawa¹, Takafumi Kubota¹, Shohei Tokuda¹, Yoshiaki Shibagaki¹, Mami Kawase¹ ¹Doshisha Univ, Kyotanabe, Kyoto, Japan	P3-A3-2 Selecting the Number and Location of Sources and Receivers for Non-Linear Time-Domain Inversion Ana B. Ramirez¹, Sergio A. Abreo¹, Koen van Dongen² ¹Universidad Industrial de Santander, Colombia; ²Delft University of Technology, Netherlands	P3-A5-2 Film Growth of C-Axis Tilted SCAIN on the Sapphire Substrate for SAW devices Shohei Tokuda¹, Shinji Takayanagi², Mami Matsukawa¹, Takahiko Yangitani³ ¹Doshisha Univ, Kyotanabe, Japan; ²Nagoya Institute of Technology, Japan; ³Waseda Univ, Japan
P2-A3-1 Ultrasonic Flaw Detection based on Temporal and Subband Signals Applied to Neural Network Boyang Wang¹, Jafar Samiie¹ ¹Illinois Institute of Technology, USA	Session P2-A4: Flow Measurement Chair: Mario Kupnik Technische Universität Darmstadt	Session P3-A2: PPN - Phononics Chair: Sarah Benchabane CNRS, Université de Franche-Comté	Session P4-A1: Simulation of Microacoustic Devices and Effects Chair: Maximilian Pfitschi RF360 Europe GmbH	
P2-A3-2 Block Sparse Compressed Sensing in Ultrasonic NDE Echo Analysis and Parameter Estimation Yufeng Lu¹, Jafar Samiie² ¹Bradley University, USA; ²Illinois Institute of Technology, USA	P3-A2-1 Phononic Lens for Suppressing Diffraction of Surface Wave in Lithium Niobate Substrate Jia-Hong Sun¹, Yuan-Hai Yu¹ ¹Department of Mechanical Engineering, Chang Gung University, Tao-Yuan, Taiwan	P3-A3-3 Ultrasound Nonlinearity Parameter Assessment With the Plane Wave Imaging Michal Byra¹, Janusz Wójcik¹, Andrzej Nowicki¹ ¹Institute of Fundamental Technological Research PAS, Warsaw, Poland	P4-A1-1 Selection of Materials for Multilayered Structures to Be Used in Packageless Sensors Natalya Naumenko¹ ¹National University of Science and Technology "MISIS", Moscow, Russian Federation	
	P3-A2-1 Splitting of the Ultrasonic Beam Path in Clamp-On Ultrasonic Flowmeters Due to Propagation Through Dispersive Materials Oliver Millán-Blasco¹, Jordi Salazar¹, Juan A. Chávez¹, Antoni Turó¹, Miguel J. García-Hernández² ¹Electronic Engineering, Universitat Politècnica de Catalunya, Barcelona, Barcelona, Spain	P3-A3-2 Dynamic Nonlinear Focal Shift and Acoustic Radiation Forces in Amplitude-Modulated Focused Beams Noé Jiménez¹, Francisco Camarena², Nuria González-Salido³, Sergio Giménez-Gambín² ¹CNRS, LUNAM Université, Université du Maine, Le Mans, France; ²Instituto de Instrumentación para Imagen Molecular, Universitat Politècnica de València, Valencia, Spain; ³CSIC, Madrid, Spain		

Poster --- Thursday, September 7, 2017

9:30 am - 4:00 pm

Exhibit Hall

P4-A1-2 Traveling Wave Excitation for FEM Simulation of RF SAW/BAW Devices Xinyi Li^{1,2}, Jingfu Bao¹, Yulin Huang^{1,2}, Benfeng Zhang^{2,3}, Gongbin Tang^{2,3}, Tatsuya Omori², Ken-ya Hashimoto^{2,3} ¹University of Electronic Science and Technology of China, Chengdu, Sichuan, China, ²People's Republic of China, Chengdu, Sichuan, China, ³Shanghai Jiao Tong University, Shanghai, China, ⁴People's Republic of	P4-A2-3 Implementation of Frequency Scanning Function in Phase Sensitive Laser Probe System for RF SAW/BAW Devices Tatsuya Omori¹, Tasaku Suzuki¹, Ken-ya Hashimoto¹ ¹Chiba University, Japan	P5-A1-5 Hybrid Dual Frequency Transducer / Array Probe for Super-Harmonic Imaging Jianhua Yin¹, Emmanuel Cherin¹, Christine Demore¹, Paul Dayton², F. Stuart Foster¹ ¹Imaging Research, Sunnybrook Research Institute, Toronto, Ontario, Canada, ²Department of Biomedical Engineering, University of North Carolina, USA	P5-A2-5 a FPGA-based Home-Care Ultrasound Device for Measuring the Flow Volume of Arteriovenous Fistula in Dialysis Patients Po-Yang Lee¹, Chih-Chung Huang¹ ¹Department of Biomedical Engineering, National Cheng Kung University, Taiwan	
P4-A1-3 Parametric Study of the Resonant TC-SAW Piston-mode Configurations Ventsislav Yantchev^{1,2}, Sean McHugh³, Patrick Turner³ ¹Q-Aris Consulting Ltd., Sofia, Bulgaria, ²Chalmers Sweden, ³Resonant Inc., Santa Barbara, CA, USA	P4-A2-4 Design and Characterization of SAW filters for High Power Performance Jim Costa¹, Sean McHugh¹, Patrick Turner¹, Balam Willemssen¹, Neal Fenzl¹, Bob Hammond¹, J.D. Ha², C.H. Lee², Takahiro Sato³ ¹Resonant Inc., USA, ²Wisol Co. Ltd., Korea, Republic of, ³Wisol Japan Co. Ltd., Japan	P5-A1-6 an Intracranial Implantable Ultrasound Device for Seizure Mapping Weimei Shao¹, Zhongqian Li¹, Zhile Han¹, Jibing Wu¹, Dan Li², Hongzao Ma³, Yaoyao Cui¹ ¹Suzhou Institute of Biomedical Engineering and Technology (SIBET), Chinese Academy of Sciences, China, ²People's Republic of, ³Jilin University, China, ⁴People's Republic of, ⁵Cornell University, USA	P5-A2-6 Doppler-based Blood Pressure Measurement System for Patients Supported by a Continuous-Flow Rotary Left Ventricular Assist Device Jakub Rabczki¹, Beata Witke¹, Tomasz Steier¹, Martin Lewandowski¹ ¹Laboratory of Professional Electronics, Institute of Fundamental Technological Research, Warsaw, Poland	
P4-A1-4 Effective SAW Excitation on the Non-Piezoelectric Substrate Using the Alscn Piezoelectric Film BAW/SAW Hybrid Transducer Vladimir Pashchenko¹, Mohammad Fazel Parsapour Kolour¹, Sylvain Baillandras², Paul Muralt¹ ¹Electroceramic Thin Films Group, Swiss Federal Institute of Technology in Lausanne, Lausanne, Switzerland, ²Freelance, Besançon, France	P4-A2-5 Validation of a Thermal Model for TC SAW Resonators Wolfgang Aktaller¹, Kimmo Kokkonen², Jan Kuypers³, Robert Weigel¹, Amelie Hagelauer¹ ¹Institute for electronics engineering, Erlangen, Bavaria, Germany, ²Qorvo Munich GmbH, Germany, ³Qorvo, Inc., Apopka, FL, USA	P5-A1-7 a Feasibility Study for MRI Guided CMUT-based Intracardiac Echocardiography Catheters Seyedabdollah Mirbozorgi¹, Coskun Tekes², Amirabbas Prouz², Ozgur Kocaturk³, Robert J. Lederman³, Maysam Ghovanloo¹, F. Levent Degertekin² ¹School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA, ²George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, USA, ³Division of Intramural Research, National Institute of Health, Bethesda, MD, USA	Session P5-A3. Transducer Optimization Chair: Anne-Christine Hladky IEMN	
P4-A1-5 Investigation of Interaction of Surface Acoustic Wave With Controlled Electroinduced Domain Structures in the Crystal Siarhei Barsukou¹, Jun Kondolt², Sergei Khakhomov³ ¹Shizuoka University, Hamamatsu, Japan, ²Graduate School of Science and Technology, Shizuoka University, Hamamatsu, Japan, ³Optic, Gomel State University, Gomel, Belarus	Session P5-A1. Imaging Transducers Chair: Lynn Ewart NUWC	Session P5-A2. Front End and Integrated Devices Chair: Doug Wildes GE Global Research	P5-A3-1 Development of a Rotary-Percussive Ultrasonic Drill for Extraterrestrial Rock Sampling Qiquan Quan¹, Deen Bai¹, Zongquan Deng¹, He Li¹, Yinchao Wang¹ ¹School of Mechatronics Engineering, Harbin Institute of Technology, Harbin, China, ²People's Republic of	

P4-A1-6 SAW Based Rotation Force of a Cylindrical Solid Sergey Biryukov¹, Manfred Wehnacht², Andrei Sotnikov^{1,3}, Hagen Schmidt¹ ¹IFW Dresden, SAWLab Saxony, Dresden, Germany, ²innoxacs, Dippoldiswalde, Germany, ³Joffe Institute, St. Petersburg, Russian Federation	P5-A1-1 Translational Trial Outcomes for Capsule Endoscopy Test Devices Holly Lay¹, Gerard Cummins², Benjamin Cox³, Yongqiang Qiu⁴, Charan Connor¹, Vipin Seethohul⁴, Micheal Turcanu¹, Rachael McPhillips¹, Marc Desmulliez², Eddie Clutton³, Sandy Cochran¹ ¹University of Glasgow, United Kingdom, ²Heriot-Watt University, United Kingdom, ³University of Dundee, United Kingdom, ⁴Micrina Limited, United Kingdom, ⁵University of Edinburgh, United Kingdom	P5-A2-1 Development of Wide Dynamic Range Receiver for Intravascular Ultrasound Imaging Ju-Young Moon^{1,2}, Junsu Lee³, Jin Ho Chang^{3,4} ¹Institute of Integrated Biotechnology, Sogang University, Seoul, Korea, Republic of, ²Department of Biomedical Engineering, Sogang University, Seoul, Korea, Republic of, ³Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of, ⁴Sogang Institutes of Advanced Technology, Sogang University, Seoul, Korea, Republic of	P5-A3-2 Linear Ultrasonic Array Incorporating a Cantor Set Fractal Element Configuration Haoyu Fang¹, Zhen Qiu¹, Anthony Mulholland², Richard O'Leary¹, Anthony Gachagan¹ ¹Electronic & Electrical Engineering, University of Strathclyde, Glasgow, United Kingdom, ²Department of Mathematics, University of Strathclyde, Glasgow, United Kingdom	P5-A3-3 Coupled Model for the Determination of full Electroelastic sets of 1-3 Piezocomposites with Various Pillar Shapes Antoine Balé^{1,2}, Franck Levasort¹, Anne-Christine Hladky-Hennion² ¹GREMAN UMR7347 CNRS, Université de Tours, INSA Centre Val de Loire, Tours, France, ²IEMN-ISEN UMR8520, Université de Lille, CNRS, Centrale Lille, Université de Valenciennes, Lille, France	P5-A3-4 the Directivity of Piezoelectric Matrix Transducer Elements Mounted on an ASIC Maysam Shabanmottlagh¹, Shreyas Raghunathan¹, Verya Dasichin¹, Pieter Kruijzinga^{1,2}, Hendrik J. Vos^{1,2}, Michiel A.P. Pertijs¹, Johannes G. Bosch², Niso de Jong^{1,2}, Martin D. Verweij^{1,2} ¹Technical University of Delft, Netherlands, ²Erasmus MC, Netherlands	P5-A3-5 Numerical Optimization of Ultrasound Transducers by the Linearity of the Phase Spectrum Kenneth K. Andersen¹, Martijn Frijlink¹, Lars Hoff¹ ¹Department of Microsystems, University College of Southeast Norway, Horten, Norway
Session P4-A2. Experimental Characterization Methods for Microacoustics Chair: Amelie Hagelauer University Erlangen-Nuernberg	P5-A1-2 an Optimized High Resolution Radial Ultrasound Endoscope for Digestive Tract Imaging Jue PENG^{1,2}, Xiaozhen Li^{1,2}, Hu Tang^{1,2}, Xiaojian Peng^{1,2}, Siping CHEN^{1,2} ¹National-Regional Key Technology Engineering Laboratory for Medical Ultrasound, Department of Biomedical Engineering, School of Medicine, Shenzhen University, Shenzhen, China, People's Republic of, ²Guangdong Key Laboratory for Biomedical Measurements and Ultrasound Imaging, Department of Biomedical Engineering, School of Medicine, Shenzhen University, Shenzhen, China, People's Republic of	P5-A2-2 Thermal Resistance of Ultrasound Probe Cable Richard Roth¹, Tomonori Watanabe², Takumi Kobayashi², Koki Hirano² ¹Research & Development, Hitachi Cable America, Manchester, NH, USA, ²Hitachi Metals, Japan	P5-A2-4 Design of a Smartphone based Wearable Doppler Device for Continuous Blood Flow Monitoring and Prediction of Abnormalities of Vascular Function in the Common Carotid Artery Junil Park¹, Jinbum Kang¹, Ilsoob Song¹, Yangmo Yoo¹ ¹Electronic Engineering, Sogang University, Seoul, Korea, Republic of	P5-A2-3 New Generation of High Voltage Pulsar for Ultrasound: 16 Channels 5 Levels With Integrated Transmit Beamformer Federico Guanzirio¹, Davide Ghisu¹, Stefano Passi¹, Sandro Rossi¹ ¹STMicroelectronics, Italy	P5-A1-3 Improved CMUT Structure and Method of Operation for Dual-Frequency Acoustic Angiography Marzana M. Mahmud¹, Oluwatemi J. Adelegan¹, Jean L. Sanders¹, Xiao Zhang¹, Faysel Y. Yamaner¹, Paul A. Dayton², Omer Oralkan¹ ¹Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA, ²UNC and NCSU Joint Department of Biomedical Engineering, USA	P5-A2-4 Design of a Smartphone based Wearable Doppler Device for Continuous Blood Flow Monitoring and Prediction of Abnormalities of Vascular Function in the Common Carotid Artery Junil Park¹, Jinbum Kang¹, Ilsoob Song¹, Yangmo Yoo¹ ¹Electronic Engineering, Sogang University, Seoul, Korea, Republic of
P4-A2-1 Temperature Behavior of Sound Velocity of SiON Thin Films Studied by Picosecond Ultrasound Seiya Tsuboi¹, Hirotsugu Ogi¹, Akira Nagakubo¹, Nobutomo Nakamura¹, Satoru Matsuda², Yoshio Kabe² ¹Osaka University, Japan, ²Skyworks Filter Solutions Japan Co., Ltd., Japan	P4-A2-2 Accuracy Analysis and Deduced Strategy of Measurements Applied To Ca₃TaGaSi₂O₁₄ (CTGS) Material Characterization Manfred Wehnacht¹, Andrei Sotnikov², Yunij Suhak³, Holger Fritze³, Hagen Schmidt² ¹innoxacs, Germany, ²IFW Dresden, Germany, ³TU Clausthal-Zellerfeld, Germany					

Oral – Friday, September 8, 2017							
08:00 am – 09:30 am	Session 1D. MIM: Brain and Acoustoelectric Imaging	Session 2D. MSD: Novel Real-Time Implementations	Session 3D. MEL: New Elasticity Methods	Session 4D. MPA: Photoacoustic Reconstruction Approaches And Technical Developments	Session 5D. Acoustic Nonlinearity	Session 6D. Microfluidics	Session 7D. Medical Ultrasound Devices and their Applications
	Chair: Michael Tanter INSERM	Chair: Kai Thomenius Massachusetts Institute of Technology	Chair: Damien Garcia CREATIS	Chair: Pai Chi Li National Taiwan University	Chair: Ken-ya Hashimoto Chiba University	Chair: James Friend University of California, San Diego	Chair: Christine Demore Sunnybrook Research Institute
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room	Empire Room
08:00 am	1D-1 Full 4D Functional Ultrasound Imaging in Rodents Using a Matrix Array Claire Rabut ¹ , Victor Finel ¹ , Mafalda Correia ¹ , Mathieu Pernot ¹ , Thomas Defieux ¹ , Michael Tanter ¹ ¹ INSERM U979, PARIS, France	2D-1 Towards Real-Time Adaptive Color Flow Imaging: a GPU-Optimized Eigen-Based Clutter Filter Core Adrian J. Y. Chee ¹ , Billy Y. S. Yiu ¹ , Alfred C. H. Yu ¹ ¹ Schlegel Research Institute for Aging, University of Waterloo, Waterloo, Canada	3D-1 Single Track Location Comb-Push Ultrasound Shear Elastography (STL- CUSE) Peter Hollender ¹ , Nicholas Bottenius ² , David Bradley ² , Gregg Trahey ^{1,3} ¹ Biomedical Engineering, Duke University, Durham, NC, USA, ² Biomedical Engineering, Duke University, Durham, North Carolina, USA, ³ Radiology, Duke University Medical Center, Durham, North Carolina, USA	4D-1 Aberration Correction in Photoacoustic Imaging Using Paraxial Backpropagation Hans-Martin Schwab ¹ , Andreas Illrig ¹ , Dominic Depke ² , Sven Hermann ² , Michael Schäfers ² , Georg Schmitz ³ ¹ Ruhr-University Bochum, NRW, Germany, ² European Institute for Molecular Imaging, Westfälische Wilhelms-Universität Münster, Germany, ³ Medical Engineering, Ruhr-University Bochum, Germany	5D-1 an Alternative Method for Determining the 2nd Order Nonlinear Coefficients of BAW Resonators Jing Wu ¹ , Dave Feld ¹ , Dong Shim ¹ , Zongliang Cao ¹ ¹ Wireless Semiconductor Division, Broadcom, San Jose, CALIFORNIA, USA	6D-1 Shaping Acoustofluidic Landscapes to Profile and Separate Cells and Sub-micron Particles Per Augustsson ¹ ¹ Biomedical Engineering, Lund University, Lund, Sweden	7D-1 Capsule Ultrasound Device: Characterization and Testing Results Junyi Wang ¹ , Farah Memon ¹ , Gerard Tournai ¹ , Spyridon Baltasvas ¹ , Ji Hoon Jang ¹ , Chienlu Chang ¹ , Morten Fischer Rasmussen ¹ , Eric Olcott ^{1,2} , R. Brooke Jeffrey ² , Amin Arbabi ¹ , Butrus (Pierre) T. Khuri-Yakub ¹ ¹ Stanford University, Stanford, CA, USA, ² School of Medicine, Stanford University, Stanford, CA, USA, ³ Veterans Affairs Palo Alto Health Care System, Palo Alto, CA, USA
08:15 am	1D-2 Imaging of Tissue Displacement During Focused Ultrasound Neuromodulation in Vivo Stephen Lee ¹ , Matthew Downs ² , Niloufar Shahkhez ² , Yang Han ² , Elisa Konofagou ³ ¹ Biomedical Engineering, Columbia University, New York City, New York, USA, ² Biomedical Engineering, Columbia University, USA, ³ Columbia University, USA	2D-2 High Dynamic Range Ultrasound Imaging With Real-Time Filtered-Delay Multiply and Sum Beamforming Alessandro Ramalli ¹ , Alessandro Dallai ¹ , Luca Bassi ¹ , Monica Scaringella ¹ , Enrico Boni ¹ , Gabriel Emile Hine ² , Giulia Matrone ³ , Alessandro Stuart Savoia ³ , Piero Tortoli ¹ ¹ Department of Information Engineering, University of Florence, Florence, Italy, ² Department of Engineering, Roma Tre University, Rome, Italy, ³ Department of Electrical, Computer and Biomedical Engineering, University of Pavia, Pavia, Italy	3D-2 Combination Of Air- Coupled Acoustic Micro- Tapping and Phase Sensitive OCT For 4-D Real- Time, Non-Contact Imaging Of Soft Tissue Elastic Moduli Shaozhen Song ¹ , Lukasz Ambrozinski ² , Soon Joon Yoon ¹ , Mitchell Kirby ¹ , Liang Gao ¹ , Ivan Pelivanov ¹ , David Li ³ , Tueng T. Shen ¹ , Ruikang Wang ¹ , Matthew O'Donnell ¹ ¹ Bioengineering, University of Washington, Seattle, Washington, USA, ² AGH University of Science and Technology, Krakow, Poland, ³ Chemical Engineering, University of Washington, Seattle, Washington, USA, ⁴ Ophthalmology, University of Washington, Seattle, Washington, USA	4D-2 Elevation Resolution Enhancement in 3D Photoacoustic Imaging Using FDMAS Beamforming Abdulrhman Alshaya ¹ , Sevan Harput ¹ , David M. J. Cowell ¹ , James McLaughlan ¹ , Steven Frescat ¹ ¹ University of Leeds, United Kingdom	5D-2 Second Harmonic Generation and Detection in a Rayleigh-Type SAW Structure Werner Ruile ¹ , Markus Mayer ¹ , Andreas Mayer ² , Elena Mayer ² , Vikrant Chauhan ³ , Ingo Bleyl ¹ , Karl Wagner ¹ ¹ RF360 Europe GmbH, Germany, ² Hochschule Offenburg, Germany, ³ Friedrich Alexander Universität Erlangen- Nürnberg, Germany	6D-2 the Fabrication and Integration of a 15 MHz Array Within a Biopsy Needle Rachel McPhillips ^{1,2} , David Watson ¹ , Jun Gao ³ , Marc P.Y. Desmulliez ² , Sarah Vimicombe ² , Sandy Cochran ¹ , Christine Demore ^{3,5} ¹ Medical and Industrial Ultrasound Group, University of Glasgow, Glasgow, United Kingdom, ² Division of Cancer Research, University of Dundee, Dundee, United Kingdom, ³ Multimodal Sensing and Micromanipulation Group, Heriot Watt University, Edinburgh, United Kingdom, ⁴ Physical Sciences, Sunnybrook Research Institute, Toronto, ON, Canada, ⁵ Medical Biophysics, University of Toronto, Toronto, ON, Canada	

08:30 am	1D-3 Laser-Activated Perfluorocarbon Nanodroplets As a New Tool For Image-Guided Blood Brain Barrier Opening and Delivery Of Imaging/Therapeutic Agents To The Brain Kristina Hallam¹, Eleanor Donnelly², Andrei Karpouk², Robin Hartman², Stanislav Emelianov^{1,3} ¹Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, Georgia, USA, ²School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA	2D-3 Real-Time Implementation Of Synthetic Aperture Vector Flow Imaging in a Consumer-Level Tablet Tommaso Di Ianni¹, Thomas K. Kjeldsen², Carlos A. Villagomez Hoyos³, Jesper Mosegaard², Jorgen A. Jensen¹ ¹Technical University of Denmark, Lyngby, Denmark, ²Alexandra Institute, Aarhus, Denmark	3D-3 a Model-Free Approach to Probe Motion Artifacts Suppression for in vivo Imaging with Probe Oscillation Shear Wave Elastography (PROSE) Daniel Mellema¹, Pengfei Song¹, Armando Manduca², Matthew Urban¹, Randall Kinnick², James Greenleaf², Shigao Chen¹ ¹Radiology, Mayo Clinic, Rochester, MN, USA, ²Physiology and Biomedical Engineering, Mayo Clinic, Rochester, MN, USA	4D-3 Visualization Of The Microcirculation in Micro Vessels by Photoacoustic Tomography With High Frequency Spherical Array Transducer Ryo Nagaoka¹, Takuya Tabata¹, Ryo Takagi², Shin Yoshizawa², Shin-ichiro Umemura², Yoshihumi Saijo¹ ¹Biomedical Imaging Laboratory, Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan, ²Ultrasound Enhanced Nanomedicine Laboratory, Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan	5D-3 Lateral Mode Modeling and H2 Prediction of an FBAR Resonator Using an E-BVD Model Tao Yang¹, Zongliang Cao¹, David Feld¹ ¹Broadcom, USA	6D-2 Human Blood Cell Separation Using Bulk Acoustic Waves in a Machined PMMA Microchannel Erin Dawson¹, Kelvin Gregory¹, Irving Oppenheim¹, Kris Dahl² ¹Civil and Environmental Engineering, Carnegie Mellon University, USA, ²Chemical Engineering and BioMedical Engineering, Carnegie Mellon University, USA	7D-3 Design of an Ultrasound Transducer for Continuous Fetal Heartbeat Monitoring Asel Ryspayeva¹, Kenneth K. Andersen¹, Lars Hoff¹, Kristin Inenes¹ ¹Department of Microsystems, University College of Southeast Norway, Borre, Norway
08:45 am	1D-4 Acoustoelectric Imaging of Time-Varying Current Produced by a Clinical Deep Brain Stimulator Chet Preston¹, Yexian Qin², Alex Burton¹, Pier Ingram², Willard Kasoff¹, Russell Witte^{1,2} ¹Biomedical Engineering, University of Arizona, Tucson, AZ, USA, ²Medical Imaging, University of Arizona, Tucson, AZ, USA, ³Surgery, University of Arizona, Tucson, AZ, USA	2D-4 a New Preclinical Ultrasound Imaging Platform for Whole-Body Multiplexed Imaging Tomek Czernuszewicz¹, James Butler¹, Max Haracher¹, Graeme O'Connell¹, Jonathan Perdomo¹, Virgine Papadopoulos¹, Juan Rojas², Paul Dayton², Ryan Gessner¹ ¹SonoVol, Inc., Research Triangle Park, NC, USA, ²Biomedical Engineering, UNC Chapel Hill, NC, USA	3D-4 Multi-row Array Transducer for Elevational Motion Consideration in Strain Imaging Elisabeth Brusseau¹, Adeline Bernard¹, Cyril Meynier², Guillaume Ferri², an Nguyen-Dinh², Olivier Basset¹ ¹CREATIS, Villeurbanne, France, ²VERMON, France	4D-4 Simultaneous Dual-Modality Imaging Of the Vascularity and Gross Anatomy Of the Zebrafish Embryo Trunk Michael Moore^{1,2}, Youdong Wang^{1,3}, Xiao-Yan Wen^{1,4}, Michael Kolos^{1,2} ¹Department of Physics, Ryerson University, Toronto, Ontario, Canada, ²Institute for Biomedical Engineering Science and Technology, St. Michael's Hospital, Toronto, Ontario, Canada, ³Keenan Research Centre, Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Ontario, Canada, ⁴Departments of Medicine and Physiology, University of Toronto, Toronto, Ontario, Canada	5D-4 Improvement of Non-linear Performance in BAW Filters using Balancing Capacitors Susanne Kreuzer¹, Robert Aigner¹, Alexandre Volatier¹ ¹BAW R&D, Qorvo, Apopka, FL, USA	6D-3 Prevent Lithium Dendrite Formation in Rechargeable Batteries Through Surface Acoustic Waves Ann Huang¹, James Friend¹ ¹Center for Medical Devices and Instrumentation, University of California, San Diego, La Jolla, CA, USA	7D-4 Closed-Loop Ultrasonic Power and Communication with Multiple Miniaturized Active Implantable Medical Devices Max Wang¹, Ting Chia Chang¹, Marcus Weber¹, Jayant Charthad¹, Sawson Taheri¹, Amin Arbabian¹ ¹Electrical Engineering, Stanford University, Stanford, CA, USA
09:00 am	1D-5 Coded Excitation With Optimized Inverse Filter For Improving Sensitivity in Acoustoelectric Imaging Hsin-Wu Tseng¹, Yexian Qin¹, Matthew O'Donnell², Russell Witte¹ ¹Medical Imaging, University of Arizona, Tucson, Arizona, USA, ²Bioengineering, University of Washington, Seattle, Washington, USA	2D-5 Ultrasound Neuro-Modulation Chip For Activating the Pyramidal Neurons in Hippocampal CA1 Slices Zhengrong Lin¹, Lili Niu¹, Long Meng¹, Wei Zhou¹, Xiaowei Huang¹, Hairong Zheng¹ ¹Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China, People's Republic of	3D-5 Shear-Wave Imaging Of Viscoelasticity Using Local Impulse Response Identification Ruud J.G. van Sloun¹, Rogier R. Wildeboer², Hessel Wijkstra², Massimo Misch¹ ¹Eindhoven University of Technology, Eindhoven, Netherlands, ²Academic Medical Center, University of Amsterdam, Netherlands	4D-5 Fast Scanning Wide-Field Clutter Elimination in Epi-Optoacoustic Imaging Using Comb-LOVIT Tigran Petrosyan¹, Maria Theodorou², Jeffrey Bamber², Martin Frenz², Michael Jaeger¹ ¹Institute of applied Physics, University of Bern, Switzerland, ²Joint Department of Physics and CRUK Cancer Imaging Centre, Institute of Cancer Research, United Kingdom	5D-5 Influence of Electrode Width of Interdigital Transducer on Third-order Nonlinear Signals of SAW Devices on 42°YX-LiTaO₃ Substrate Ryo Nakagawa¹, Ken-ya Hashimoto² ¹Murata Manufacturing Co., Ltd., Japan, ²Chiba Univ., Japan	6D-4 A New Type Wide-Frequency-Range Shear Viscosity Sensor Using C-Axis Tilted SCAIN Thin Film on Temperature Stable AT-cut Quartz Thick Plate Yui Yamakawa¹, Kohei Sano¹, Rei Karasawa¹, Takahiko Yanagishi^{1,2} ¹Waseda University, Japan, ²JST PRESTO, Japan	7D-5 Regulation of Medical Ultrasound Devices in the United States of America Keith Wear¹ ¹Food and Drug Administration, USA

08:00 am – 09:30 am		Oral – Friday, September 8, 2017				
09:15 am	1D-6 Ultrafast Acoustoelectric Imaging For Direct Mapping Of Cardiac Electrical Activation In Vivo. Beatrice Borthon ¹ , Philippe Mateo ¹ , Nathalie Ialy-Radio ¹ , Mickael Taner ¹ , Mathieu Pernot ¹ , Jean Provost ¹ ¹ Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979, France	2D-6 Ultrasound Imaging Using Transmit Wavefront Synthesis: Spatial and Frequency Diversity Approach to Compounding Parker O'Brien ¹ , Dalong Liu ¹ , Emad Ebbini ¹ ¹ Electrical Engineering, University of Minnesota, Minneapolis, Minnesota, USA	3D-6 Comparison Of Shear Velocity Dispersion In Viscoelastic Phantoms Measured by Ultrasound-Based Shear Wave Elastography and Magnetic Resonance Elastography Matthew Urban ^{1,2} , Jun Chen ¹ , Richard Ehm ¹ ¹ Department of Radiology, Mayo Clinic College of Medicine and Science, Rochester, MN, USA, ² Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine and Science, Rochester, MN, USA	4D-6 Photoacoustic Microscopy Of Lipids At 1.2 and 1.7 μm Using a Pulsed Supercontinuum Laser Nicole Conley ¹ , Sung Won Choi ¹ , Takashi Buma ² ¹ Union College, USA, ² Union College, Schenectady, NY, USA	5D-6 FEM Modeling Of an Entire 5-DT CRF/DMS Filter Victor Plesky ¹ , Julius Koskela ¹ , Balam Willemssen ² , Panagiotis Maniatis ² , Patrick Turner ² , Filip Iliev ² , Bob Hammond ³ , Neal Fenzi ² ¹ GVR Trade SA, GORGIER, Switzerland, ² Resonant Inc., Goleta, California, USA	6D-5 The Influence of a Background Flow on Acoustic Streaming Marcus A. Hintermüller ¹ , Ervin K. Reichel ¹ , Bernhard Jakoby ¹ ¹ Institute for Microelectronics and Microsensors, Johannes Kepler University, Linz, Austria

NOTES

FRIDAY ORAL

Oral – Friday, September 8, 2017						
10:30 am – 12:00 pm	Session 1E. MBF: Cerebrovascular and Microvascular Imaging Chair: Matthew Bruce University of Washington	Session 2E. MSD: Towards Real- Time 3D imaging Chair: Steven Freear Univ. of Leeds	Session 3E. MEL: Elasticity Based Tumor Detection Chair: Kathy Nightingale Duke University	Session 4E. MPA: Clinical and Pre- Clinical models Chair: Michael Kolios Ryerson University	Session 5E. PAT - Acoustic Tweezers and Particle Manipulation Chair: Koen van Dongen Delft University of Technology	Session 6E. Sensors Chair: David Creve Carnegie Mellon University
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room
10:30 am	1E-1 Functional Ultrasound Imaging in Awake Non-Human Primates Performing Voluntary Saccade Alexandre Dizeux¹, Marc Gesnik¹, Nicolas Wattiez², Thomas Defieux¹, Pierre Pouget², Mickael Tanter¹ ¹Institut Langevin, ESPCI, CNRS, INSERM, Paris, France, ²Institut du Cerveau et de la Moelle épinière, INSERM, CNRS, UPMC, Paris, France	2E-1 Next-Generation Ultrasound Research Scanners Design Piero Tortoli¹, Enrico Boni¹, Luca Bassi¹, Alessandro Dallai¹, Francesco Guidi¹, Alessandro Ramalli¹, Stefano Ricci¹ ¹Information Engineering, Università di Firenze, Firenze, Italy	3E-1 Viscoelastic Properties of Breast Masses: a Frequency Dispersion Analysis Using Acoustic Radiation Force Viksit kumar¹, Mahdi Bayat¹, Max Denis¹, Adriana Gregory¹, Jeremy Webb¹, Dana Whaley¹, Mostafa Fatemi¹, Azra Alizad¹ ¹Mayo Clinic, Rochester, MN, USA	4E-1 Preliminary Photoacoustic Imaging Of the Human Radial Artery For Simultaneous Assessment Of Red Blood Cell Aggregation and Oxygen Saturation in Vivo Tae-Hoon Bok^{1,2}, Eno Hysi^{1,2}, Michael Kolios^{1,2} ¹Physics, Ryerson University, Toronto, Ontario, Canada, ²Institute for Biomedical Engineering, Science and Technology, Toronto, Ontario, Canada	5E-1 Variable-Focus Liquid Crystal Lens Using Ultrasound Vibration Yuki Shimizu¹, Daisuke Koyama¹, Akira Emoto¹, Kentaro Nakamura², Mami Matsukawa¹ ¹Faculty of Science and Engineering, Doshisha University, Kyotanabe, Kyoto, Japan, ²Laboratory for Future Interdisciplinary Research of Science and Technology, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan	6E-1 Thermal Wavefront Imaging Using GHz Ultrasonics Mamdouh Abdelmejeed¹, Justin Kuo¹, Amit Lal¹ ¹Electrical and computer engineering, Cornell University, Ithaca, NY, USA
10:45 am	1E-2 Background-Free Visualization of Microvasculature Networks Mahdi Bayat¹, Mostafa Fatemi¹, Azra Alizad² ¹Physiology and Biomedical Engineering, Mayo Clinic, USA, ²Radiology, Mayo Clinic, USA		3E-2 Quasi-Static Elastography and Ultrasound Plane-Wave Imaging: the Effect Of Beam-Forming Strategies on the Accuracy Of Displacement Estimations Gjx A.G.M. Hendriks¹, Chuan Chen¹, Hendrik H.G. Hansen¹, Chris L. de Korte^{1,2} ¹Medical Ultrasound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands, ²Physics of Fluids Group, University of Twente, Enschede, Netherlands	4E-2 Chemical Imaging Of Tumor Microenvironment by Using Multi-Spectral Photoacoustic Imaging Powered by Functional Nanosensors Janggun Jo¹, Chang Lee², Raoul Kopelman², Xueding Wang¹ ¹Department of Biomedical Engineering, University of Michigan, USA, ²Department of Chemistry, University of Michigan, USA	5E-2 Acoustic Wave Directed Assembly of Conjugated Polymers Yuyin Xi¹, David Li¹, Greg Newbloom¹, Matthew O'Donnell², Lilo Pozzo¹ ¹Chemical Engineering, University of Washington, Seattle, Washington, USA, ²Department of Bioengineering, University of Washington, Seattle, USA	6E-2 Directivity of a Planar Fabry-Perot Optical Ultrasound Sensor Danny Ramasawmy¹, James Guggenheim¹, Paul Beard¹, Benjamin Cox¹, Bradley Treeby¹ ¹Medical Physics and Biomedical Engineering, University College London, United Kingdom
						7E-1 Wireless Power Recovery for Internet of Things Devices Using Pre-Charged CMUTs Angad Redhi¹, Butrus Khuri-Yakub¹, Amin Arbabian¹ ¹Electrical Engineering, Stanford University, Stanford, California, USA
						7E-2 a Novel Amplitude Modulated Pulse Inversion Technique for High SNR of Tissue Harmonic Imaging using CMUT Hiroaki Hasegawa¹, Shuntaro Machida¹ ¹Research and Development Group, Hitachi, Ltd., TOKYO, Japan

11:00 am	1E-3 3D Functional Ultrasound Imaging Of the Visual System in the Pigeon Brain Richard Rau¹, Wolfgang Scheffler¹, Markus Belau¹, Pieter Kruizinga¹, Nico de Jong^{2,3}, Johan G. Bosch², Georg Maret¹ ¹University of Konstanz, Germany, ²Thorax Center, Erasmus MC, Rotterdam, Netherlands, ³Faculty of Applied Sciences, Delft University of Technology, Delft, Netherlands	2E-2 a New High Channels Density Ultrasound Platform For Advanced 4D Cardiac Imaging Lorana Petrusca¹, François Varay², Rémi Souchon³, Adeline Bernard⁴, Jean-Yves Chapelon¹, Hervé Liebgott⁴, W Apoutou N'Djin¹, Magalie Viallon^{1,2} ¹Univ Lyon, UJM-Saint-Etienne, INSA, CNRS UMR 5520, INSERM U1206, CREATIS, F-69100, LYON, France, ²Univ Lyon, UCBL, France, ³CNRS UMR 5520, INSERM U1206, CREATIS, F-42023, SAINT-ETIENNE, France, ⁴Inserm, U1032, LabTAU, Lyon, F-69003, France ; Univ Lyon, Université Lyon 1, Lyon, F-69003, France, France	3E-3 Evaluation of the Feasibility of Measuring the Fourth-order Nonlinear Parameter D in Ex vivo Kidneys Tomas Echavarria Bayter¹, Sara Arizabal², Matthew Urban^{2,3} ¹Universidad EIA, Envigado, Antioquia, Colombia, ²Physiology and Biomedical Engineering, Mayo Clinic, Rochester, Minnesota, USA, ³Radiology, Mayo Clinic, Rochester, Minnesota, USA	4E-3 Evaluating the Physiology Of Inflammatory Arthritis With Functional Photoacoustic Imaging Jiangun Jo¹, Guan Xu², Sheeja Francis³, April Marquardt¹, Gandikota Grish¹, Xueding Wang¹ ¹Biomedical Engineering, University of Michigan, USA, ²Radiology, University of Michigan, USA, ³Internal Medicine, University of Michigan, USA	5E-3 a Few Twists Regarding the Momentum of Shaped Beams Gabriel Spalding¹, Patrick Dahl², Zhongyi Yang³, Peter Glynn-Jones⁴, Michael P. MacDonald⁵, Christine Demore⁶, Sandy Cochran⁷ ¹Physics, Illinois Wesleyan University, Bloomington, IL, USA, ²ECE, University of Illinois at Chicago, Chicago, IL, USA, ³School of Physics & Astronomy, University of St Andrews, St Andrews, United Kingdom, ⁴Engineering Sciences, University of Southampton, Southampton, United Kingdom, ⁵Physics & Medicine, University of Dundee, Dundee, United Kingdom, ⁶Sunnybrook Research Institute, University of Toronto, Toronto, Ontario, Canada, ⁷School of Engineering, University of Glasgow, Glasgow, United Kingdom	6E-3 Stability of PtAl₂O₃-Based Electrode Langasite SAW Sensors with Al₂O₃ Capping Layer and Ytria-Stabilized Zirconia Sensing Layer Anin Maskay^{1,2}, Amanda Ayes^{1,2}, Mauricio Pereira da Cunha^{1,2} ¹Department of Electrical and Computer Engineering, University of Maine, Orono, Maine, USA, ²Laboratory for Surface Science and Technology, University of Maine, Orono, Maine, USA	7E-3 a Nonlinear Large Signal Equivalent Circuit Model for a Square CMUT Cell Mohammad Maadi¹, Roger Zemp¹ ¹Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada
11:15 am	1E-4 in vivo Imaging of Blood Flow in Murine Brain using Angular Coherence Methods Marko Jakovljevic¹, Lotfi Abou-Elkacem¹, Dongwoon Hyun¹, Jason Yoon¹, You Li¹, Jeremy Dahl¹ ¹Radiology, Stanford University, Palo Alto, CA, USA	2E-3 Low-cost 3D Ultrasound with Any Probe: a Sensor-based Approach Carl Herickhoff¹, Matthew Morgan², Joshua Broder³, Jeremy Dahl¹ ¹Radiology, Stanford University, Palo Alto, CA, USA, ²Biomedical Engineering, Duke University, Durham, NC, USA, ³Surgery - Emergency Medicine, Duke University Medical Center, Durham, NC, USA	3E-4 Shear Wave Elasticity Imaging of Pancreatic Cancer Tumors Treated with Immunotherapy and Radiotherapy Hexuan Wang¹, Rifat Ahmed¹, Kelli Connolly², Scott Gerber², Brian Pogue³, Marvin Doyley¹ ¹Electrical and Computer Engineering, University of Rochester, USA, ²School of Medicine and Dentistry, University of Rochester, USA, ³Thayer School of Engineering, Dartmouth College, USA	4E-4 Photoacoustic-Ultrasonic Imaging Biomarkers For Treatment-Response Assessment Of Sorafenib in a Rat Model Of Hepatocellular Carcinoma Houa Taghavi¹, Nina Munoz², Mohamed Naser¹, Kirsten Maldonado¹, Charles Kingsley¹, Yugi Tang¹, Katherine Dextraze¹, Rony Avritscher², Richard Bouchard¹ ¹Imaging Physics, the University of Texas MD Anderson Cancer Center, USA, ²Interventional Radiology, the University of Texas MD Anderson Cancer Center, USA	6E-4 Multitouch Touchscreen using Reverberant Lamb Waves Kamyar Firooz¹, Amin Nikoozadeh¹, Thomas E. Carver¹, Butrus T. Khuri-Yakub² ¹EE, Ginzton Lab, Stanford University, STANFORD, CA, USA, ²EE, Stanford university, STANFORD, California, USA	7E-4 Ultra-Narrow Gap CMUT Cell Structure for Highly Sensitive Photoacoustic Imaging Taichi Takezaki¹, Masakazu Kawano¹, Hiroaki Hasegawa¹, Shuntaro Machida¹, Daisuke Ryuzaki¹ ¹Hiachi, Ltd., Japan	
11:30 am	1E-5 Functional Ultrasound (Fus) Allows Measurements Of Cerebral Blood Volume Response Delays Marc Genik¹, Kevin Blaizze², José-Alain Sahel¹, Mathias Fink¹, Thomas Defieux¹, Jean-Luc Gennisson¹, Serge Picaut², Mickaël Tanter¹ ¹Institut Langevin, ESPCI, France, ²Institut de la Vision, Paris, France	2E-4 Performance of a Transcranial Ultrasound Array Designed for 4D Acoustoelectric Brain Imaging in Humans Yexian Qin¹, Pier Ingram¹, Zhen Xu², Matt O'Donnell³, Russell Witte⁴ ¹Department of Medical Imaging, University of Arizona, Tucson, Arizona, USA, ²Department of Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ³Department of Bioengineering, University of Washington, Seattle, Washington, USA, ⁴Department of Biomedical Engineering, University of Arizona, Tucson, Arizona, USA	3E-5 Pancreatic Ductal Adenocarcinoma Detection and Treatment Monitoring in Vivo and in Post-Surgical Human Specimens Using Harmonic Motion Imaging (HMI) Thomas Payen¹, Yang Han¹, Alireza Nabavizadehatsanjani¹, Kenneth P Olive¹, Elisa E Konofagou¹ ¹Columbia University Medical Center, USA	4E-5 in Vivo Photoacoustic Quantification of Brain Tissue Oxygenation for Neonatal Piglet Graded Ischemia Model using Microsphere Administration Jeeun Kang¹, Haichong Zhang¹, Ewa Kulikowicz², Ernest Graham², Raymond Koehler², Emad Bocer^{1,2} ¹Johns Hopkins University, Baltimore, USA, ²Johns Hopkins University School of Medicine, USA	6E-5 Chemical and Biological Sensing using Acoustic Wave Propagation and Nano-scale Phenomena Venkat Bhathanabotla¹ ¹Chemical & Biomedical Engineering, University of South Florida, Tampa, Florida, USA	7E-5 Cavity Edge Insulator Extension in CMUT Cell for High Ultrasound Power Transmission Shuntaro Machida¹, Taichi Takezaki¹, Hiroaki Hasegawa¹, Hiroki Tanaka¹, Daisuke Ryuzaki¹ ¹Hiachi, Ltd., Tokyo, Japan	

Oral – Friday, September 8, 2017

10:30 am – 12:00 pm

11:45 am	1E-6 Visualization of Blood Flow in Brain Tumor in Small Animal with Ultrafast Ultrasound Yi Yang ¹ , Jingjing Xin ¹ , Chenwenbao Hu ¹ , Rui Meng ¹ , Quju Jiang ¹ , Rong Liu ¹ , Hairong Zheng ¹ , Weibao Qiu ¹ ¹ Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China, People's Republic of	2E-5 Acoustical Compressive 3D Imaging with a Single Sensor Pieter Kruizinga ¹ , Pim van der Meulen ² , Frits Mastik ¹ , Andrejs Fedjajevs ² , Geert Springeling ¹ , Nico de Jong ^{1,3} , Geert Leus ² , Johannes G. Bosch ¹ ¹ Thorax Center - Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ² Circuits and Systems – EEMCS, Delft University of Technology, Netherlands, ³ Faculty of Applied Sciences, Delft University of Technology, Netherlands	3E-6 Viscoelastic Response (VisR)-Derived Relative Elasticity and Relative Viscosity Reflect Tissue Elasticity and Viscosity: in Silico and Experimental Demonstration in Liver Md Murad Hossain ¹ , Timothy Nichols ^{2,3} , Elizabeth Merricks ³ , Caterina Gallippi ¹ ¹ Department of Biomedical Engineering, University of North Carolina, Chapel Hill, Chapel Hill, North Carolina, USA, ² Department of Medicine, University of North Carolina, Chapel Hill, USA, ³ Department of Pathology and Laboratory Medicine, University of North Carolina, Chapel Hill, USA	4E-6 Endocavity Ultrasound and Photoacoustic Imaging System to Evaluate Fetal Brain Perfusion and Oxygenation: Preliminary ex vivo studies Yan Yan ¹ , Maryam Basji ¹ , Edgar Hernandez-Andrade ^{2,3} , Sonia Hassan ^{2,3} , Mohammad Mehrmohammadi ¹ ¹ Department of Biomedical Engineering, Wayne State University, Detroit, Michigan, USA, ² Department of Obstetrics and Gynecology, Wayne State University, Detroit, Michigan, USA, ³ Perinatology Research Branch, Wayne State University, Detroit, Michigan, USA	5E-5 Noncontact Manipulation and Evaluation Of HeLa Cells Using Ultrasound Vibration Tomohiro Otuska ¹ , Ryota Yamamoto ¹ , Daisuke Koyama ² , Mami Matsukawa ² ¹ Faculty of Life and Medical Sciences, Doshisha University, Japan, ² Faculty of Science and Engineering, Doshisha University, Japan	7E-6 an Optically Transparent Air-Coupled Capacitive Micromachined Ultrasonic Transducer (CMUT) Fabricated Using Adhesive Bonding Xiao Zhang ¹ , Feysel Y. Yamaner ¹ , Oluwatemi Adelekan ¹ , Omer Oralkan ¹ ¹ Electrical and Computer Engineering, North Carolina State University, Raleigh, North Carolina, USA
-----------------	---	--	--	--	---	---

NOTES

FRIDAY ORAL

Oral – Friday, September 8, 2017							
01:30 pm – 03:00 pm	Session 1F. MTH: Brain Chair: David Meloddim INSERM	Session 2F. MIM: Fast Cardiac Imaging: Methods and Applications Chair: Jan Dhooze University of Leuven	Session 3F. MEL: Elastography in Anisotropic Tissue Chair: Matthew Urban Mayo Clinic	Session 4F. MPA: Molecular Imaging and Photoacoustic Contrast Agents Chair: Stuart Foster Univ of Toronto	Session 5F. Optimization of Quality Factor of Acoustic Resonators Chair: Marc Sotol Qorvo	Session 6F. NDE and Industrial Applications Chair: Lawrence Kessler Sonoscan Inc.	Session 7F. Ultrasound Electronics and Systems Chair: David Cowell University of Leeds
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room	Empire Room
01:30 pm	1F-1 Targeted Brain BRICHOS Domain Delivery Induced by Focused Ultrasound For the Treatment Of Alzheimer's Disease Carlos Sierra ¹ , Lorena Galan- Acosta ² , Jenny Presto ² , Per Nilsson ² , Janne Johansson ² , Elisa Konoigaku ^{1,3} ¹ Biomedical Engineering, Columbia University, New York, NY, USA, ² Neurobiology, Karolinska Institutet, Huddinge, Sweden, ³ Radiology, Columbia University, New York, NY, USA	2F-1 Ultrafast Ultrasound Imaging Of the Heart: From 2D To 3D Quantitative Imaging Of the Myocardium and Blood Flows Mathieu Pernot ¹ ¹ Institut Langevin, INSERM, ESPCI, Paris, France	3F-1 Estimating Degree of Mechanical Anisotropy in Healthy and Dysrophic Rectus Femoris of Boys using ViE ² Ultrasound, in Vivo Christopher Moore ^{1,2} , Melissa Caughy ³ , Diane Meyer ¹ , Regina Emmett ⁴ , Manisha Chopra ² , James Howard Jr. ^{3,5} , Caterina Gallippi ^{1,2} ¹ Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA, ² Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, ³ Department of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, ⁴ Rehabilitation Services, University of North Carolina Hospital, Chapel Hill, NC, USA, ⁵ Department of Neurology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA	4F-1 Photoacoustic Assessment of Nanoparticles Distribution Pattern in the Mouse Brain following Blood-Brain Barrier (BBB) Disruption Johann Le Floch ¹ , Hoang D. Lu ² , Christine Demore ¹ , Robert K. Prud'homme ² , Kullervo Hynynen ¹ , F. Stuart Foster ¹ ¹ Physical Sciences, Sunnybrook Research Institute, TORONTO, Ontario, Canada, ² Princeton University, USA	5F-1 Solidly Mounted Plate Mode Resonators Based on 42°-48° YX LT cuts: Loss Mechanisms Natalya Naumenko ¹ ¹ National University of Science and Technology "MISIS", Moscow, Russian Federation	6F-1 Long Distance Measurement Over 30m by High-Speed Non-Contact Acoustic Inspection Method Using Acoustic Irradiation Induced Vibration Tsuneoyoshi Sugimoto ¹ , Kazuko Sugimoto ¹ , Itsuki Uchi ¹ , Takeyuki Oodaira ¹ , Akihiko Kawakami ² , Noriyuki Utagawa ³ ¹ Graduate School of Engineering, Toin University of Yokohama, Yokohama, Japan, ² Honsyu- Shikoku Bridge Expressway Co., Ltd., Japan, ³ SatoKogyo Co., Ltd., Japan	7F-1 a Front-End ASIC for Miniature 3-D Ultrasound Probes with In-Probe Receive Digitization Chao Chen ¹ , Zhao Chen ¹ , Deep Bera ² , Emile Ndoohut ³ , Zu-yao Chang ¹ , Hendrik Vos ^{2,3} , Johan Bosch ² , Martin Verweij ^{2,3} , Nico de Jong ^{2,3} , Michiel Perijns ¹ ¹ Electronic Instrumentation Lab., Delft University of Technology, Delft, Netherlands, ² Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ³ Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands
01:45 pm	1F-2 Ultrasound-Induced Delivery Of Erlotinib To the Brain Is Not Enough To Counter Efflux Pumps Matthieu Gerstenmayer ¹ , Sebastien Goutal ^{2,3} , Sylvain Auvit ² , Fabien Caillie ² , Irene Buvat ² , Dominique Vodovar ² , Geraldine Pottier ² , Michel Bottlaender ^{1,2} , Nicolas Tournier ² , Benoit Larrat ¹ ¹ NeuroSpin, CEA, France, ² SHEFI, CEA, France, ³ MIRcen, CEA, France	2F-2 Shear Wave Attenuation Quantification in Viscoelastic Transverse Isotropic Soft Tissue Using Shear Wave Elastography Eliana Budelli ^{1,2} , Javier Brum ³ , Patricia Lena ¹ , Mickael Tanti ² , Carlos Negreira ¹ , Jean-Luc Gennisson ¹ ¹ Instituto de Ingenieria - Facultad de Ingenieria - Universidad de la Republica, Uruguay, ² Institut Langevin, Ordes at Images, ESPCI ParisTech, CNRS UMR 7587, INSERM U979, France, ³ Laboratorio de Acústica Ultrasonora, Facultad de Ciencias - Universidad de la Republica, Uruguay	3F-2 Sono-Photoacoustic Imaging using Polypyrrole Coated Phase-Change Contrast Agents Soon Joon Yoon ¹ , David Li ² , Ivan Polyvanov ¹ , Martin Frenz ² , Thomas Matula ¹ , Lilo Pozzo ² , Matthew O'Donnell ¹ ¹ Department of Bioengineering, University of Washington, Seattle, Washington, USA, ² Department of Chemical Engineering, University of Washington, Seattle, Washington, USA, ³ Institute of Applied Physics, University of Bern, Switzerland, ⁴ Center for Industrial and Medical Ultrasound, University of Washington, Seattle, Washington, USA	4F-2 I.H.P.-SAW Technology and Its Application To Micro Acoustic Components Tsutomu Takai ¹ , Hideki Iwamoto ¹ , Yuchi Takamine ¹ , Takeshi Nakao ¹ , Masahiro Hiramoto ¹ , Masayuki Koshino ² ¹ Thin Film Engineering Dept., Murata Manufacturing Co., Ltd., Kyoto, Japan, ² Murata Manufacturing Co., Ltd., Kyoto, Japan	5F-2 A Hardware/Software Co-Design Architecture for Ultrasonic Flaw Detection with Hidden Markov Model and Wavelet Transform Kushal Virupakshappa ¹ , Erdal Orakul ¹ ¹ ECE Department, Illinois Institute of Technology, Chicago, IL, USA	6F-2 a Front-end Integrated Circuit for a 2D Capacitive Micromachined Ultrasound Transducer (CMUT) Array for a Noninvasive Neural Interface to the Retina Chunqun Seok ¹ , Xun Wu ¹ , F. Yalcin Yamaner ² , Omer Oralkan ¹ ¹ Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA	

02:00 pm	1F-3 Pulsed Focused Ultrasound Effects on the Brain Interstitium Victor Frenkel¹, David Hersh², Pavlos Anastasiadis¹, Ali Mohammadabadi¹, Jinena Dancy², Jeffrey Winkles³, Asaf Keller⁴, Graeme Woodworth², Anthony Kim² ¹Diagnostic Radiology and Nuclear Medicine, University of Maryland School of Medicine, Baltimore, Maryland, USA, ²Neurosurgery, University of Maryland School of Medicine, Baltimore, Maryland, USA, ³Surgery, University of Maryland School of Medicine, Baltimore, Maryland, USA, ⁴Anatomy and Neurobiology, University of Maryland School of Medicine, Baltimore, Maryland, USA	2F-2 Comparison of Motion Corrected Multi-Plane-Transmit Beamforming and 3D Diverging Wave Compounding: a Simulation Study Yinran Chen¹, Jianwen Luo¹, Jan D'hooge² ¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, ²People's Republic of China, ³Laboratory of Cardiovascular Imaging and Dynamics, Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium	3F-3 Ex Vivo and in Vivo Demonstration of 2D Viscoelastic Response (VisR) Anisotropy Imaging in Skeletal Muscle Christopher Moore^{1,2}, MD Murad Hossain¹, Caterina Gallipoli^{1,2} ¹Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA, ²Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA	4F-3 Gold Picking Emulsions as a Phase-change Contrast Agent for Photoacoustic Imaging Yi-Ting Lee¹, David Li^{1,1}, Matthew O'Donnell^{1,2}, Thomas Matula¹, Lilo Pozzo¹ ¹Chemical Engineering, University of Washington, Seattle, Washington, USA, ²Bioengineering, University of Washington, Washington, USA, ³Center for Industrial and Medical Ultrasound, University of Washington, USA	5F-3 Piston Mode Operation of SAW Resonators Using Coupling Between Multiple SAW Modes Benfeng Zhang^{1,2}, Tao Han¹, Gongbin Tang^{1,2}, Xinyi Li^{1,2,3}, Yun Huang^{1,2}, Tatsuya Omori^{1,2}, Ken-ya Hashimoto² ¹School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, China, ²People's Republic of China, ³Graduate School of Engineering, Chiba University, Japan, ⁴School of Electronic Engineering, University of Electronic Science and Technology of China, China, ⁵People's Republic of	6F-3 Contactless Ultrasonic Wavefield Imaging of Concrete Elements Using an Automated Scanning MEMS Ultrasonic Sensor Array Homin Song¹, John Popovics¹, Jongwoong Park² ¹Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA, ²School of Civil and Environmental Engineering, Chung-Ang University, Seoul, Korea, Republic of	7F-3 a High-Frequency and High-Frame-Rate Ultrasound Imaging System Design for Capacitive Micromachined Ultrasonic Transducer Arrays on an FPGA Evaluation Board Xun Wu¹, Jean Sanders¹, Xiao Zhang¹, F. Yalcin Yamaner¹, Omer Oralkan¹ ¹Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, North Carolina, USA
02:15 pm	1F-4 Local Field Potentials Responses to Ultrasonic Neuromodulation on Freely Moving Mouse Guofeng Li^{1,2}, Min Su¹, Qijun Jiang¹, Huixia Zhao¹, Wenbin Yan¹, Weibao Qiu¹, Hairong Zheng¹ ¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, ²People's Republic of, ³Guangdong Medical University, China, ⁴People's Republic of	2F-3 3D Ultrafast Imaging Of the Heart: Application To the Mapping Of Electromechanical Activation Victor Finel¹, Philippe Mateo¹, Clement Papadacci¹, Jean Provost¹, Mickael Tanter¹, Mathieu Pernot¹ ¹Institut Langevin, ESPCI ParisTech, CNRS UMR 7587, INSERM U979, Université Paris 7, Paris, France	3F-4 in Vivo Photoacoustic Detection of Lymph Node Metastasis using Glycol-Chitosan-Coated Gold Nanoparticles Diego Duman^{1,2}, In-Cheol Sun^{1,2}, Stanislav Emelianov^{1,2}, Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA, ²School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA	4F-4 in Vivo Photoacoustic Detection of Lymph Node Metastasis using Glycol-Chitosan-Coated Gold Nanoparticles Diego Duman^{1,2}, In-Cheol Sun^{1,2}, Stanislav Emelianov^{1,2}, Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA, ²School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA	5F-4 One-Dimensional Model for the Ultrasonic Response of Resin-Filled Gaps in Automated Tape Layup Composites Patrick Johnston¹, Peter Juarez² ¹Nondestructive Evaluation Sciences Branch, NASA Langley Research Center, Hampton, VA, USA, ²Nondestructive Evaluation Sciences Branch, NASA Langley Research Center, USA	6F-4 Towards 3D Ultrasound Imaging Of the Carotid Artery Using a Programmable and Tileable Matrix Array Pieter Kruizinga^{1,2}, Eunchul Kang¹, Maysam Shabanimolaghi², Qing Ding³, Emile Niothout², Zu Yao Chang³, Hendrik J. Vos^{1,2} ¹Johannes G. Bosch¹, Martin D. Verweij^{1,2}, Michel A.P. Petrijs³, Nico de Jong^{1,2} ¹Thorax Center - Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ²Lab. of Acoustical Wavefield Imaging, Delft University of Technology, Netherlands, ³Electronic Instrumentation Lab, Delft University of Technology, Netherlands	

Oral – Friday, September 8, 2017								
01:30 pm – 03:00 pm	02:30 pm	02:45 pm	2F-4 Volumetric Imaging Of Fast Mechanical Waves in the Heart Using a Clinical Ultrasound System: a Feasibility Study	3F-5 in Vivo Mechanical Anisotropy Assessment in Renal Parenchyma Using ARFI Peak Displacement	4F-5 Optically and Acoustically Triggerable Sub-micron Phase-change Contrast Agents for Enhanced Photoacoustic and Ultrasound Imaging	5F-4 Acoustic Radiation from ends of IDT in Synchronous Resonators	6F-5 The Structure Design of Two-dimensional Graphene-based Acoustic Arrays	7F-5 Performance Evaluation of ASICs for CMUT-Based Portable Ultrasound Scanners
Sophie V Morse ¹ , Antonios N Pouloupoulos ² , Tiffany Chan ¹ , Julien Lin ¹ , Matthew Copping ¹ , Nicholas J Long ¹ , James J Choi ¹ ¹ Imperial College London, United Kingdom, ² Columbia University Medical Campus, USA	Pedro Santos ^{1,2} , Lasse Lovstakken ³ , Egil Samset ^{2,4} , Jan D'hooge ¹ ¹ Department of Cardiovascular Sciences, KU Leuven, Belgium, ² GE Vingmed Ultrasound, GE Healthcare, Norway, ³ Department of Circulation and Medical Imaging, NTNU, Norway, ⁴ Center for Cardiological Innovation, Norway	Matthieu Gerstenmayer ¹ , Erwan Selingue ¹ , Françoise Geoffroy ¹ , Sébastien Meriaux ¹ , Benoit Larad ¹ ¹ MIDAS, NeuroSpin, CEA, France	David Lei ¹ , Matthew Bird ¹ , Jay Shah ² , Naomi Gerber ¹ , Hannah Tandon ² , Seelil DeStefano ¹ , Siddhartha Sikdar ¹ ¹ George Mason University, USA, ² National Institute of Health, USA	Yanjie Wang ^{1,2} , Maurice Pasternak ³ , Michael Kolos ^{1,2} ¹ Physics Department, Ryerson University, Toronto, Canada, ² Institute for Biomedical Engineering, Science and Technology (IBEST), Toronto, Canada, ³ Biological Sciences Department, Sunnybrook Research Institute, Toronto, Canada	Shengtao Lin ¹ , Anant Shah ² , Javier Hernández-Gil ³ , Antonio Stanzola ⁴ , Bethany Harris ³ , Terry Matsunaga ⁴ , Nicholas Long ⁴ , Jeffrey Bamber ² , Meng-Xing Tang ¹ ¹ Department of Bioengineering, Imperial College London, London, United Kingdom, ² Joint Department of Physics and Cancer Imaging Centre, the Institute of Cancer Research and the Royal Marsden NHS Foundation Trust, London, United Kingdom, ³ Department of Chemistry, Imperial College London, London, United Kingdom, ⁴ Department of Medical Imaging, University of Arizona, Tucson, Arizona, USA	Victor Plesky ¹ , Julius Koskela ¹ , Panagiotis Maniatis ² , Balam Iliev ² , Bob Hammond ² , Neal Farg ² ¹ GVV Trade SA, GORGIER, Switzerland, ² Resonant Inc., Goleta, California, USA	Kailhua Cao ¹ , Xiaodong Ye ¹ , Xinhua Guo ¹ ¹ School of Mechanical and Electronic Engineering, Wuhan University of Technology, Wuhan, China, People's Republic of China	Pere Llimós Muntal ¹ , Søren Elmin Diederichsen ² , Jørgen Arendt Jensen ³ , Ivan Harald Holger Jørgensen ⁴ , Erik Vilain Thomsen ⁵ ¹ Department of Electrical Engineering, Electronics Group, Technical University of Denmark, Kongens Lyngby, Denmark, ² Department of Micro- and Nanotechnology, Technical University of Denmark, Kongens Lyngby, Denmark, ³ Department of Electrical Engineering, Center for Fast Ultrasound Imaging, Technical University of Denmark, Kongens Lyngby, Denmark
02:45 pm			2F-5 3D Rendering Of Electromechanical Wave Imaging For the Characterization and Optimization Of Biventricular Pacing Conditions in Heart Failure Patients Undergoing Cardiac Resynchronization Therapy	3F-6 Characterization of Local Muscle Fiber Anisotropy Using Shear Wave Elastography in Patients with Chronic Myofascial Pain	4F-6 Photoacoustic Detection Of Targeted Cancer Cells Using Gold Nanorod Loaded PLGA Nanoparticles	5F-5 Improvement of Quality Factor by Hetero Acoustic Layer (HAL) Structure SAW combining LiTaO3 Thin Plate and Quartz Substrate	6F-6 Acoustic Hybrid Sensor For BDV Monitoring in Insulating Oil	7F-6 Supply-Inverted Bipolar Pulser and Tx/Rx Switch for CMUTs Capable of Tolerating Voltage Levels above Process Limit
			Lea Melki ¹ , Elhan Bunting ¹ , Daniel Wang ² , Pierre Nauléau ¹ , Elisa Konofagou ^{1,3} ¹ Biomedical Engineering, Columbia University, New York, NY, USA, ² Medicine - Division of Cardiology, Columbia University, New York, NY, USA, ³ Radiology, Columbia University, New York, NY, USA	David Lei ¹ , Matthew Bird ¹ , Jay Shah ² , Naomi Gerber ¹ , Hannah Tandon ² , Seelil DeStefano ¹ , Siddhartha Sikdar ¹ ¹ George Mason University, USA, ² National Institute of Health, USA	Yanjie Wang ^{1,2} , Maurice Pasternak ³ , Michael Kolos ^{1,2} ¹ Physics Department, Ryerson University, Toronto, Canada, ² Institute for Biomedical Engineering, Science and Technology (IBEST), Toronto, Canada, ³ Biological Sciences Department, Sunnybrook Research Institute, Toronto, Canada	Michio Kadota ¹ , Shuji Tanaka ² ¹ Graduate School of Engineering, Tohoku university, Sendai, Miyagi prefecture, Japan, ² Graduate School of Engineering, Tohoku University, sendai, Miyagi prefecture, Japan	Matthias Wrobel ¹ ¹ Ludwigs-Maximilians-University, Munich, Germany	Gwangrok Jung ¹ , Amirabbas Prouz ¹ , Coskun Tekes ² , F. Levent Degertekin ² , Maysam Ghovanloo ¹ School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA, ² School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA

NOTES

FRIDAY ORAL

Oral – Friday, September 8, 2017						
04:00 pm – 05:30 pm	Session 1G. MTH: Blood-Brain-Barrier	Session 2G. MEL: Carotid Elastography	Session 3G. MTC: in vivo Soft Tissue Characterization	Session 4G. MCA: New US Contrast Agents for Imaging and Therapy	Session 5G. PGP - General Physical Acoustics	Session 6G. Signal Processing
	Chair: Charles Cain Univ of Michigan	Chair: Chris de Korte Radboud University Medical Center Nijmegen	Chair: Roberto Lavarello Pontificia Universidad Católica del Perú	Chair: Paul Dayton Univ. North Carolina/NCSU	Chair: Robert Thalhhammer Broadcom Ltd	Chair: Erdal Oruklu Illinois Institute of Technology
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room
4:00 pm	1G-1 Breaching the Blood-Brain Barrier Noninvasively Kullervo Hynynen ¹ ¹ University of Toronto, Toronto, Ontario, Canada	2G-1 Estimation Of the 2D Motion Induced by an Acoustic Radiation Force Push Pulse in Transverse Cross-Sections Of Vessel-Mimicking Phantoms Using High Frequency Ultrasound Compounding Hendrik Hansen ¹ , Gijs Hendriks ¹ , Sten Fekkes ¹ , Chris de Korte ^{1,2} ¹ Medical ultrasound imaging center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands, ² Physics of Fluids Group, University of Twente, Enschede, Netherlands	3G-1 In-vivo Quantitative Ultrasound Evaluation of Carotid Plaque Catherine Steffel ^{1,2} , Kayvan Samimi ² , Tony Varghese ² , Shahriar Salamat ^{1,3} , Stephanie Wilbrand ⁴ , Robert Dempsey ⁵ , Carol Mitchell ⁵ ¹ Cardiovascular Research Center, University of Wisconsin-Madison School of Medicine & Public Health, Madison, Wisconsin, USA, ² Medical Physics, University of Wisconsin-Madison School of Medicine & Public Health, Madison, WI, USA, ³ Neurological Surgery, University of Wisconsin-Madison School of Medicine & Public Health, Madison, WI, USA, ⁴ Pathology and Laboratory Medicine, University of Wisconsin-Madison School of Medicine & Public Health, Madison, WI, USA, ⁵ Medicine, Cardiovascular Division, University of Wisconsin-Madison School of Medicine & Public Health, Madison, WI, USA	4G-1 Sensitization Of Hypoxic Tumors To Radiation Therapy Using Ultrasound Sensitive Oxygen Microbubbles John Eisenbrey ¹ , Rawan Shraim ² , Ji-Bin Liu ¹ , Jingzhi Li ¹ , Maria Stanczak ¹ , Brian Oeffinger ² , Flemming Forsberg ¹ , Patrick O'Kane ¹ , Margaret Wheatley ² ¹ Radiology, Thomas Jefferson University, USA, ² Biomedical Engineering and Health Sciences, Drexel University, USA, ³ Vascular Ultrasonography, Xuanwu Hospital, Capital Medical University, China, People's Republic of	5G-1 Design Of Multi-Frequency Acoustic Kinofoms Michael Brown ¹ , Ben Cox ¹ , Bradley Treeby ¹ ¹ University College London, London, United Kingdom	6G-1 Implementation Issues of 3D SAFT in Time and Frequency Domain for the Fast Inspection of Heavy Plates Fabian Krieg ^{1,2} , Jan Kirchhof ² , Florian Römer ² , Alexander Ihlow ² , Christian Grandinetti ¹ , Giovanni Del Galdo ^{2,3} , Ahmad Osman ^{1,4} ¹ NDT of Components and Assemblies, Fraunhofer Institute for Non Destructive Testing IZFP, Saarbrücken, Germany, ² Institute for Information Technology, Technische Universität Ilmenau, Ilmenau, Germany, ³ Fraunhofer Institute for Integrated Circuits IIS, Germany, ⁴ Hochschule für Technik und Wirtschaft des Saarlandes, Germany
4:15 pm		2G-2 Guided Wave Elastography of Pressurized Artery in both Longitudinal and Transverse Sections: Validation in Phantom Experiments Qiong He ¹ , Guoyang Li ² , Yanping Cao ² , Jianwen Luo ¹ ¹ Department of Biomedical Engineering, Tsinghua University, China, People's Republic of, ² Department of Engineering Mechanics, Tsinghua University, China, People's Republic of	3G-2 In-Vivo Quantitative Assessment Of Pulmonary Edema and Fibrosis Using Ultrasound Multiple Scattering. Kaustav Mohanty ¹ , Marie Muller ¹ , Thomas Egan ² , John Blackwell ² ¹ Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, North Carolina, USA, ² Division of Cardiothoracic Surgery, Dept. of Surgery, University of North Carolina, Chapel Hill, North Carolina, USA	4G-2 a Flow Focusing Microfluidic Device With an Integrated Micro Coulter Particle Counter For Sequential Production and Characterization Of Size Tunable Microbubbles J.M. Robert Riekel ¹ , Adam J. Dixon ¹ , Alexander L. Klibanov ¹ , John A. Hossack ¹ ¹ Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA	5G-2 Dirac Cone Dispersion of Lamb Waves in Plates David Stobbe ¹ , Todd Murray ¹ ¹ University of Colorado Boulder, Boulder, Colorado, USA	6G-2 Impulse Response Estimation Method For Ultrasound Arrays Pim van der Meulen ¹ , Pieter Kruizinga ² , Johannes G Bosch ² , Geert Leus ¹ ¹ Circuits and Systems, Delft University of Technology, Netherlands, ² Biomedical Engineering, Erasmus Medical Center, Netherlands
						7G-2 Mechanical Wobbling High Intensity Focused Ultrasound (HIFU) Transducer For Volumetric Ultrasound Guided Treatment Of Uterine Fibroids Euna Choi ¹ , Wonseok Lee ² , Jeongdong Woo ² , Yongrae Roh ¹ ¹ School of Mechanical Engineering, Kyungpook National University, Daegu, Korea, Republic of, ² Probe Development Team, Alplinton Medical Systems Co., Ltd., Seoul, Korea, Republic of

4:30 pm	1G-2 Blood-Brain Barrier Disruption For The Delivery Of Non-Infectious Viral Vectors and Proteins, Preliminary Study Josquin Foiret¹, Hua Zhang¹, Brett Z. Frie¹, Lisa Mahaktian¹, Sarah Tam¹, David J. Segal¹, Katherine W. Ferrara¹ ¹Department of Biomedical Engineering, UC Davis, Davis, CA, USA, ²MIND Institute, Department of Biochemistry and Molecular Medicine, UC Davis, Davis, CA, USA	2G-3 Visualizing Angle-Independent Principal Strains in the Longitudinal View Of the Carotid Artery: Phantom and in Vivo Evaluation Rohit Nayak¹, Giovanni Schifitto², Marvin Doyle¹ ¹Department of Electrical and Computer Engineering, University of Rochester, Rochester, NY, USA, ²Department of Neurology, University of Rochester, Rochester, NY, USA	3G-3 In-Vivo Characterization Of Angiogenesis in Tumor-Bearing Rats Using Multiple Scattering Of Ultrasound Aditya Joshi¹, Sarah Shelton², Virginie Papadopoulos¹, Brooks Lindsey², Gianmarco Pinton¹, Paul Dayton², Marie Muller¹ ¹Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, North Carolina, USA, ²UNC - NCSU Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA	4G-3 Accelerated Clearance Of Ultrasound Contrast Agents Containing Polyethylene Glycol (PEG) is Associated With a PEG-Specific Immune Response Samantha M. Fix¹, A. Gloria Nyankima², Morgan D. McSweeney¹, James K. Tsutsui², Samuel K. Lai¹, Paul A. Dayton² ¹Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, ²Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill and North Carolina State University, Chapel Hill, North Carolina, USA, ³Department of Pediatrics, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA	5G-3 Staircase-Free Acoustic Sources For Grid-Based Models Of Wave Propagation Elliott Wise¹, Ben Cox¹, Bradley Treeby¹ ¹Medical Physics and Biomedical Engineering, University College London, United Kingdom	6G-3 Improvement of the Total Focusing Method Using an Inverse Problem Approach Even Carcreff¹, Nans Laroche¹, Sébastien Bourguignon², Dominique Bracomier¹ ¹The Phased Array Company, USA, ²LS2N, France	7G-3 Preliminary Investigation Of Dual Mode CMUT Probe For Ultrasound Image Guided HIFU Therapy Christopher Bawiec^{1,2}, W. Apoutou N'Djin², Guillaume Bouchoux², Nicolas Senémond², Nicolas Guillen¹, Jean-Yves Chapelon^{1,2} ¹Inserm, U1032, LabTau, Lyon, Rhone-Alpes, France, ²Univ Lyon, Université Lyon 1, Lyon, France, ³Vernon, Tours, France, ⁴Adap IMS, Vaulx-en-Velin, France
4:45 pm	1G-3 MRI Guided Ultrasound-Mediated Blood-Barrier Opening in Non-Human Primates Using Passive Cavitation Detection-Based Feedback Control Hermes Kamimura^{1,2}, Julien Flament^{1,3}, Julien Valette¹, Andrea Cafarelli¹, Romina Badin¹, Philippe Hantraye¹, Benoit Larrat² ¹Molecular Imaging Research Center, CEA, France, ²Neurospin, CEA, France, ³INSERM, France, ⁴The BiRobotics Institute, Scuola Superiore Sant'Anna, Italy	2G-4 Measurement Of Carotid Artery Viscoelasticity in Young and Older Individuals Using Acoustic Radiation Force-Induced Waves and Fourier Analysis Matthew Urban^{1,2}, Murthy Guddati³, Wilkins Aquino⁴, James Greenleaf² ¹Department of Radiology, Mayo Clinic College of Medicine and Science, Rochester, MN, USA, ²Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine and Science, Rochester, MN, USA, ³Department of Civil Engineering, North Carolina State University, USA, ⁴Department of Civil and Environmental Engineering, Duke University, USA	3G-4 Contrast and Quantitative Ultrasound Mapping of Heterogeneous Tumor Function and Structure Jerome Griffon¹, Delphine Le Guillou-Buffello¹, Oumeima Laïfi¹, Maxime Doury¹, Alexandre Dizeux¹, Michele Lamuraglia², Michael Oelze³, S. Lori Bridal¹ ¹Laboratoire d'Imagerie Biomedicale, UPMC, CNRS, INSERM, Paris, France, ²Beaumont Hospital, AP-HP, Paris, France, ³Bioacoustics Research Laboratory, University of Illinois at Urbana-Champaign, Urbana-Champaign, USA	4G-4 Altering Lipid Shell Composition Enables the Tunability of Perfluorocarbon Nanodroplets Steven Yarmoska¹, Heechul Yoon², Stanislav Emelianov^{1,2} ¹Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA, ²School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA	5G-4 Blind Deconvolution Of a Hydrophone With a Bubble-Collapse Shock Wave Kristoffer Johansen¹, Jae Il Lee Song¹, Paul Prentice¹ ¹CarLab, School of Engineering, University of Glasgow, Glasgow, United Kingdom	6G-4 Wave Retrieval From Temporally Undersampled Data Soroush Sabeti¹, Joel B. Harley¹ ¹Electrical and Computer Engineering, University of Utah, Salt Lake City, Utah, USA	7G-4 A Fully-Automated Insonation System for in Vitro Investigations of Ultrasound-Mediated Targeted Drug Delivery Fraser Stewart¹, Yangminghao Liu², Pierre Roncin³, Jan P. Newton¹, Zhihong Huang², Inke Nätthke¹, Sandy Cochran⁴ ¹School of Life Sciences, University of Dundee, Dundee, United Kingdom, ²School of Science and Engineering, University of Dundee, Dundee, United Kingdom, ³School of Engineering, ESEO, Angers, France, ⁴School of Engineering, University of Glasgow, Glasgow, United Kingdom

Oral – Friday, September 8, 2017						
04:00 pm – 05:30 pm	5:00 pm	7G-5 Optical Fiber Laser-Generated-Focused-Ultrasound Transducers for Intravascular Therapies	6G-5 Accelerated Guided Waves Inspection Using Compressive Sensing and Local Wavenumber Domain Analysis	5G-5 Investigations on the Correlation Between Particle Velocity Distribution and PMMA Heating Effect Induced by High-Intensity Focused Ultrasound	4G-5 High Frame Rate Ultrasound Imaging of Vaporised Sub-micron Phase-Change Contrast Agents	3G-5 Volumetric Contrast-Enhanced Ultrasound Parametric Maps and Texture Feature Extraction for Tissue Treatment Response Characterization
Tara Kugelmann ¹ , Camilo Acosta ¹ , Shutao Wang ¹ , Marilena Karakatsani ¹ , Dritan Agalliu ² , Elisa Konofagou ³ ¹ Biomedical Engineering, Columbia University, New York, New York, USA, ² Pathology and Cell Biology, Columbia University, New York, New York, USA, ³ Radiology, Columbia University, New York, New York, USA	Marvin Doyle ¹ , Rohit Nayak ² , Nancy Carson ³ , Giovanni Schifitto ⁴ ¹ Electrical and Computer Engineering, University of Rochester, Rochester, NY, USA, ² Electrical and Computer Engineering, University of Rochester, Rochester, NY, USA, ³ Medical Center, University of Rochester, Rochester, NY, USA, ⁴ Neurology, University of Rochester, Rochester, USA	Jinwook Kim ¹ , Wei-Yi Chang ¹ , Huaiyu Wu ¹ , Xiaoning Jiang ¹ , ¹ Mechanical Engineering, North Carolina State University, Raleigh, North Carolina, USA	Yasamin Keshmiri Esfandabadi ¹ , Alessandro Marzani ² , Nicola Testoni ¹ , Luca De Marchi ¹ ¹ Department of Electrical, Electronic and Information Engineering, University of Bologna, Italy, ² Department of Civil, Chemical, Environmental, and Materials Engineering, University of Bologna, Italy	Coralie Koo Sin Lin ¹ , Lukas Oehm ² , Marko Liebler ¹ , Holger Brchm ¹ , Klaus-Vitold Jenderka ³ , Jens-Peter Majschak ² , Bernd Wilke ³ ¹ Robert Bosch GmbH, Germany, ² Chair of Processing Machines and Processing Technology, Dresden University of Technology, Germany, ³ Department of Engineering and Natural Sciences, Merseburg University of Applied Sciences, Merseburg, Saxony-Anhalt, Germany	Shengtao Lin ¹ , Ge Zhang ¹ , Chee Hau Leow ¹ , Meng-Xing Tang ¹ ¹ Department of Bioengineering, Imperial College London, London, United Kingdom	Ahmed El Kaffas ¹ , Assaf Hoogi ¹ , Albert Tseng ¹ , Jianhua Zhou ¹ , Huijun Wang ¹ , Hersh Sagreya ¹ , Dimitre Hristov ² , Daniel Rubin ¹ , Juergen Willmann ¹ ¹ Radiology, Stanford University, USA, ² Radiation Oncology, Stanford University, USA
1G-4 Analysis of Focused Ultrasound with Microbubbles Induced BBB Disruption on Tight Junction Morphology	2G-5 Elastographic Imaging Of the Carotid Arteries Of HIV Infected Patients With and Without Cardiovascular Disease: a Pilot Study	7G-6 Development of Forward-Looking Ultrasound Transducers for Microbubble-Aided Intravascular Ultrasound-Enhanced Thrombolysis	6G-6 Mbit/Second Communication through a Rock Bolt Using Ultrasound	5G-6 Validity of the Keller-Miksis equation for “non-stable” cavitation and the acoustic emissions generated	4G-6 Improved Selection of Optimal Acoustic Output Power for Subharmonic Aided Pressure Estimation of Portal Hypertension	3G-6 Motion Correction For 3D Ultrafast Ultrasound: Application To 3D Backscattered Tensor Imaging Of Soft Tissues Anisotropy
Ryan Jones ^{1,2} , Lulu Deng ² , Kogee Leung ² , Dailan McMahon ^{1,2} , Meaghan O'Reilly ^{1,2} , Kullervo Hynynen ^{2,3} ¹ Department of Medical Biophysics, University of Toronto, Canada, ² Physical Sciences Platform, Sunnybrook Research Institute, Canada, ³ Department of Medical Biophysics and Institute of Biomaterials and Biomedical Engineering, University of Toronto, Canada	Gabriela Torres ¹ , Tomasz J. Czemuszewicz ² , Jonathon W. Homeister ² , Mark A. Farber ³ , Caterina M. Gallipoli ¹ ¹ Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill, USA, ² Department of Pathology and Laboratory Medicine, University of North Carolina at Chapel Hill, USA, ³ Department of Surgery, University of North Carolina at Chapel Hill, USA	Jinwook Kim ¹ , Brooks D. Lindsey ² , Wei-Yi Chang ¹ , Paul A. Dayton ² , Xiaoning Jiang ¹ ¹ Mechanical Engineering, North Carolina State University, Raleigh, North Carolina, USA, ² Biomedical Engineering, University of North Carolina, Chapel Hill, North Carolina, USA	Johan E. Carlson ¹ , Jaap van de Beek ¹ , Medhat Mohamad ¹ ¹ Signals and Systems, Lulea University of Technology, Lulea, Sweden	Kristoffer Johansen ¹ , Jae Hee Song ¹ , Paul Pentrice ¹ ¹ ConLab, School of Engineering, University of Glasgow, Glasgow, United Kingdom	Ipsitha Gupta ^{1,2} , John Eisenbrey ¹ , Maria Stanczak ¹ , Colette Shaw ¹ , Susan Schultz ² , Susan Shammim-Noori ¹ , Stephen Hunt ¹ , Michael Soulen ¹ , Jonathan Fenkel ¹ , Chandra Sehgal ³ , Kirk Wallace ³ , Flemming Forsberg ¹ ¹ Radiology, Thomas Jefferson University, Philadelphia, PA, USA, ² School of Biomedical Engineering, Sciences and Health Systems, Drexel University, Philadelphia, PA, USA, ³ Radiology, Hospital of the University of Pennsylvania, Philadelphia, PA, USA, ⁴ Gastroenterology & Hepatology, Thomas Jefferson University, Philadelphia, PA, USA, ⁵ GE Global Research, Niskayuna, NY, USA	Victor Finel ¹ , Clement Papadacci ¹ , Jean Provost ¹ , Mickael Tanter ¹ , Mathieu Pernot ¹ ¹ Institut Langevin, ESPCI ParisTech, CNRS UMR 7587, INSERM U979, Université Paris 7, Paris, France

NOTES

FRIDAY ORAL

Poster --- Friday, September 8, 2017

Exhibit Hall

Session P1-B1.
MBB: 3D

Chair: Mathias Bo Stuart
Technical University of Denmark

Session P1-B2.
MBE: Biological Effects and
Dosimetry

Chair: Shin-ichiro Umemura
Tohoku University

P1-B2-8 Design and Characterization of a
Research Phantom for Shock-Wave
Enhanced Irradiations in High Intensity
Focused Ultrasound Therapy

Wayne Kreider¹, Barbara Dumire¹, John Kuciewicz², Christopher Hunter¹, Tatiana Khokhlova³, George Schade⁴, Adam Maxwell¹, Oleg Sapozhnikov^{1,4}, Lawrence Crum¹, Vera Khokhlova^{1,4}
¹CIMU, Applied Physics Laboratory, University of Washington, USA, ²Gasroenterology, University of Washington School of Medicine, USA, ³Urology, University of Washington School of Medicine, USA, ⁴Physics Faculty, Moscow State University, Russian Federation

P1-B3-3 Quantitative 3D Assessment of
Flow in a Printed Hydrogel Vascular
Phantom

Samantha Paulsen¹, James Long^{1,2}, Bagrat Grigoryan¹, Wolfgang Stefan¹, Jordan Miller¹, Richard Bouchard¹
¹Rice University, USA, ²University of Texas MD Anderson Cancer Center, USA

P1-B4-1 Engineering Acoustic
Biomolecules as Dynamic Molecular
Sensors for Ultrasound

Anupama Lakshmanan¹, Suehita P. Ney², David Marasca², Mikhail G. Shapiro²
¹Biology and Biological Engineering, California Institute of Technology, Pasadena, CA, USA, ²Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA, USA

P1-B1-1 Improved Focusing Method for 3-D
Imaging Using Row-Column Addressed 2-D
Arrays

Hamed Bourzari¹, Mathias Engholm², Mathias Stuart¹, Erik Thomsen², Jørgen Arendt Jensen¹
¹Electrical Engineering, Technical University of Denmark, Lyngby, Denmark, ²Micro- and Nanotechnology, Technical University of Denmark, Lyngby, Denmark

P1-B2-1 Non-contact High Frequency
Ultrasound Microbeam Stimulation for
Determination of Invasion Potential of
Breast Cancer Cells

Luchao Qi¹, Ming Qian¹, Runkang Chen¹, Yan Tan¹, Hairong Zheng¹
¹Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of

P1-B2-9 a Reliable and Convenient
Acoustic Field Characterization Method of a
Clinical MR-HIFU System Using Electronic
Beam-Steering

Satya VVN Kothapalli¹, Ari Partanen², Lifen Zhu³, H. Michael Gach⁴, Michael Altman⁵, Hong Chen⁶
¹Biomedical Engineering, Washington University in Saint Louis, Saint Louis, Missouri, USA, ²Clinical Science MR Therapy, Philips, Andover, Massachusetts, USA, ³Biomedical Engineering, Washington University in Saint Louis, Saint Louis, USA, ⁴Radiation Oncology, Washington University in Saint Louis, Saint Louis, USA, ⁵Biomedical Engineering and Radiation Oncology, Washington University in Saint Louis, Saint Louis, USA, ⁶Biomedical Engineering and Radiation Oncology, Washington University in Saint Louis, Saint Louis, USA

P1-B3-4 Real-Time Assimilation and
Regularization of Ultrasound Blood Velocity
Measurements Using Smoothed Particle
Hydrodynamics

Thomas Groni¹, Abigail Swillens², Patrick Segers³, Lasse Lovstakken¹
¹Department of Circulation and Medical Imaging, Trondheim, Norway, ²Barco Healthcare, Ghent, Belgium, ³Biomedica, Ghent University, Ghent, Belgium

P1-B4-2 Effect of the Surfactant Pluronic on
the Stability of Lipid-Stabilized
Perfluorocarbon Nanobubbles

Leinitza Nieves¹, Christopher Hernandez², Jacob Lilly¹, Joey Mangadiao¹, Rigoberto Advincula¹, Agata Exner^{1,2}
¹Radiology, Case Western Reserve University, Cleveland, Ohio, USA, ²Biomedical Engineering, Case Western Reserve University, Cleveland, Ohio, USA, ³Macromolecular Science and Engineering, Case Western Reserve University, Cleveland, Ohio, USA

P1-B1-2 3D Diverging Waves With 2D
Sparse Arrays: a Feasibility Study

Emmanuel Roux¹, François Varray², Lorena Petrusca³, Christian Cachard², Piero Tortoli¹, Hervé Liebgott²
¹Department of Information Engineering, Università Degli Studi di Firenze, Firenze, France, ²Univ Lyon, Inserm, CREATIS UMR 5220, U1206, F-69100, Villeurbanne, France

P1-B2-2 Precise Control of Neuronal
Activity by Ultrasound: Fundamentals and
Toolkits

Zhihai Qiu¹, Jinghui Guo², Yaoheng Yang¹, Jingyao Wang¹, Rui Zhang¹, Jiejun Zhu¹, Shashwati Kala¹, Hsiao Chang Chan², Lei Sun¹
¹Interdisciplinary Division of Biomedical Engineering, the Hong Kong Polytechnic University, Hong Kong, ²School of Biomedical Sciences, the Chinese University of Hong Kong, Hong Kong

P1-B2-10 Real-Time Investigation of
Irreversible Cell Membrane Damage Induced
by Acoustic Droplet Vaporization

Dui Qin¹, Lei Zhang¹, Nan Chang¹, Yujin Zong¹, Mingxi Wan¹, Yi Feng¹
¹Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, China, People's Republic of

P1-B3-5 Adaptive Clutter Filtering Based on
Tissue Vector Velocities

Ingvild Kinn Ekroll^{1,2}, Jørgen Avidal¹
¹Centre for Innovative Ultrasound Solutions (CIUS), Norwegian University of Science and Technology (NTNU), Trondheim, Norway, ²Kirurgisk klinikk, St Olav's Hospital, Trondheim, Norway

P1-B4-3 Effect of Boundary Constraints on
the Vaporization Threshold of Low Boiling-
Point Phase-Change Contrast Agents

Juan Rojas¹, Paul Dayton^{1,2}
¹Biomedical Engineering, the University of North Carolina and North Carolina State University, USA, ²The University of North Carolina Lineberger Comprehensive Cancer Center, USA

P1-B1-3 Fourier-Based 3D Ultrafast
Ultrasound Imaging With Diverging Waves:
In Vitro Experiment Validation

Miaomiao Zhang¹, François Varray², Lorena Petrusca³, Denis Friboulet¹, Hervé Liebgott¹, Olivier Bernard¹
¹Univ Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, UJM-Saint Etienne, CNRS, Inserm, CREATIS, Villeurbanne, France

P1-B2-3 FUS Cavitation Induced Injury and
Localized Atherosclerosis Plaques of
Rabbit Abdominal Arterial Endothelium

Yujin Zong¹, Gang Liu¹, Jiangying Long¹, Lei Zhang¹, Di Zhou¹, Yi Feng¹, Mingxi Wan¹
¹Department of Biomedical Engineering, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of

P1-B2-11 On-Chip Spatial Controlled Single
Cell Sonoporation by Vibrating Targeted
Microbubbles

Ruoyan Meng^{1,2}, Yuchen Wang^{1,2}, Xuelian Shen¹, Wei Zhou¹, Kaiyue Wang^{1,2}, Lili Niu¹, Long Meng¹, Hairong Zheng¹
¹Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institute of Advanced Technology Chinese Academy of Sciences, China, People's Republic of, ²School of Sino-Dutch Biomedical and Information Engineering, Northeastern University, China, People's Republic of

P1-B3-6 Fast and Robust Spatiotemporal
Microvessel Clutter Filtering with
Randomized Singular Value Decomposition
(rSVD) and Randomized Spatial
Downsampling

Pengfei Song¹, Joshua D. Trzasko¹, Armando Manduca¹, Bo Qiang², Ramanathan Kadirvel¹, David F. Kallmes¹, Shigao Chen¹
¹Department of Radiology, Mayo Clinic College of Medicine, Rochester, Minnesota, USA, ²Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA

P1-B4-4 Microfluidic Shrinking of
Microbubble Contrast Agents

Vaskar Gnyawali^{1,2}, Byeong-U Moon^{1,2}, Jennifer Kieda^{2,3}, Rafi Karshafian^{2,4}, Michael C. Kolos^{2,4}, Scott S. H. Tsai^{1,2}
¹Department of Mechanical and Industrial Engineering, Ryerson University, Toronto, Canada, ²Institute for Biomedical Engineering, Science and Technology (IBEST), Toronto, Canada, ³Department of Electrical and Computer Engineering, Ryerson University, Toronto, Canada, ⁴Department of Physics, Ryerson University, Toronto, Canada

P1-B1-4 High Volume Rate 3D Ultrasound Imaging Based on Synthetic Aperture Sequential Beamforming Jian Zhou¹, Siyuan Wei¹, Richard Sampson², Rungroj Jintanethasawat³, Oliver D. Krippligans³, J. Brian Fowlkes³, Thomas F. Wenisch³, Chaitali Chakrabarti¹ ¹School of Electrical, Computer and Energy Engineering, Arizona State University, Tempe, Arizona, USA, ²Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, Michigan, USA, ³Department of Biomedical Engineering and Radiology, University of Michigan, Ann Arbor, Michigan, USA	P1-B2-4 HIFU Waveform Measurement at Clinical Amplitude Levels: Primary Hydrophone Calibration, Waveform Deconvolution and Uncertainty Estimation Martin Weber¹, Volker Wilkens¹ ¹1.62 Ultrasonics, Physikalisch-Technische Bundesanstalt, Braunschweig, Lower Saxony, Germany	P1-B2-12 Heterogeneous Responses of Reactive Oxygen Species in the Sonoporated Cells At the Single-Cell Level Gaixia Jia¹, Tao Han¹, Lin Xu², Alfred C.H. Yu³, Peng Qin¹ ¹Department of Instrument Science and Engineering, Shanghai Jiao Tong University, China, ²People's Republic of China, ³Institute of Plant Physiology and Ecology, Shanghai Institutes for Biological Sciences, Chinese Acad. China, People's Republic of China, ⁴Department of Electrical and Computer Engineering, University of Waterloo, Canada	P1-B3-7 Adaptive Clutter Filtering in High Frame Rate 3D Coronary Imaging Cristiana Goffetto¹, Hans Torp¹, Ingvald Kim Ekroll^{1,2} ¹Centre for Innovative Ultrasound Solutions (CIUS), Dept. Circulation and Medical Imaging, Norwegian University of Science and Technology (NTNU), Norway, ²St. Olavs Hospital, Norway	P1-B4-5 On-Demand Gas-Generating Nanoparticles As an Ultrasound Imaging Contrast Agent In-Cheol Sun¹, Heechul Yoon², Stanislaw Emelantsev^{1,2} ¹Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University, School of Medicine, Atlanta, Georgia, USA, ²School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA	P1-B3-8 Energy based clutter filtering for vector flow imaging Carlos Armando Villagómez Hoyos¹, Jonas Jensen¹, Caroline Eversen², Kristoffer Lindskov Hansen², Michael Bachmann Nielsen², Jørgen Arendt Jensen¹ ¹Electrical Engineering, Technical University of Denmark, Kgs. Lyngby, Denmark, ²Department of Radiology, Copenhagen University Hospital, Copenhagen, Denmark	P1-B3-9 an Improved Spread-Spectrum Method for High-Frame-Rate Color Doppler Ultrasound Imaging Omar Mansouri^{1,2}, Tamie L. Poepping^{1,4}, James C. Lacerfield^{1,4} ¹Electrical & Computer Engineering, Western University, London, Ontario, Canada, ²Robarts Research Institute, Western University, London, Ontario, Canada, ³Physics & Astronomy, Western University, London, Ontario, Canada, ⁴Medical Biophysics, Western University, London, Ontario, Canada	P1-B2-5 Bioeffects of Acoustic Droplet Vaporization-Generated Bubbles in Tissue Yi-Ju Ho¹, Yi-Tim Lin¹, Chih-Kuang Yeh¹ ¹Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Taiwan	P1-B2-6 Controlled Permeation of Cell Membrane by a Single-Bubble Stable Cavitation in a Microfluidic Device Yuchen Wang^{1,2}, Ruoyan Meng¹, Wei Zhou¹, Kaiyue Wang¹, Lili Niu¹, Long Meng¹, Haitong Zheng¹ ¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, Guangdong, China, ²People's Republic of China, ³Northeastern University, shenyang, liaoning, China, ⁴People's Republic of China	P1-B2-7 Three Dimensional Pressure Field Measurement of Focused Ultrasound by Optical Phase Contrast Method Shin Yoshizawa¹, Takuya Nakamura², Yohei Sasaki¹, Maxime Lafond³, Shin-ichiro Umemura² ¹Communications Engineering, Tohoku University, Sendai, Japan, ²Biomedical Engineering, Tohoku University, Japan	P1-B1-5 Real-Time Anatomical Imaging of the Heart on an Experimental Ultrasound System João Pedrosa¹, Vangush Komini¹, Jan Dhooze¹ ¹KU Leuven, Belgium	P1-B1-6 Multi-Line Transmission for 3d Ultrasound Imaging: an Experimental Study Emilia Badescu¹, Denis Buioreanu¹, Lorena Petrusca¹, Denis Friboutet¹, Hervé Liebgott¹ ¹Univ-Lyon, INSA-Lyon, UCBL1, UJM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, Lyon, France	P1-B1-7 the Influence of Speckle Statistics on Contrast Metrics in Ultrasound Imaging Stine M. Hvierten¹, Ole Marius Hoel Rindal¹, Alfonso Rodriguez-Molares², Andreas Austeng¹ ¹Department of Informatics, University of Oslo, Oslo, Norway, ²Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway	P1-B4-7 Experimental Investigation on Chemical Kinetics Between Biotinylated Microbubbles and Streptavidin Yuta Otsuki¹, Kenji Yoshida², Yoshiaki Watanabe¹ ¹Doshisha Univ, Japan, ²Chiba Univ, Japan	P1-B4-8 a Preliminary Study of Amorphous Calcium Carbonate-Doxorubicin Nanoparticles (ACC-DOX NPs) for Ultrasound Theraonstics Pai-Hua Chiang¹, Qiaofeng Jin¹, Chih-Kuang Yeh¹ ¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Taiwan
--	--	---	--	---	---	---	--	---	---	---	---	--	---	---

9:30 am – 4:00 pm

Poster --- Friday, September 8, 2017

Exhibit Hall

P1-B4-9 Magneto-Motive Ultrasound Imaging Using Superparamagnetic Ferrite Nanoparticles With Enhanced Saturation Magnetization Synthesized by a Simple Coprecipitation Method Yaser Hadadian¹, Ana Paula Ramos², Diego Sampaio¹, Antonio Carneiro¹, Theo Pavan¹ ¹Department of Physics, University of Sao Paulo, Ribeirão Preto, SP, Brazil, ²Department of Chemistry, University of Sao Paulo, Ribeirão Preto, SP, Brazil	P1-B5-7 Comparison Study of Displacement Estimation Methods for Microwave Ablation Procedures using Electrode Displacement Elastography Robert Polman^{1,2}, Jingfeng Jiang¹, Wenjun Yang¹, Timothy Zientek², Marc Alexander², Kelly Wergin¹, Meghan Laker¹, James Louis Hristova¹, Fred T Lee Jr.¹, Tony Varghese^{1,2} ¹Department of Medical Physics, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA, ²Department of Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, Wisconsin, USA, ³Department of Biomedical Engineering, Michigan Technological University, Houghton, Michigan, USA, ⁴Department of Radiology, University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin, USA	P1-B6-3 Adaptation of the Acoustic Angiography Technique for Use with a Capacitive Micromachined Ultrasound Transducer (CMUT) Isabel G. Newsome¹, Juan D. Rojas¹, Virginie Papadopoulos¹, Fangle Lin¹, Anthony Novell^{1,2}, Omer Oralkan³, Paul A. Dayton¹ ¹Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill and North Carolina State University, North Carolina, USA, ²Imagerie et Cerveau, UMR Inserm 930-Université François Rabelais de Tours, France, ³Department of Electrical and Computer Engineering, North Carolina State University, North Carolina, USA	P1-B7-6 Low-power Ultrasound Imaging Systems Using Time Delay Spectrometry Elizabeth Tarbox¹, Nima Akhlaghi², Ananya Dhawan³, Paul Gammell¹, Pang Chinnai¹, Siddhartha Sikdar¹ ¹Bioengineering, George Mason University, USA, ²Electrical Engineering, George Mason University, USA, ³Computer Science, George Mason University, USA, ⁴Gammell Applied Technologies LLC, USA	P1-B8-4 Photoacoustic Visual Servoing of Needle Tips to Improve Biopsy Targeting in Obese Patients Joshua Shubert¹, Muyinatu Bell¹ ¹Electrical and Computer Engineering, Johns Hopkins University, Baltimore, Maryland, USA
Session P1-B5. MEL: Emerging Methods for Elasticity Imaging Chair: Muyinatu Lediju Bell Johns Hopkins University	P1-B5-8 Performance Comparison of Optical Flow and Block Matching Methods for Strain Estimation in Spatial Angular Compounding With Plane Wave Zhi Liu¹, Qiong He¹, Jianwen Luo¹ ¹Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of	P1-B6-4 Super-Resolution Ultrasound Imaging of the Microvasculature in Skeletal Muscle: a New Tool in Diabetes Research Debabrata Ghosh^{1,2}, Jun Peng², Shashank Srini^{1,2}, Robert Mattrey², Philip Shaul², Kenneth Hoyt^{1,2} ¹University of Texas at Dallas, USA, ²University of Texas Southwestern Medical Center, USA	P1-B7-7 Monitoring Treatment Response in Patient-Derived Orthotopic Glioblastoma Xenograft Models With Multi-Parametric Ultrasound and Photoacoustic Imaging Srivallabha Malladi¹, Megumi Ichikawa¹, Tayyaba Hasan¹ ¹Harvard Medical School, USA	P1-B8-5 Design and Development of a full-ring Ultrasound and Photoacoustic Tomography System for Breast Cancer Imaging Subail Alshahrani¹, Yan Yan¹, Ivan Avrutsky², Mark Anastasio³, Eugene Malyarenko⁴, Neb Duric⁴, Mohammad Mehdi Mohammadi¹ ¹Biomedical Engineering, Wayne State University, Detroit, MI, USA, ²Electrical & Computer Engineering, Wayne State University, Detroit, MI, USA, ³United States Minor Outlying Islands, ⁴Department of Bioengineering, Washington University in St. Louis, St. Louis, MO, USA, ⁵Karmanos Cancer Institute, Detroit, MI, USA
P1-B5-1 Air-coupled ARF-based Excitation of Broadband Mechanical Waves for Dynamic Elastography Liang Gao¹, Piotr Kijanka², Mitchell Kirby¹, Ivan Pelivanov¹, Lukasz Ambrozinski², Shaozhen Song¹, David Li³, Soon Joon Yoon¹, Ruikang Wang^{1,4}, Matthew O'Donnell¹ ¹Department of Bioengineering, University of Washington, Seattle, WA, USA, ²AGH University of Science and Technology, Krakow, Poland, ³Department of Chemical Engineering, University of Washington, Seattle, WA, USA, ⁴Department of Ophthalmology, University of Washington, Seattle, WA, USA	P1-B5-9 Constructive Shearwave Imaging: Feasibility and Improvements in SNR Anna Knight¹, Peter Hollender¹, Kathryn Nightingale¹, Mark Palmeri¹ ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA	Session P1-B7. MIM: Experimental Ultrasound Systems and Applications Chair: Marcin Lewandowski Institute of Fundamental Technological Research	P1-B7-8 Design Considerations and Performance of a Variable Gain, Variable Bandwidth Signal Processing Circuit for Acoustoelectric Imaging Tushar Kanti Bera¹, Pier Ingram¹, Yexian Qin¹, Russell S. Witte¹ ¹Department of Medical Imaging, University of Arizona, Tucson	P1-B8-6 Structurally Enhanced Contrast in Photoacoustic Microscopy with F-Mode Imaging Michael Moore^{1,2}, Michael Kolos^{1,2} ¹Department of Physics, Ryerson University, Toronto, Ontario, Canada, ²Institute for Biomedical Engineering Science and Technology, St. Michael's Hospital, Toronto, Ontario, Canada
P1-B5-2 Experimental validation of simultaneous excitation of orthogonal coded push pulses for fast shear wave elastography Takuya Matsumoto¹, Kengo Kondo¹, Takeshi Namita¹, Makoto Yanakawa¹, Tsuyoshi Shima¹ ¹Graduate School of Medicine, Kyoto University, Kyoto, Japan	P1-B5-10 Tomographic Shear Wave Imaging: Feasibility Study Yung-Shao Yang¹, Pei-Yu Chao², Pai-Chi Li¹ ¹National Taiwan University, Taipei, Taiwan, ²National Taiwan University, Taiwan	P1-B7-1 Sentinel Lymph Node Imaging Using Ultrafast Cyclic Pulsed Magnetomotive Ultrasound: Small Animal Study Yu-Chun Chang¹, Ming-Chen Lu¹, Zhong-Hang Wei¹, Meng-Lin Li¹ ¹National Tsing Hua University, Taiwan	P1-B7-9 Imaging in Situ Human Kidney Stones with the Color Doppler Ultrasound Twinkling Artifact Juliana Simon¹, Barbara Dumire², Bryan Cunitz², Oleg Sapozhnikov^{2,3}, Jeffrey Thiel², James Holm¹, Michael Bailey² ¹Graduate Program in Acoustics, the Pennsylvania State University, University Park, PA, USA, ²Center for Industrial and Medical Ultrasound, Applied Physics Laboratory, University of Washington, Seattle, WA, USA, ³Department of Acoustics, Physics Faculty, Moscow State University, Moscow, Russian Federation, ⁴Center for Hyperbaric Medicine, Virginia Mason Medical Center, Seattle, WA, USA	P1-B8-7 Glycerol in Oil-Based Phantom With Improved Performance for Photoacoustic Imaging Felipe Grillo¹, Luciana Cabrelli¹, Diego Sampaio¹, Antonio Carneiro¹, Theo Pavan¹ ¹Department of Physics, University of Sao Paulo, Ribeirão Preto, SP, Brazil

PL-B5-3 Clutter Filter Wave Imaging (CFWI): a New Way To Visualize and Detect Mechanical Waves Propagation. Sebastian Saltes¹, Svein Arne Aase², Tore Bjastad², Lasse Lovstakken¹, Hans Torp¹ ¹Norwegian University of Science and Technology, Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Norway, ²GE Vingmed Ultrasound, Norway	PL-B5-11 Beyond Diffraction Limit in Shear Wave Imaging Stefan Catheline¹, Ali Zargani¹, Chadi Zemzemi¹, Loic Dumizeau¹, Remi Souchon¹ ¹INSERM, University of Lyon, France	PL-B7-2 Influence of Naturally Occurring Tissue Movements on Magnetomotive Nanoparticles for Magnetic Iron Oxide Targeting Michael Fink¹, Helmut Erment¹, Stefan Lye², Christoph Alexiou² ¹Sensor Technology, Friedrich-Alexander-University Erlangen-Nuremberg, Erlangen, Germany, ²Section of Experimental Oncology and Nanomedicine, University Hospital Erlangen, Germany	Session P1-B8. MPA: Techninal Developments in Photoacoustic Imaging Chair: Kang Kim University of Pittsburgh	PL-B8-8 Photoacoustic Speckle: Theoretical Basis and Experimental Evidence Eno Hysi^{1,2}, Michael J. Moore^{1,2}, Subhajit Kamakar¹, Ratan K. Saha¹, Eric M. Strohman¹, Michael C. Kolos^{1,2} ¹Physics, Ryerson University, Toronto, ON, Canada, ²Institute for Biomedical Engineering, Science and Technology, Toronto, Ontario, Canada, ³University Science Instrumentation Centre, the University of Burdwan, Bardhaman, India, ⁴Department of Applied Sciences, Indian Institute of Information Technology Allahabad, Jhalwa, Allahabad, India, ⁵Institute of Biomaterials & Biomedical Engineering, Mechanical and Industrial Engineering, The University of Toronto
PL-B5-4 a New Method for Shear Wave Speed Estimation in Anisotropic Tissues Using Wavelet Transform and Dynamic Programming Pak-Hoi Yeung¹, Wei-Ning Lee^{1,2} ¹Medical Engineering Programme, the University of Hong Kong, Hong Kong, ²Department of Electrical and Electronic Engineering, the University of Hong Kong, Hong Kong	Session P1-B6. MIM: Contrast Chair: Kenneth Hoyt University of Texas at Dallas	PL-B7-3 Towards Real-Time Magnetomotive Ultrasound Imaging Maria Evertsson¹, Alessandro Ramalli¹, Theo Z. Pavan¹, Luciana C. Cabrelli¹, Roger Andersson^{1,4}, Magnus Cinihs², Piero Toroli², Tomas Jansson^{1,4} ¹Department of Clinical Sciences Lund, Biomedical Engineering, Lund University, Sweden, ²Department of Information Engineering, University of Florence, Florence, Italy, ³Department of Physics, University of Sao Paulo, Ribeirao Preto, SP, Brazil, ⁴Medical Services, Skane University Hospital, Lund, Sweden, ⁵Department of Biomedical Engineering, Faculty of Engineering LTH at Lund University, Lund, Sweden	PL-B8-1 Handheld Optical-Resolution Photoacoustic Microscopy Probe for Preclinical Application Kyungin Park¹, Jin Young Kim², Seungwan Jeon², Sungjo Park², Ki Jong Lee², Hyung Ham Kim², Chulhong Kim² ¹School of Interdisciplinary Bioscience and Bioengineering, Pohang University of Science and Technology, Pohang, Korea, Republic of, ²Department of Creative IT Engineering, Pohang University of Science and Technology, Pohang, Korea, Republic of	Session P1-B9. MSD: Novel Medical Systems Chair: Sevan Harput Imperial College London
PL-B5-5 a Novel Tracking Strategy for Single Tracking Location Shear Wave Elasticity Imaging Rifat Ahmed¹, Stephen A. McAleavey^{1,2}, Marvin M. Doyley^{1,2} ¹Department of Electrical and Computer Engineering, University of Rochester, New York, USA, ²Department of Biomedical Engineering, University of Rochester, New York, USA	PL-B6-1 Transcranial Dual Frequency Ultrasound for Contrast Enhanced Ultrafast Brain Functional Imaging – an in Vitro Feasibility Study Thomas Robins¹, Mengxing Tang¹ ¹Bioengineering, Imperial College London, London, United Kingdom	PL-B7-4 Ultrasound Imaging of Muscle Contraction of the Tibialis Anterior in Patients With Facioscapulohumeral Dystrophy Kaj Gijbterse¹, Ramme Goscink², Saskia Lasseche², Maartje Nijssen¹, André Sprengers^{1,4}, Niso Verdonschot^{1,4}, Nens van Alfen¹, Chris de Korte³ ¹Orthopaedics, Radboud university medical center, Nijmegen, Netherlands, ²Department of Neurology, Radboud university medical center, Netherlands, ³Radiology & Nuclear Medicine, Radboud university medical center, Netherlands, ⁴Laboratory of Biomechanical Engineering, University of Twente, Netherlands, ⁵Physics of Fluids Group, University of Twente, Netherlands	PL-B8-2 Source Density Apodisation in 2D All-Optical Ultrasound Imaging Erwin J. Alles¹, Sacha Noimark^{1,2}, Edward Zhang¹, Paul C. Beard¹, Ivan P. Parkin², Adrien E. Desjardins¹ ¹Department of Medical Physics & Biomedical Engineering, University College London, London, United Kingdom, ²Materials Chemistry Research Centre, Department of Chemistry, University College London, London, United Kingdom	PL-B9-1 Flexible Sensor Matrix with Dynamic Channel Weighting for Improved Estimation of the Fetal Heart Rate by Doppler Ultrasound Paul Hamelmann¹, Massimo Mischl¹, Rik Vullings¹, Alexander F. Kolen², Lars Schmitt², Shivan Joshi³, Jan W.M. Bergmans¹ ¹Signal Processing Systems, Eindhoven University of Technology, Eindhoven, Netherlands, ²Philips Research, Eindhoven, Netherlands, ³Electronic Components, Technology and Materials, Delft University of Technology, Delft, Netherlands
PL-B5-6 Reduced Jitter in Displacement Estimation Using the Spatial Coherence of Backscatter Dongwoon Hyun^{1,2}, Yufeng Deng¹, Arsenii Telichko³, Jeremy Dahl³ ¹Biomedical Engineering, Duke University, Durham, NC, USA, ²Bioengineering, Stanford University, Stanford, CA, USA, ³Radiology, Stanford University, Stanford, CA, USA	PL-B6-2 Real-Time Optical Tracking to Provide Feedback During Blinded Contrast-Enhanced Ultrasound Imaging: Clinical Evaluation of System and Protocol Ahmed El Kaffas¹, Renhui Gong², Rosa Sigris¹, Juergen Willmann¹, Dimitre Hristov² ¹Radiology, Stanford University, USA, ²Radiation Oncology, Stanford University, USA	PL-B7-5 Non-Invasive Spinal Vibration Testing Using Ultrafast Ultrasound Imaging: a New Way To Measure Spine Function. Tarek Kaddoura¹, Anthony Au², Richard Uwiera², Richard Fox², Greg Kawchuk², Roger J. Zemp¹ ¹Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada, ²University of Alberta, Canada	PL-B8-3 Non-Contact Laser Ultrasound for Medical Imaging Rob Haupt¹ ¹Active Optical Systems, MIT Lincoln Laboratory, Lexington, MA, USA	PL-B9-2 Imaging From the Implantable Side: Ultrasound-Powered EIT System for Surgical Site Infection Detection Bruno M. C. Rosa¹, Guang Z. Yang¹ ¹Hamlyn Centre, Imperial College London, London, United Kingdom

FRIDAY POSTER

9:30 am – 4:00 pm

Poster --- Friday, September 8, 2017

Exhibit Hall

P1-B9-3 Backward-Mode Ultrafast Pulsed Magnetomotive Ultrasound Ming-Chen Lu ¹ , Jieh-Yuan Huang ¹ , Meng-Lin Li ¹ ¹ National Tsing Hua University, Taiwan	Session P1-B10. MTC: Tumor Characterization Chair: Niguo Han University of Illinois at Urbana-Champaign	Session P1-B11. MTH: Therapy Guidance and Monitoring Chair: Chih-Kuang Yeh University of Waterloo	P1-B11-8 Estimation and Compensation of In-Situ Ultrasound Intensity using a 2-D Array Therapy System and High Frame Rate Imaging Y.M. Peng ¹ , B.X. He ¹ , J.Q. Yu ¹ , M.Y. Chen ¹ , Z.H. Shuai ¹ , Y.Y. Hu ¹ , L.J. Wang ¹ , S.P. Chen ^{1,2,3} , Chen Ting Chin ^{1,3} ¹ Department of Biomedical Engineering, Shenzhen University, P. R. China, Shenzhen, China, People's Republic of ² Guangdong Provincial Key Laboratory of Biomedical Information Detection and Ultrasound Imaging, P. R. China, Shenzhen, China, People's Republic of ³ National-Regional Key Technology Engineering Laboratory of China for Medical Ultrasound, P. R. China, Shenzhen,	P2-B1-6 Reducing Pulse Compression Sidelobes by Means of a Reactance Transformation Pietro Burrascano ¹ , Stefano Laurenti ¹ , Marco Ricci ² , Luca Semmi ¹ , Giuseppe Silipigni ¹ , Riccardo Tomasello ¹ ¹ Università di Perugia, Terni, Terni, Italy, ² Università della Calabria, Rende, Cosenza, Italy
P1-B9-4 Fast Multilevel Lagrangian Carotid Strain Imaging With GPU Computing Nirvadh Meshram ^{1,2} , Tomy Vaighese ^{1,2} ¹ Department of Medical Physics, University of Wisconsin School of Medicine and Public Health, Wisconsin, USA, ² Department of Electrical and Computer Engineering, University of Wisconsin Madison, Madison, Wisconsin, USA	P1-B10-1 Relating Quantitative Ultrasound Parameters To Histologic Texture Parameters in Cancerous Human Lymph Nodes Rui Venancio ¹ , Bassem Ben Cheikh ¹ , Alain Corion ¹ , Emi Saegusa-Beccroft ² , Junji Machi ² , Daniel Racoceanu ¹ , Lori Brudal ¹ , Jonathan Mamou ¹ ¹ Laboratoire d'Imagerie Biomédicale (LIIB), Sorbonne Universités, UPMC Univ Paris 06, CNRS, INSERM, Paris, France, ² University of Hawaii and Kuakini Medical Center, Honolulu, Hawaii, USA, ³ Lizzi Center for Biomedical Engineering, Riverside Research, New York, New York, USA	P1-B11-1 Synchronized Passive Microbubble Imaging for Guidance and Monitoring of Focused Ultrasound Therapies Mark Burgess ¹ , Jason Apostolakis ¹ , Elisa Konofagou ^{1,2} ¹ Biomedical Engineering, Columbia University, New York, USA, ² Radiology, Columbia University, New York, USA	P2-B1-7 Measured Beam Patterns of Biomimetic Receivers Improve Localisation Performance of an Ultrasonic Sonar Francesco Guarato ¹ , Charlotte Strang-Moran ¹ , James Windmill ¹ ¹ University of Strathclyde, Glasgow, United Kingdom	P2-B1-8 Material Impulse Response Estimation from Overlapping Ultrasound Echoes Using a Compressed Sensing Technique Johan E. Carlson ¹ , Aziz Kubilay Ovackli ¹ , Patrik Pajärvi ² ¹ Div. of Signals and Systems, Lulea University of Technology, Lulea, Sweden, ² Rubico Vibration Analysis AB, Lulea, Sweden
P1-B9-5 the Feasibility of Deep-Learning Algorithms Integration on a GPU-based Ultrasound Research Scanner Piotr Jarosik ¹ , Marcin Lewandowski ² ¹ Department of Computational Science, Institute of Fundamental Technological Research, Warsaw, Poland, ² Laboratory of Professional Electronics, Institute of Fundamental Technological Research, Warsaw, Poland	P1-B10-2 Quantitative Ultrasound Spectroscopy to Differentiate Between Hepatocellular Carcinoma and At-Risk Liver Parenchyma Ahmed El Kaffas ¹ , Isabelle Duro ² , Rosa Sigris ² , Jarrett Rosenberg ¹ , Nishita Kothary ¹ , Juergen Willmann ¹ ¹ Radiology, Stanford University, USA, ² Stanford University, USA	P1-B11-2 Feasibility of Thermal Strain Imaging in Noninvasive Monitoring of HIFU-mediated Local Drug Delivery Xiaolong Liang ¹ , Qiong He ² , Jing Gao ³ , Jianwen Luo ² ¹ Department of Ultrasonography, Peking University Third Hospital, China, People's Republic of ² Department of Biomedical Engineering, Tsinghua University, China, People's Republic of	Session P2-B1. Signal Processing Chair: Erdal Oruklu Illinois Institute of Technology	Session P2-B2. Material and Defect Characterization Chair: Patrick Johnston NASA Langley Research Center
P1-B9-6 Automated System for Point Shearwave Elastography (pSWE) in Rodent Livers Jonathon Perdomo ¹ , James Butler ¹ , Max Harlacher ¹ , Graeme O'Connell ¹ , Gabriela Torres ² , Caterina Gallippi ² , Anush Sridharan ² , Kenita Johnson ² , Paul Dayton ² , Ryan Gessner ¹ , Tomasz Czernuszewicz ¹ ¹ SonoVol, Inc., Research Triangle Park, NC, USA, ² Biomedical Engineering, UNC Chapel Hill, NC, USA	P1-B10-3 Predicting Treatment Response in Invasive Ductal Breast Carcinoma Using Three-Dimensional Quantitative Ultrasound Analysis Aisha Meel-van den Abeelen ¹ , Gert Weijers ² , Jan van Zelst ³ , Johan Thijssen ¹ , Ritske Mann ¹ , Chris de Korte ^{4,5} ¹ Medical Ultrasound Imaging Center, Department of Radiology and Nuclear Medicine, Radboudumc, Nijmegen, Netherlands, ² Medical Ultrasound Imaging Center, Department of Radiology and Nuclear Medicine, Nijmegen, Netherlands, ³ Department of Radiology and Nuclear Medicine, Nijmegen, Netherlands, ⁴ Department of Radiology and Nuclear Medicine, Nijmegen, Netherlands, ⁵ Department of Radiology and Nuclear Medicine, Nijmegen, Netherlands	P2-B1-1 Comparison of GPU and FPGA Based Hardware Platforms for Ultrasonic Flaw Detection Using Support Vector Machines Kushal Virupakshappa ¹ , Erdal Oruklu ¹ , Yiyue Jiang ¹ , Yu Yuan ¹ ¹ ECE Department, Illinois Institute of Technology, Chicago, IL, USA	P2-B1-9 Evaluation of the Acoustic Properties of Clots During Sonothrombolysis Laurent Auboire ¹ , Damien Fouan ¹ , Jean-marc gregoire ¹ , Frederic ossant ¹ , Jean-michel escoffie ¹ , ayache bouakaz ¹ ¹ INSERM U930, France	P2-B1-3 Focused Ultrasound Ablation Using Electronically Scanned Grating Lobes with Real-time Echo Decorrelation Imaging Feedback Michael Cox ¹ , Mohamed Abbass ¹ , Allison-Joy Garbo ¹ , T. Douglas Mast ¹ ¹ Biomedical Engineering, University of Cincinnati, Cincinnati, Ohio, USA

P1-B9-7 a New Method To Increase the Penetration Depth of Intravascular Ultrasound With Coded Excitation Imaging Jichan Hong¹, Peitian Mu¹, Xingyin Wang¹, Haocong Zheng¹, Weibao Qiu¹ ¹Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of	P1-B10-4 Combining Nakagami Imaging and Convolutional Neural Networks for Breast Lesion Classification Michal Byra¹, Hanna Piotrkowska-Wroblewska¹, Katarzyna Dobruch-Sobczak¹, Andrzej Nowicki¹ ¹Institute of Fundamental Technological Research PAS, Warsaw, Poland	P1-B11-4 Ultrasound Imaging with Enhanced Lesion-to-Bubble Ratio based on Wavelet Transform for Monitoring of High-Intensity Focused Ultrasound Ting Ding¹, Zhiguo Gu¹, Siyuan Zhang², Luyang Ma¹, Mingxi Wan² ¹Department of Biomedical Engineering, School of Information and Communication Engineering, North University of China, China, People's Republic of ²Department of Biomedical Engineering, School of Life Science and Technology, Xian Jiaotong University, China, People's Republic of	P2-B1-2 Performance Analysis of Deep Learning Architectures for Ultrasonic NDE Applications Kushal Virupakshappa¹, Erdal Onuklu¹ ¹ECE Department, Illinois Institute of Technology, Chicago, IL, USA	P2-B2-1 Evaluating the Influence of 3D-Printing Parameters on Acoustic Material Properties Axel Jäger¹, Sarah Johannesmann², Leander Claes², Manuel Webersen¹, Bernd Henning², Mario Kupnik¹ ¹Technische Universität Darmstadt, Darmstadt, Germany ²University of Paderborn, Paderborn, Germany
P1-B9-8 Low Cost 3D Doppler Ultrasound: Preliminary in Vivo Results Matthew R. Morgan¹, Carl D. Henckhoff², Joshua S. Broder¹, R. Brooke Jeffrey², Jeremy J. Dahl² ¹Biomedical Engineering, Duke University, Durham, NC, USA ²Radiology, Stanford University, Stanford, CA, USA ³Emergency Medicine, Duke University, Durham, NC, USA	P1-B10-5 Three-Dimensional Estimation of Ultrasound-Contrast-Agent Dispersion and Convection in the Prostate Rogier R. Witteboer¹, Ruud J.G. van Sloun¹, Stefan G. Schaik^{1,2}, Christophe K. Mannuarts², J.C. van der Linden¹, Pintong Huang¹, Hessel Wijkstra^{1,2}, Massimo Misch¹ ¹Dept. of Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands ²Dept. of Urology, Academic Medical Center, University of Amsterdam, Amsterdam, Netherlands ³Dept. of Pathology, DNA Laboratories, Jeroen Bosch Hospital, 's-Hertogenbosch, Netherlands ⁴Second Affiliated Hospital of Zhejiang University, Hangzhou, China, People's Republic of	P1-B11-5 3D Passive Imaging of Ultrasound Cavitation using a 2D Array Paul Boulos^{1,2}, Francois Varray¹, Bruno Gilles², Jean-Christophe Béra², Christian Cachard¹ ¹Univ-Lyon, INSA-Lyon, UCBLL, UDM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, Lyon, France ²Lab'au-Inserm U1032, Lyon, France	P2-B2-2 Creep Damage Evaluation of P92 Steel Using Nonlinear Lamb Waves Wujun Zhu¹, Yanxun Xiang¹, Mingxi Deng², Fuzhen Xuan¹, Chang-Jun Liu¹, Haiyan Zhang¹ ¹East China University of Science and Technology, China, People's Republic of ²School of Logistics Engineering, University, China, People's Republic of ³School of Communication and Information Engineering, Shanghai University, China, People's Republic of	P2-B2-3 Influences on the Ultrasonic Transmission Behavior of Wood based Materials Torben Marhenke¹, Jens Twietel¹, Jörg Hasener², Jörg Wallaschek¹ ¹Institute of Dynamics and Vibration Research, Leibniz Universität Hannover, Hannover, Germany ²Fagus-GreCon Gerten GmbH & Co. KG, Alfeld, Germany
P1-B9-9 Therapeutic Ultrasound System Transducer Coupling Fluid Management System Ralf Sep¹, Rodrigo Chalusian¹, Drew Degentesh³, Craig Campbell², Rob Parks², Mark Carol¹ ¹Sonacare Medical, USA ²Daedalus, USA	P1-B10-6 in Vivo Microcirculation Mapping of Human Skin Keloid by 40-MHz Ultrafast Ultrasound Imaging Pai-Yu Chen¹, Yuan-Yu Hsueh², Chih-Chung Huang¹ ¹Department of Biomedical Engineering, National Cheng Kung University, Taiwan ²Division of Plastic surgery, National Cheng Kung University Hospital, Taiwan	P1-B11-6 Basic Study on Ultrasonic Tissue Monitoring Using 1.5-Dimensional Ultrasound Phased Array for Ultrasound-guided High Intensity Focused Ultrasound Treatment Ryo Takagi¹, Shin Yoshizawa², Shin-ichiro Umemura² ¹National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan ²Tohoku University, Sendai, Japan	P2-B2-4 Corrosion Evaluation of Additive Manufacture Metal Alloys by Nondestructive Line-focus Transducer Chenglong Ji¹, Yuxiang Wang¹, Qiuyan Li¹, Qing-Ming Wang¹ ¹Mechanical Engineering and Materials Science, University of Pittsburgh, Pittsburgh, PA, USA	P2-B2-5 Implementation of Sparse Signal Recovery on FPGA for Ultrasonic NDT Christian Grandinetti¹, Jan Kirchhoff², Fabian Krieg¹, Florian Roemer², Alexander Ihlow², Giovanni Delgado³, Hendrik Theado¹, Ahmad Osman¹ ¹Fraunhofer IZEP, Saarbrücken, Germany ²Ilmenau University of Technology, Ilmenau, Germany ³Fraunhofer IIS, Erlangen, Germany
P1-B9-10 Real-Time Intra-Operative Guidance Using Combined Photoacoustic and Pulsed Fluorescence Imaging for Robot-Assisted Surgical Operation Jeeun Kang¹, Hanh Le¹, Jin U. Kang¹, Emad Bector¹ ¹Johns Hopkins University, USA	P1-B10-7 in Vivo Attenuation Estimation in Human Thyroid Nodules Using the Regularized Spectral Log Difference Technique: Initial Pilot Study Andres Colla¹, Rosa Laines², Claudia Salazar², Julien Rouyer¹, Gabriel Jimenez¹, Joseph Pinto², Jorge Guerrero², Roberto Lavarello¹ ¹Departamento de Ingeniería, Pontificia Universidad Católica del Perú, San Miguel, Lima, Peru ²Oncosalud, San Borja, Lima, Peru	P1-B11-7 a Novel 3D Ultrasound Thermometry Method for HIFU Ablation Using an Ultrasound Element Younsul Kim¹, Chloe Audigier¹, Nicholas Ellens², Enad Bector² ¹Computer Science, Johns Hopkins University, Baltimore, Maryland, USA ²Radiology, Johns Hopkins University, Baltimore, Maryland, USA	P2-B1-3 Architecture of an Ultrasonic Experimental Platform for Information Transmission Through Solids Boyang Wang¹, Jafar Samiei¹, Sasan Bakhtian², Alexander Heifetz² ¹Illinois Institute of Technology, USA ²Argonne National Laboratory, USA	P2-B1-4 Methods for Correcting Dispersion and Pulse Width Effects During Pulsed Wire Measurements Matthew Kasa^{1,2}, Jafar Samiei¹ ¹Illinois Institute of Technology, USA ²Argonne National Laboratory, USA

9:00 am – 4:00 pm

Poster --- Friday, September 8, 2017

Exhibit Hall

P2-B2-5 An Efficient Non-Contact Method for Measuring Physical Parameters of Thin Elastic Multilayers Ziwen Su¹, Hanmin Peng¹, Dawei Wu¹ ¹State Key Lab of Mechanics and Control of Mechanical Structures, Nanjing University of Aeronautics and Astronautics, Nanjing, Jiangsu, China, People's Republic of	P3-B1-1 Focusing Beyond the Diffraction Limit With Acoustic Jets José Henrique Andrade¹, Marco Brizzotti², J. P. Leão-Neto³, J. L. Adamowski², Glauber Silva³ ¹Campus Arapiraca, Federal University of Alagoas, Arapiraca, Brazil, ²São Paulo University, Brazil, ³Federal University of Alagoas, Brazil	P3-B1-9 Investigation of Regular and Anomalous Behavior of Liquid Media Under High Pressure Using Ultrasonic Methods Piotr Kiełczyński¹, Stanisław Ptasznik², Marek Szalewski¹, Andrzej Balcerzak¹, Krzysztof Wieja¹, Aleksander Rostocki³ ¹Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland, ²Meat and Fat Technology Department, Institute of Agricultural and Food Biotechnology, Warsaw, Poland, ³Physics Department, Warsaw University of Technology, Poland	Session P4-B1. Nonlinear Signals and Effects in Microacoustics Chair: Ventsislav Yantchev Chalmers University	P4-B2-2 Fast and Accurate Prediction of Spurious Modes in Aluminum Nitride MEMS Resonators using Artificial Neural Network (ANN) Algorithm Changhui Xu¹, Mo Li², Shuo Zhao², Enes Calayir¹, Gianluca Piazza¹ ¹Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA, ²Department of Chemistry, Carnegie Mellon University, Pittsburgh, PA, USA
P2-B2-6 Characterization of Microstructure in Ti-6Al-4V Through Ultrasonic Scattering Measurements Andrea P. Arguëlles¹, Dan Xiang¹ ¹X-wave Innovations, Inc., Gaithersburg, Maryland, USA	P3-B1-2 Acoustic Radiation Pressure As a Versatile Tool for Cell Compression and Mechanobiology Studies Valerie Bentivegna¹, Fraser Stewart¹, Sandy Cochran², Inke Nütke¹ ¹School of Life Sciences, University of Dundee, Dundee, United Kingdom, ²School of Engineering, University of Glasgow, Glasgow, United Kingdom	P3-B1-10 Optimized Acoustic Echoes Simulator in Fourier domain Norbert Zolek¹, Janusz Wojcik¹ ¹Institute of Fundamental Technological Research Polish Academy of Sciences, Warsaw, Poland	P4-B1-1 Role of Metal Electrodes in the Generation of Third Order Non-Linearities in Surface Acoustic Wave Components Vikrant Chauhan¹, Markus Mayer², Andreas Mayer³, Elena Mayer³, Werner Ruile², Thomas Ebner², Karl Wagner², Robert Weigel¹, Amelie Hagelauer¹ ¹Institute of Electronics Engineering, Erlangen Nuremberg University, Erlangen, Bayern, Germany, ²Advanced development discreet, RE360iv, Munich, Bayern, Germany, ³Hochschule Offenburg, Germany, Offenburg, Germany	P4-B2-3 Sc(0.06)Al(0.94)N Film Evaluation Using Contour Mode Resonators Benjamin Griffin¹, Michael Henry¹, Bernd Heinz² ¹MEMS Technologies, Sandia National Laboratories, Albuquerque, NM, USA, ²Evatec, Switzerland
P2-B2-7 The Effect of In-Plane and Out-Of-Plane Fiber Waviness on Guided Waves Peter Juarez¹, Cara Leekey¹ ¹Nondestructive Evaluation Sciences Branch, NASA Langley Research Center, Hampton, VA, USA	P3-B1-11 Reducing Uncertainties for Spatial Averaging at High Frequencies David Sinden¹, N. Christopher Chaggaes², Guofeng Pang³, Oleg Ivanysky², Srinath Rajagopal¹ ¹Ultrasonics, National Physical Laboratory, Teddington, United Kingdom, ²Pujifilm Visulsonics, Toronto, Ontario, Canada	P3-B1-12 Numerical Investigation of Inertial Cavitation Threshold Under Multi-Frequency Ultrasound Dingjie Suo¹, Bala Govind¹, Shengqi Zhang¹, yun jing¹ ¹North Carolina state university, Raleigh, NC, USA	P4-B1-2 Vector Measurement of Nonlinear Signals Generated in RF SAW/BAW Devices Masahiro Gawayas¹, Tatsuya Omori¹, Ryo Nakagawa², Haruki Kyoya², Ken-ya Hashimoto¹ ¹Graduate School of Engineering, Chiba University, Chiba, Japan, ²Murata Manufacturing Co., Ltd., Nagakakyō, Japan	P4-B2-4 Support Loss Evasion in Breathing Mode High-Order Silicon Disc Resonators Sarah Shahraimi¹, Reza Abdolvand² ¹Electrical Eng & computer science, University of Central Florida, Orlando, Florida, USA, ²University of Central Florida, Orlando, Florida, USA
Session P2-B3. Underwater Acoustics Chair: Jafar Samiie Illinois Institute of Technology	P3-B1-4 Observation of Slow Elastic Waves in Porous Material Using Ultrasound Elastography Johannes Atchete^{1,2}, Stéfan Catheline¹, Goulven Le Moign¹, Remy Souchon¹, Philippe Roux² ¹Labiau, INSERM, France, ²ISTerre, CNRS Grenoble, France	P4-B1-3 Simulating the Frequency Response of Acoustic Resonators With Nonlinear Elastic Constitutive Behavior Philip Stephanou¹ ¹Atlas Sensors, Sunnyvale, CA, USA	P4-B2-5 Release Area Confinement in Contour Mode Resonators Andrea Lozzi¹, Annalisa De Pastina¹, Ernest Ting-Ta Yen², Luis Guillermo Villanueva¹ ¹ISTI IGM NEMS, Ecole polytechnique fédérale de Lausanne, Lausanne, Switzerland, ²Kilby Labs, Texas Instruments Inc., Santa Clara, CA, USA	

P2-B3-1 Design of a Sparse Array To Simulate a Fully Dense Underwater Planar Array Transducer for Underwater Vehicles Yongrae Roh¹, Muhammad Shakeel Afzal¹ ¹School of Mechanical Engineering, Kyungpook National University, Daegu, Korea, Republic of	P3-B1-5 eSTIMATION AND MEASUREMENT OF THE STREAMING VELOCITY IN PRESENCE OF CONTRAST AGENTS OR BLOOD MIMICKING SCATTERERS Wojciech Secomski¹, Janusz Wojcik¹, Ziemowit Klimonda¹, Andrzej Nowicki¹ ¹Department of Ultrasound, Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland	P3-B1-13 Impact-Reduction Effect of Ultrasonic Vibrations on Carbon Fiber-Reinforced Polymer Plate Using a Downsized Transducer Akiyuki Suzuki¹, Kai Kimura¹, Futoshi Nishimura¹, Iromaru Tsujino² ¹National Institute of Technology, Tokuyama College, Shunan, Japan, ²Kanagawa University, Yokohama, Japan	P4-B1-4 Nonlinear Frequency Response of Second Harmonic Generation in SAW IDT Resonators. Yook-Kong Yong¹, Xiangnan Pang¹ ¹Civil and Environmental Engineering, Rutgers University, Piscataway, New Jersey, USA	P4-B2-6 Artificial Neural Network (ANN) based Digital Temperature Compensation Method (IDTCM) for Aluminum Nitride MEMS Resonators Changting Xu¹, Gianluca Piazza¹ ¹Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA
P2-B3-2 Concentration Profiling Using a Novel Acoustic Backscatter System With Single Transducers Pulsed At Multiple Frequencies Alastair Tonge¹, Jaiyana Bux¹, David Cowell², Jeff Peakall³, Steven Freear², Timothy Hunter¹ ¹SCAPE, University of Leeds, Leeds, West Yorkshire, United Kingdom, ²School of Electronic and Electrical Engineering, University of Leeds, Leeds, West Yorkshire, United Kingdom, ³Institute of Applied Geoscience, University of Leeds, Leeds, United Kingdom	P3-B1-6 the Influence of Rheological Parameters of Viscoelastic Liquids on the Propagation Characteristics of Ultrasonic Love Waves Piotr Kielczynski¹, Marek Szalewski¹, Andrzej Balcerzak¹, Krzysztof Wieja¹ ¹Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland	P3-B1-14 Temperature Induced Waveguiding in a Resonant 2-port SAW Delay Line on Quartz Max Madore¹, Pierre Duflie¹ ¹Phonon Corporation, Simsbury, Connecticut, USA	P4-B1-5 Nonlinear Effects of Electrode and Bragg Reflector Materials in BAW Resonators David Garcia¹, Marta González¹, Alberto Hueltes¹, Carlos Collado¹, Jordi Mateu¹, Jose M González¹ ¹UPC, Spain	Session P4-B3: Microacoustic Sensors and Gyroscopes Chair: Jidong Dai Murata Americas
P2-B3-3 Effect of Underwater Ultrasound Exposure on Growth of Plant Roots and Leaves Yuta Kurashina¹, Tatsuya Yamashita¹, Shuichi Kurabayashi², Keita Ando¹, Kenjito Takemura¹ ¹Keto University, Yokohama, Japan, ²Graduate School of Media and Governance, Keio University, Fujisawa, Japan	P3-B1-7 Transmission of High-Intensity Ultrasonic Waves by Using Sound Wave Transmission Straight Rigid Tube Norifumi Suzuki¹, Ayumu Osumi¹, Youichi Ito¹ ¹Electrical Engineering, Nihon University, Chiyoda-ku, Tokyo, Japan	P3-B1-15 Magnetolectric BAW Resonator as a Source of Pure Spin Current Natalia Polzikova¹, Sergei Alekseev¹, Ivan Pyatakin¹, Josif Kotelyanski¹, Valery Luzanov¹, Alexander Raevsky¹ ¹Kotel'nikov Institute of Radio Engineering and Electronics of Russian Academy of Sciences, Moscow, Russian Federation	Session P4-B2: Contour Mode Resonators and other MEMS Chair: Omar EL MAZRIA Université de Lorraine	P4-B3-1 a Love Wave Biosensor with a Phononic Wave Guiding Layer for VEGF Detection in Selective Platelet Activation Huiyan Wu¹, Guangyi Zhao², Hongfei Zu¹, James HC Wang³, Qing-Ming Wang¹ ¹Department of Mechanical Engineering and Materials Science, University of Pittsburgh, Pittsburgh, PA, USA, ²Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA, USA, ³Department of Orthopaedic Surgery, University of Pittsburgh, Pittsburgh, PA, USA
Session P3-B1: PGP - General Physical Acoustics Chair: Yook-Kong Yong Rutgers University	P3-B1-8 Experimental Investigations of Ultrasound Speed and Absorption in the Martian Atmosphere Hanyin Cui¹, Chao Li¹, Weijun Lin¹, Yang Jia², Bo Xue², Jingchuan Zhang², Qian Li⁴ ¹Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, ²People's Republic of China, ³Beijing Institute of Spacecraft System Engineering, China, ⁴People's Republic of China, ⁵Johns Hopkins University School of Medicine, USA	P3-B1-16 SAW Study of Structural Changes in Liquid Crystals Doped with Carbon Nanotubes Induced by Electric and Magnetic Fields Peter Bury¹, Marek Vevertek¹, Peter Kopecký², Milan Timko², Zuzana Mitrova² ¹Department of Physics, Zilina University, Zilina, Slovakia, ²Institute of Experimental Physics, Slovak Academy of Science, Kosice, Slovakia	P4-B2-1 High Coupling Two-port Lithium Niobate MEMS Resonators using Capacitive Ground Concept Abhay Kochhar¹, Gabriel Vidal-Alvarez¹, Luca Colombo¹, Gianluca Piazza¹ ¹ECE, Carnegie Mellon University, Pittsburgh, Pennsylvania, USA	P4-B3-2 Combined Colorimetric and Gravimetric CMUT Sensor for Detection of Phenylacetone Mathias Mølgård¹, Milan Laustsen¹, Ida Thygesen¹, Mogens Jakobsen¹, Erik Thomsen¹ ¹Nanotech, Technical University of Denmark, Kgs. Lyngby, Denmark

9:30 am – 4:00 pm

Poster --- Friday, September 8, 2017

Exhibit Hall

P4-B3-3 Optimal Design for an Innovative Very-High-Temperature Hybrid SAW Sensor Pascal Nicolay¹, Natalya Naumenko² ¹Carinthian Tech Research CTR AG, VILLACH, Austria, ²National University of Science and Technology "MISIS", Russian Federation	P5-B1-2 High Frequency Array Transducer for Intravascular Ultrasound Min Su¹, Lining Zhang¹, Zhiqiang Zhang¹, Hairong Zheng¹, Weibao Qiu¹ ¹Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, Guangdong, China, People's Republic of	Session P5-B2, MUT Manufacturing Chair: Omer Oralkan North Carolina State University	P5-B2-8 "Pipe Organ" Air-coupled Broad Bandwidth Transducer Botong Zhu¹, Benjamin Tiller¹, Alan Walker², James Windmill¹, Anthony Mulholland³ ¹Centre for Ultrasonic Engineering, University of Strathclyde, Glasgow, United Kingdom, ²School of Science and Sport, University of the West of Scotland, Glasgow, United Kingdom, ³Department of Mathematics and Statistics, University of Strathclyde, Glasgow, United Kingdom	
P4-B3-4 a One-port SAW In-liquid Sensor Platform: Design and Fabrication Kiryl Kustanovich¹, Ventsislav Yanchev¹, Aldo Jesorka¹ ¹Chemistry and Chemical Engineering, Chalmers University of Technology, Goteborg, Sweden	P5-B1-3 Intravascular Ultrasound (IVUS) Imaging Reaching 100 MHz Xiang Li^{1,2}, Qifa Zhou², K. Kirk Shung², Jian Yuan¹ ¹Acoustic Life Science Co.,Ltd., Shanghai, China, People's Republic of, ²Biomedical Engineering, University of Southern California, Los Angeles, CA, USA	P5-B2-1 Optimization of the Efficiency and Reliability of Reverse-Fabricated CMUT Arrays Alessandro Stuart Savoia¹, Barbara Maun¹, Alvise Bagolini², Luca Maolo³, Antonio Minotti³, Alessandro Pecora³, Guglielmo Fortunato³, Pierluigi Bellutti², Giosuè Caliano¹ ¹Department of Engineering, Roma Tre University, Rome, Italy, ²Fondazione Bruno Kessler, Trento, Italy, ³Istituto per la Microelettronica e Microsistemi, Consiglio Nazionale delle Ricerche, Rome, Italy	P5-B2-9 CMUT Isolated Isolation Posts Benjamin Greenlay¹, Roger Zemp² ¹University of Alberta, Edmonton, Alberta, Canada, ²University of Alberta, Canada	
P4-B3-5 a New Threshold Determination Algorithm for SAW Resonant Sensors Yang Yang¹, Chennui Zhang¹, Xiaojun Ji¹, Ping Li¹, Yumei Wei¹, Tao Han¹ ¹Department of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, China, People's Republic of	P5-B1-4 KNN Single Crystal High Frequency Transducer for Intravascular Photoacoustic Imaging Benpeng Zhu¹, Wei Wei², Xiaofei Yang³, Yongxiang Li¹, Qifa Zhou², K. Kirk Shung⁴ ¹School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, China, People's Republic of, ²Hubei Cancer Hospital, Wuhan, Hubei, China, People's Republic of, ³School of Optical and Electronic Information, Huazhong University of Science and Technology, Wuhan, Hubei, China, People's Republic of, ⁴Key Laboratory of Inorganic Functional Materials and Devices, Shanghai, China, People's Republic of, ⁵University of Southern California, LA, CA, USA, ⁶Department of Biomedical and Engineering, University of Southern California, LA, CA, USA	P5-B2-2 Long Term Reliability Test Results of CMUT Danhua Zhao¹, Costas Simopoulos¹, Steve Zhuang¹ ¹Kolo Medical Inc, USA	P5-B2-10 BCB Polymer Based Row-Column addressed CMUT Andreas Havreland¹, Martin Ormnen¹, Chantal Silvestre¹, Mathias Engholm¹, Jorgen Jensen², Erik Thomsen¹ ¹DTU Nanotech, the Technical University of Denmark, Kongens Lyngby, Denmark, ²Center for Fast Ultrasound Imaging, Department of Electrical Engineering, the Technical University of Denmark, Kongens Lyngby, Denmark	
P4-B3-6 Ultra-High-Frequency Wireless MEMS QCM Biosensor for Direct Detection of Biomarkers in Serum Hirotsugu Ogi¹, Akihiro Iwata¹ ¹Osaka University, Japan	P5-B1-5 a Focused Ultrasound Transducer for Intravascular Ultrasound Application Min Su¹, Lining Zhang¹, Zhiqiang Zhang¹, Hairong Zheng¹, Weibao Qiu¹ ¹Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, Guangdong, China, People's Republic of	P5-B2-3 Fingerprint Imaging Using Capacitive Micromachined Ultrasonic Transducer Impedimetry with Glass Waveguide Yun Sang Kwak¹, Won Young Choi², Kwan Kyu Park¹ ¹Department of Mechanical Engineering, Hanyang University, Seoul, Korea, Republic of, ²Department of Convergence Mechanical Engineering, Hanyang University, Seoul, Korea, Republic of	P5-B2-11 a Novel Single-element Dual-frequency Ultrasound Transducer for Image-guided Precise Medicine Changhe Sun^{1,2}, Fukang Dai^{1,2}, Senlin Jiang^{2,3}, Yufei Liu^{1,4} ¹Key Laboratory of Optoelectronic Technology & Systems, Ministry of Education, Chongqing University, Chongqing, China, People's Republic of, ²National Key Laboratory of Fundamental Science of Micro/Nano-Device and System Technology, Chongqing University, Chongqing, China, People's Republic of, ³Collaborative Innovation Center for Brain Science, Chongqing University, Chongqing, China, People's Republic of, ⁴Centre for Intelligent Sensing Technology, Chongqing University, Chongqing, China, People's Republic of	

P4-B3-7 Performance improvement of the SAW based current sensor incorporating a patterned magnetostrictive FeCo film Wen Wang¹, Yana Jia¹, Xinlu Liu¹, Yong Liang¹, Shitang He¹ ¹Chinese Academy of Sciences, Institute of Acoustics, Beijing, China, People's Republic of	P5-B1-6 Dual-mode Imaging Catheter for Intravascular Ultrasound Lining Zhang^{1,2}, Jiehan Hong¹, Min Su¹, Hairong Zheng¹, Weibao Qu¹ ¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of, ²Northeastern University, China, People's Republic of	P5-B2-4 3-D Synthetic Imaging Using 128-Channel 2-D Sparse Capacitive Micromachined Ultrasonic Transducer Array Won Young Choi¹, Yun Sang Kwak², Kwan Kyu Park² ¹Department of Convergence Mechanical Engineering, Hanyang University, Seoul, Korea, Republic of, ²Department of Mechanical Engineering, Hanyang University, Seoul, Korea, Republic of		
P4-B3-8 Towards a Surface and Bulk Excited SAW Gyroscope Benjamin Davaji¹, Amit Lal¹ ¹SonicMEMS, Cornell University, Ithaca, NY, USA	P5-B1-7 High Frequency Single Crystal Ultrasonic Transducers Up to 100 MHz for High Resolution Ophthalmic Imaging Applications Tianfu Zhang^{1,2}, Ruimin Chen¹, Zhiqiang Zhang¹, Runze Li¹, Xingui Tang², Xueqiao Wang², K. Kirk Shung¹, Qia Zhou^{1,4} ¹Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA, ²School of Physics & Optoelectric Engineering, Guangdong University of Technology, Guangzhou, China, People's Republic of, ³Newway Technology, Inc, California, USA, ⁴Department of Ophthalmology, University of Southern California, Los Angeles, California, USA	P5-B2-5 a Low Temperature Sacrificial Layer Based CMUT Fabrication Process for Improved Reliability Amirabbas Prouz¹, F. Levent Degertekin^{1,2} ¹School of Electrical & Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA, ²G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, USA		
Session P5-B1, High-frequency Transducers Chair: Jeremy Brown Dalhousie University	P5-B1-8 Chirp coded ultrasonic pulses used for scanning acoustic microscopy Anwarul Habib¹, Frank Melandso¹ ¹Department of Physics and Technology, UiT the Arctic University of Norway, Tromsø, Norway	P5-B2-6 a 3D Packaging Technology for Acoustically Optimized Integration of 2D CMUT Arrays and Front End Circuits Alessandro Stuart Savoia¹, Barbara Mauti¹, Roberto Bardelli², Fabrizio Toia², Giulia Matrone³, Marco Piastra³, Alessandro Ramalli⁴, Fabio Quaglia², Giosuè Caliano¹ ¹Department of Engineering, Roma Tre University, Rome, Italy, ²STMicroelectronics, Agrate, Italy, ³Department of Electrical, Computer and Biomedical Engineering, University of Pavia, Pavia, Italy, ⁴Department of Information Engineering, University of Florence, Florence, Italy		
P5-B1-1 High frequency Self-focusing Transducer Fabricated by a Laser Engraving Technique Xiaohua Han¹, Zhangqian Li¹, Zhile Han¹, Pengbo Liu¹, Peiyang Li¹, Weiwei Shao¹, Yaoyao Cui¹ ¹Suzhou Institute of Biomedical Engineering and Technology, China, People's Republic of	P5-B1-9 Large Aperture, Self-Focused, High-Frequency Ultrasound Transducers for Biomedical Applications Harold BARQUERO, PhD¹, Guillaume PIERRE² ¹R&D Engineer, SONAXIS SA, BESANCON, France, ²CEO, SONAXIS SA, BESANCON, France	P5-B2-7 Optimization and Characterisation of Bonding of Piezoelectric Transducers using Anisotropic Conductive Adhesive Gerard Cummins¹, Jun Gao¹, Rachael McPhillips², David Watson¹, Sandy Codrat², Marc Desmuellez² ¹Multimodal Sensing and Micromanipulation Group, School of Engineering and Physical Sciences, Heriot Watt University, Edinburgh, United Kingdom, ²Medical and Industrial Ultrasound Group, School of Engineering, University of Glasgow, Glasgow, United Kingdom		

Oral – Saturday, September 9, 2017						
08:00 am – 9:30 am	Session 1H. MBE: Cell Dynamics, and Microbubbles, and Sonoporation	Session 2H. MTC: Hard and ex vivo Human Tissue Characterization	Session 3H. MM: Super-Resolution and Contrast Imaging	Session 4H. MBF: Methods in Flow Studies: Phantoms and Algorithms	Session 5H. Flow Measurement and Wave Propagation	Session 6H. PPN - Phononics
	Chair: Alfred Yu University of Waterloo	Chair: Pascal Laugier Sorbonne Universities	Chair: Georg Schmitz Ruhr-Universität Bochum	Chair: Mathieu Pernot INSERM	Chair: Nishal Ramadas Honeywell	Chair: Alex Maznev MIT
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room
08:00 am	1H-1 a High-Speed Microscopic System for Observation of Bubble-Cell Interaction From a Lateral Direction Akane Isono ¹ , Nobuki Kudo ¹ ¹ Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Hokkaido, Japan	2H-1 in Vivo Radius Bone Evaluation of Teenagers by Modified Two Wave Ultrasound Apparatus Mami Matsukawa ¹ , Isao Mano ² , Kaoru Horii ² , Yutaro Yoneda ² , Shiori Umemura ³ , Etsuko Ozaki ³ ¹ Doshisha University, Japan, ² QYO Electric, Japan, ³ Kyoto Prefectural University of Medicine, Japan	3H-1 Two Stage Sub-Wavelength Motion Correction in Human Microvasculature for CEUS Imaging Sevan Harput ¹ , Kirsten Christensen-Jeffries ² , Yuanwei Li ¹ , Jemma Brown ² , Robert J. Eckersley ² , Christopher Dunsby ³ , Meng-Xing Tang ³ ¹ Department of Bioengineering, Imperial College London, London, United Kingdom, ² Biomedical Engineering Department, King's College London, London, United Kingdom, ³ Department of Physics and Centre for Pathology, Imperial College London, London, United Kingdom	4H-1 Real-Time Staggered PRF for Vector Doppler Blood Velocity Assessment Stefano Ricci ¹ , Luca Bassi ¹ , Alessandro Dall'Al ¹ , Riccardo Matera ¹ , Piero Tortoli ¹ ¹ Engineering Information Dept., Florence University, Firenze, FI, Italy	5H-1 Ultrasound Flow Mapping of 3D Turbulent Liquid Metal Flows Norman Thieme ¹ , Karl Buchner ² , Richard Nauber ¹ , Lars Bittner ³ , Olaf Pätzold ² , Jürgen Czarske ¹ ¹ Laboratory for Measurement and Sensor System Techniques, TU Dresden, Germany, ² TU Freiberg, Germany	6H-1 Coupling of Mechanical Resonators Under Surface Acoustic Wave Excitation Sarah Benhabane ¹ , Laetitia Ragui ¹ , Olivier Gaffie ¹ , Roland Salut ¹ , Valérie Soumami ¹ , Vincent Laude ¹ , Abdelkrim Khelif ¹ ¹ FEMTO-ST, CNRS, Université de Franche-Comté, Besançon, France
08:15 am	1H-2 Acoustic-Transfection for Gene Editing Using High Frequency Ultrasound Sangpil Yoon ¹ , Pengzhi Wang ² , Qm Peng ³ , Yingxiao Wang ² , K. Kirk Shung ¹ ¹ Department of Biomedical Engineering, University of Southern California, USA, ² Department of Bioengineering, University of California, San Diego, La Jolla, CA, USA	2H-2 Biological and Spatial Variability of Backscatter Coefficient Parameters in the Ex Vivo Human Uterine Cervix Andrew Santoso ¹ , Ivan Rosado-Mendez ¹ , Quinton Guerrero ¹ , Lindsey Drehal ¹ , Helen Fellous ^{1,2} , Timothy Hall ¹ ¹ Medical Physics, University of Wisconsin-Madison, Madison, Wisconsin, USA, ² Maternal Fetal Medicine, Intermountain Healthcare, Provo, Utah, USA	3H-2 Sparsity-Driven Super-Localization in Clinical Contrast-Enhanced Ultrasound Rund J.G. van Sloun ¹ , Oren Solomon ² , Yonina C. Eldar ² , Hessel Wijkstra ^{1,3} , Massimo Misch ¹ ¹ Eindhoven University of Technology, Eindhoven, Netherlands, ² Technion – Israel Institute of Technology, Haifa, Israel, ³ Academic Medical Center University of Amsterdam, Netherlands	4H-2 Ultrafast Vector Doppler using RF sub-Nyquist sampling Craig Madiona ¹ , Julia Faure ¹ , Damien Garcia ^{1,2} ¹ University of Montreal, Canada, ² CREATIS, France	5H-2 Two-Dimensional Flexural Ultrasonic Phased Array for Flow Measurement Lei Kang ¹ , Andrew Feeney ¹ , Riliang Su ² , David Lines ² , Axel Jaeger ³ , Han Wang ³ , Yavor Arnaudov ⁴ , Sivaram Ramadas ⁴ , Mario Kumik ³ , Steve Dixon ¹ ¹ University of Warwick, United Kingdom, ² Diagnostic Sonar Limited, United Kingdom, ³ Technische Universität Darmstadt, Germany, ⁴ Honeywell, United Kingdom	6H-2 Relation Between Electromagnetic Coupling Effects and Network Synthesis for Acoustic Wave Ladder Type Filters. Angel Triano ¹ , Jordi Verdu ¹ , Pedro de Paeo ¹ , Thomas Bauer ² , Karl Wagner ² ¹ TES, Universitat Autònoma de Barcelona, Cerdanyola del Vallès, Barcelona, Spain, ² RF360 Europe GmbH, Germany

08:30 am	1H-3 Insight Into the Plasma Membrane Resealing and Calcium Signaling Dynamics of Sonoporation Brandon Hefield¹, Xucai Chen¹, Simon Watkins², Fiordeliza Villanueva², ¹Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh, Pittsburgh, Pennsylvania, USA, ²Department of Cell Biology, University of Pittsburgh, Pittsburgh, PA, USA	2H-3 Relationships Between Cortical Bone Quality Biomarkers: Stiffness, Toughness, Mineralization, Cross-Links and Collagen Xiran Cai¹, Rémy Gauthier², Laura Perella¹, Hélène Follet¹, Evelyne Gineys², Max Langer⁴, Boliang Yu⁴, Cécile Olivier⁴, Françoise Peyrin⁴, David Mitton², Quentin Grimal¹, Pascal Laugier¹, ¹Sorbonne Universités, UPMC, INSERM UMR-S 1146, CNRS UMR 7371, Laboratoire d'Imagerie Biomédicale, Paris, France, ²Univ Lyon, Université Claude Bernard Lyon 1, INSERM, LYOS UMR 1033, Lyon, France, ³Univ Lyon, INSERM, UMR 5220, Lyon 1, CNRS UMR 5220, Villeurbanne Cedex, France	3H-3 Super-Resolution Ultrasound to Aid Testicular Lesion Characterisation Kirsten Jeffries¹, Dean Y Huang², Jenna Brown¹, Sevan Harput³, Christopher Dunby^{4,5}, Meng-Xing Tang¹, Paul S Sidhu², Robert Eckersley¹, ¹Biomedical Engineering, Kings College London, London, United Kingdom, ²Radiology, Kings College London, London, United Kingdom, ³Bioengineering, Imperial College London, London, United Kingdom, ⁴Physics, Imperial College London, London, United Kingdom, ⁵Centre for Histopathology, Imperial College London, London, United Kingdom	4H-3 an MRI-Compatible Mock Model for Intra-cardiac Flow Imaging Qiong He¹, Hang Gao², Aiqi Sun¹, Yunduo Li¹, Rui Li¹, Jan Dhooze², Jianwen Luo¹, ¹Department of Biomedical Engineering, Tsinghua University, China, People's Republic of, ²Department of Cardiovascular Imaging & Dynamics, KU Leuven, Belgium	5H-3 Ultrasound Flow Mapping in a Model of a Secondary Hydraulic Zinc-Air Battery Christian Kunsch¹, Lukas Feierabend², Richard Nauber¹, Lars Büttner¹, Jürgen Czarnecki¹, ¹Laboratory of Measurement and Sensor System Techniques, Technische Universität Dresden, Dresden, Germany, ²Microsystems & Fluid Mechanics, ZBT GmbH - the Fuel Cell Research Center, Duisburg, Germany	6H-2 Numerical and Experimental Demonstration of the Electrical Bragg Band Gaps in Piezoelectric Plates With a Periodic Array of Electrodes Clement Vasseur¹, Charles Croème¹, Bertrand Dubus¹, Jérôme Vasseur¹, Claude Prevot², Paolo Martins², Mai Pham Thi², Anne-Christine Hladky¹, ¹CNRS, Centrale Lille, ISEN, Univ. Lille, Univ. Valenciennes, UMR 8520 - IEMN, Lille, France, ²Thales Research and Technology, Palaiseau, France	7H-3 Temperature Compensated SAW With High Quality Factor Benjamin Abbott¹, Alan Chen¹, Tim Daniels¹, Kevin Gamble¹, Taeho Kook¹, Marc Solal¹, Kurt Steiner¹, Robert Aigner¹, Svetlana Malocha¹, Curtis Hella¹, Mark Gallagher¹, Jan Kuypers¹, ¹Qorvo, USA
08:45 am	1H-4 in Vivo Bioeffects From Phase Change and Microbubble Contrast Agents in the Rodent Kidney: Short Term and Long-Term Effects After Excitation With a Range of Mechanical Indices A. Gloria Nyankima¹, Rachel Ciaccio², Sandeep K. Kasoji¹, Juan D. Rojas¹, Kennita Johnson¹, Emily H. Chang³, Paul A. Dayton¹, ¹Biomedical Engineering, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, ²Veterinary Biosciences, the Ohio State University, Columbus, Ohio, USA, ³UNC Kidney Center and Division of Nephrology & Hypertension, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA	2H-4 Human Breast Tumor Characterization on Post-Surgical Mastectomy Specimens Using Harmonic Motion Imaging (HMI) Yang Han¹, Shutao Wang¹, Thomas Payen¹, Elisa Konofagou^{1,2}, ¹BME, Columbia University, New York, NY, USA, ²Radiology, Columbia University, New York, NY, USA	3H-4 Effects of Motion on High Frame Rate Contrast Enhanced Echocardiography and Its Correction Mathieu Toulemonde¹, Antonio Stanzola¹, Yuanwei Li¹, Robert Eckersley², Mengxing Tang¹, ¹Department of Bioengineering, Imperial College London, London, United Kingdom, ²King's College, United Kingdom	4H-4 the Spiral Flow Phantom: a New Tool for Vector Flow Estimator Performance Analysis Billy Y. S. Yui¹, Alfred C. H. Yui¹, ¹Schlegel Research Institute for Aging, University of Waterloo, Waterloo, Canada	5H-4 Ultrasonic Phased Array for Sound Drift Compensation in Gas Flow Metering Axel Jäger¹, Alexander Unger¹, Han Wang¹, Vávor Arnaudov², Lei Kang¹, Riliang Su¹, Dave Robert Eckersley³, Steve Dixon², Mario Kupnik¹, ¹Technische Universität Darmstadt, Darmstadt, Germany, ²University of Warwick, Coventry, United Kingdom, ³Diagnostic Sonar Limited, Livingston, United Kingdom, ⁴Honeywell, United Kingdom	6H-3 Focusing of Ultrasonic Waves in Water With a Flat Artificial Composite Plate Xiangxiang Xia^{1,2}, Feiyun Cai², Fei Li², Di Xu², Manzhu Ke¹, Zhengyou Liu¹, Hairong Zheng², ¹Key Laboratory of Artificial Micro- and Nano-Structures of Ministry of Education, School of Physics and Technology, Wuhan University, China, People's Republic of, ²Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of	

Oral – Saturday, September 9, 2017							
08:00 am – 9:30 am							
09:00 am	1H-5 Focused Ultrasound Setup for the Study of Acoustic Radiation Force Induced Biological Effects in Cells Sri Nivas Chandrasekaran ¹ , Sverre Holm ¹ , Fabrice Prieur ¹ ¹ Department of Informatics, University of Oslo, Oslo, Norway	2H-5 Assessment of Cortical Bone Pore Dimensions by High-Frequency Backscatter Vanite Kilappa ^{1,2} , Janos Hackenbeck ¹ , Gianluca Iori ¹ , Juan Du ¹ , Kay Raum ¹ ¹ Berlin-Brandenburg School for Regenerative Therapies, Charité-Universitätsmedizin Berlin, Berlin, Germany, ² Mango Solutions, Jyväskylä, Finland	3H-5 High Frame Rate, Three-Dimensional Passive Imaging of Bubble Clouds in Sonothrombolysis Using a Sparse Hemispherical Array Christopher Acevedo ^{1,2} , Ryan Jones ^{1,2} , Dave Goertz ^{1,2} , Meghan O'Reilly ^{1,2} , Kullervo Hynynen ^{1,2} ¹ Sunnybrook Research Institute, Toronto, Ontario, Canada, ² University of Toronto, Toronto, Ontario, Canada	4H-5 Singular Value Decomposition-Based Noise Equalization for Ultrafast Plane Wave Microvessel Imaging Pengfei Song ¹ , Armando Manduca ¹ , Joshua D. Trzasko ¹ , Shigao Chen ¹ ¹ Department of Radiology, Mayo Clinic College of Medicine, Rochester, Minnesota, USA, ² Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA	5H-5 Energy Distribution Analysis of Ultrasound Transmission Line Modeled by Cascade-Connection Resonators Keita Tachibana ¹ , Norio Tagawa ¹ , Takasuke Irie ^{1,2} , Masasumi Yoshizawa ¹ , Tadashi Moriya ¹ ¹ Department of System Design, Tokyo Metropolitan University, Tokyo, Japan, ² Microsonic Co., Ltd, Tokyo, Japan, ³ Tokyo Metropolitan College of Industrial Technology, Tokyo, Japan	6H-4 Acoustic Topological Insulator Based on Phononic Crystals Yuanchen Deng ¹ , Yun jing ¹ ¹ NC State university, USA	7H-4 Influence of Coupling Between Rayleigh and SH SAWs on Rotated Y-cut LiNbO₃ to Their Electromechanical Coupling Factor Yulin Huang ^{1,2} , Jingfu Bao ¹ , Xinyi Li ^{1,2} , Benfeng Zhang ^{1,3} , Gongbin Tang ^{2,3} , Tatsuya Omori ² , Ken-ya Hashimoto ^{2,3} ¹ University of Electronic Science and Technology of China, Chengdu, Sichuan, China, ² People's Republic of, ³ Chiba University, Chiba, Chiba, Japan, ³ Shanghai Jiao Tong University, Shanghai, China, People's Republic of
09:15 am	1H-6 New Insights in the Role of Reactive Oxygen Species in Mechanisms of Sonoporation: In-Vitro Validation and Molecular Dynamic Simulations Jean-Michel Escoffre ¹ , Pablo Campomanes ² , Moum Tarek ² , Avache Boukaz ¹ ¹ Imagerie et Cerveau, Université François-Rabelais, Inserm, Tours, France, ² CNRS, UMR 7565, Université de Lorraine, Vandœuvre-lès-Nancy, France	2H-6 Bone Matrix Elastic Properties Determined by FFT-Based Inverse Homogenization Xiran Cai ¹ , Laura Peralta ¹ , Ronald Brenner ² , Pascal Laugier ¹ , Quentin Grimal ¹ ¹ Sorbonne Universités, UPMC, INSERM UMR-S 1146, CNRS UMR 7371, Laboratoire d'Imagerie Biomédicale, Paris, France, ² Sorbonne Universités, UPMC, CNRS UMR 7190, Institut Jean le Rond d'Alembert, Paris, France	3H-6 Multicolor Perfluorocarbon Nanodroplets for Multiplexed Ultrasound and Photoacoustic Imaging Daniela Santesteban ¹ , Kristina Hallam ¹ , Steven Yarmoska ¹ , Stanislav Emelianov ^{1,2} ¹ Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA, ² School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA	4H-6 Beamforming Improvement for Non-Contrast Perfusion Imaging with Adaptive Tissue Clutter Demodulation Jaime Tierney ¹ , Brett Byram ¹ ¹ Biomedical Engineering, Vanderbilt University, USA	5H-6 Real-Time Staggered PRF for Extended In-Line Industrial Fluids Characterization Stefano Ricci ¹ , Johan Wiklund ² , Valentino Meacci ¹ ¹ Engineering Information Dept., Florence University, Firenze, FI, Italy, ² Bioscience and Materials Research Institutes of Sweden (RISE), Göteborg, Sweden	6H-5 Stochastic Generation of the Phononic Band Structure of Lossy and Infinite Crystals Maria Korotyaeva ¹ , Vincent Laude ² ¹ Institut FEMTO-ST, Université de Bourgogne Franche-Comté, Besancon, France, ² Institut FEMTO-ST, Université de Bourgogne Franche-Comté, CNRS, Besancon, France	7H-5 Full 3D Simulation of SAW Resonators Using Hierarchical Cascading FEM Marc Solal ¹ , Alireza Tajiri ¹ ¹ Qorvo Inc., Apopka, FL, USA

NOTES

Oral – Saturday, September 9, 2017							
10:30 am – 12:00 pm	Session 11. MTH: Therapeutic Ultrasound Applications	Session 21. MIM: Machine Learning for Image Reconstruction and Interpretation	Session 31. MCA: Contrast Imaging: Beamforming and Signal Processing	Session 41. MBF: Vector Flow Imaging: Applications and Methods	Session 51. MEL: Cardiac Strain Imaging	Session 61. Advanced Transducer Materials and Designs	Session 71. PTF – Thin Films
	Chair: Ralf Seip Sonacore Medical	Chair: Johan Bosch Erasmus Medical Center	Chair: Ayache Bouakaz INSERM	Chair: Jorgen Jensen Technical University of Denmark	Chair: Azra Alizad Mayo Clinic	Chair: Sandy Cochran University of Glasgow	Chair: John Larson-Broadcom Ltd
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room	Empire Room
10:30 am	11-1 Combining Ultrasound Ablation with Immunotherapy: Opportunities and Challenges Brett Z. Fife ¹ , Matthew T. Silvestri ¹ , Michael Chavez ¹ , Elizabeth S. Ingham ¹ , Lisa M. Mahakian ¹ , Azadeh Kheirloomoom ¹ , Yu Liu ¹ , Sarah M. Tam ¹ , Samantha Tucci ¹ , Andrew W. Wong ¹ , Katherine W. Ferrara ¹ ¹ Biomedical Engineering, University of California Davis, USA	21-1 Machine Learning in Medical Ultrasound To Assist Clinical Diagnosis J. Alison Noble ¹ ¹ University of Oxford, Oxford, United Kingdom	31-1 Dual Frequency Imaging of Microbubbles Using 1.7-MHz Transmit Stacks Parallel To a 21-Mhz Receive Array Emmanuel Cherin ¹ , Jianhua Yin ¹ , Alex Forbrich ² , Christine Demore ^{2,3} , Paul Dayton ¹ , F. Stuart Foster ^{1,3} ¹ Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada, ² FLUJIFILM VisualSonics, Toronto, Ontario, Canada, ³ Medical Biophysics, University of Toronto, Toronto, Ontario, Canada, ⁴ Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, North Carolina, USA	41-1 Vector Flow Imaging of Fetal Circulation using Diverging Waves Solveig Fadnes ¹ , Eva Tegmønder ^{2,3} , Siri Ann Nyrnes ^{1,4} , Lasse Lovstakken ¹ ¹ Centre for Innovative Ultrasound Solutions (CIUS), NTNU, Norway, ² National Center for Fetal Medicine, St. Olav's University Hospital, Norway, ³ Dept. of Laboratory Medicine, Children's and Woman's Health, NTNU, Norway, ⁴ Dept. of Pediatrics, St. Olav's University Hospital, Norway	51-1 3-D Electromechanical Wave Imaging in the Heart in Silico and in Vivo Julien Grondin ¹ , Daifang Wang, ² Elaine Wan ¹ , Natalia Trayanova ² , Elisa Konofagou ¹ ¹ Columbia University, USA, ² Johns Hopkins University, USA	61-1 Piezoelectric Materials and Application Oriented Figures of Merit Shujun Zhang ¹ , Fei Li ² , Thomas Shroff ² ¹ ISEM/AIMM, University of Wollongong, Wollongong, NSW, Australia, ² penn State University, USA	71-1 Enhanced Piezoelectric Properties of C-Axis Textured Aluminum Scandium Nitride Thin Films With High Scandium Content: Influence of Intrinsic Stress and Sputtering Parameters Stefan Mertin ¹ , Vladimir Pashchenko ¹ , M. Fazel Parspourkolour ¹ , Cosmin S. Sandul ¹ , Bernd Heinz ² , Oliver Rattunde ³ , Gabriel Christmann ³ , Marc-Alexandre Dubois ³ , Paul Murali ¹ ¹ Electroceraic Thin Films Group, EPFL, Lausanne, Switzerland, ² Evotec AG, Trübbach, Switzerland, ³ CSEM SA, Neuchâtel, Switzerland
10:45 am	11-2 Development of a Therapeutic Capsule Endoscope for Treatment in the Gastrointestinal Tract: Bench Testing to Translational Trial Fraser Stewart ¹ , Ian P Newton ¹ , Benjamin F Cox ² , Zhihong Huang ³ , Inke Nätthke ¹ , Sandy Cochran ⁴ ¹ School of Life Sciences, University of Dundee, Dundee, United Kingdom, ² School of Medicine, University of Dundee, Dundee, United Kingdom, ³ School of Science and Engineering, University of Dundee, Dundee, United Kingdom, ⁴ School of Engineering, University of Glasgow, Glasgow, United Kingdom		31-2 Microbubble Signal Classification Using NSSA- Based Filtering Methods Elizabeth R. Herbst ¹ , Shiving Wang ¹ , Alexander L. Klibanov ^{1,2} , F. William Mauldin Jr., John A. Hossack ¹ ¹ Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA, ² Division of Cardiovascular Medicine, Charlottesville, Virginia, USA	41-2 Time-Resolved Vector Projectile Imaging of Urinary Flow Dynamics Takuro Ishii ¹ , Billy Y. S. Yui ¹ , Alfred C. H. Yu ¹ ¹ Schlegel Research Institute for Aging, University of Waterloo, Waterloo, Ontario, Canada	51-2 in Vivo Mapping of Transverse Shear and Principal Strains in Interventricular Septum Using Coherent Diverging Wave Compounding He Li ¹ , Yuexin Guo ¹ , Wei-Ning Lee ¹ , Zhe Zhen ² , Songyan Liao ² , Hung Fat Tse ² ¹ Department of Electrical and Electronic Engineering, the University of Hong Kong, Hong Kong, ² Department of Medicine, the University of Hong Kong, Hong Kong		71-2 High Electromechanical Coefficient K _t ² =19% Thick Scaln Piezoelectric Films for Ultrasonic Transducer in Low Frequency of 80 MHz Ko-Hei Sano ¹ , Rei Karasawa ¹ , Takahiko Yanagihara ^{1,2} ¹ Waseda university, Japan, ² JST- PRESTO, Japan

11:00 am	21-3 Self-Adaptive Time Reversal Cavity for Ultrasound Therapy Through the Ribcage Justine Robin¹, Bastien Arnal¹, Mickaël Tanter¹, Mathieu Pernot¹ ¹Institut Langevin (I2SPCI Paris, Université P7, PSL Research University, CNRS UMR 7587, INSERM U979), Paris, France	21-2 a Deep Learning Approach To Ultrasound Image Recovery Dimitris Perdios¹, Adrien Besson¹, Marcel Arditi¹, Jean-Philippe Thiran^{1,2} ¹Signal processing laboratory (LTS5), Ecole Polytechnique Fédérale de Lausanne, Lausanne, VD, Switzerland, ²Department of Radiology, University Hospital Center (CHUV) and University of Lausanne (UNIL), Lausanne, VD, Switzerland	31-3 Single Microbubble Measurements of Temperature Dependent Viscoelastic Properties Jordan Lum¹, David Stobbe¹, Todd Murray¹, Mark Borden¹ ¹Department of Mechanical Engineering, University of Colorado, Boulder, Colorado, USA	41-3 Real-Time Multi-Line Vector Doppler Analysis Based on Layered Array Beams Alessandro Ramalli¹, Stefano Ricci¹, Piero Tortoli¹ ¹Department of Information Engineering, University of Florence, Florence, Italy	51-3 Ultrafast Myocardial Elastography Using Coherent Compounding of Diverging Waves During Simulated Exercise Diya Wang¹, Jonathan Poree¹, Boris Chayer¹, Amir Hodzie^{1,2}, Damien Garcia^{3,4}, François Tournoux^{1,2}, Guy Cloutier^{1,3} ¹Laboratory of Biomechanics and Medical Ultrasonics, Research Center, University of Montreal Hospital, Montreal, Quebec, Canada, ²Department of Echocardiography, University of Montreal Hospital, Montreal, Quebec, Canada, ³Department of Radiology, Radio-Oncology and Nuclear Medicine, Institute of Biomedical Engineering, University of Montreal, Montreal, Quebec, Canada, ⁴CREATIS, Lyon, France	61-2 Piezoelectric Single Crystal Standard Lynn Ewart¹, Zuo-Guang Ye² ¹U.S. Navy, USA, ²Simon Fraser University, Canada	71-3 Monitoring of Morphological Change of Deposited Metallic Thin Film Through Internal Friction of Noncontacting Piezoelectric Oscillator Nobutomo Nakamura¹, Hirotsugu Ogi¹ ¹Graduate School of Engineering Science, Osaka University, Japan
11:15 am	21-4 the Application of Antivascular Photo-Mediated Ultrasound Therapy in Removing Microvessels in the Eye Xinmai Yang¹, Haonan Zhang², Jia Li², Yannis Paulus², Xueding Wang² ¹University of Kansas, USA, ²University of Michigan, USA	21-3 Reverberation Suppression Using Dictionary Learning in Photoacoustic Microscopy Sushanth Sathyanarayana¹, Bo Ning², Song Hu¹, John Hossack¹ ¹Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA, ²Biomedical Engineering, Johns Hopkins University, Baltimore, Maryland, USA	31-4 Differentiation of Vein and Lymphatic Vessel by Photoacoustic Imaging System With Parabolic Array Transducer and Tunable Laser Takuya Tabata¹, Ryo Nagaoka¹, Shin Yoshizawa¹, Shin-ichiro Umemura¹, Yoshifumi Saito¹ ¹Tohoku University, Japan	41-4 a Doppler-Based Regularization Problem for Intraventricular Vector Flow Mapping Kondo Claude Assi¹, Etienne Gay¹, Christophe Chala^{1,2}, Simon Mendez², Franck Nicoud², Damien Garcia^{1,3} ¹University of Montreal, Canada, ²University of Montpellier, France, ³CREATIS, France	51-4 Comparison Between Fully and Partially Focused Transmit Strategies in Transthoracic Cardiac Strain Estimation Vincent Saysong¹, Julien Grondin¹, Elisa Sené^{1,2} ¹Department of Biomedical Engineering, Columbia University, New York, New York, USA, ²Department of Radiology, Columbia University, New York, New York, USA	61-3 Design and Characterization of an MR-compatible FUS Randomized Array for Transcranial Neuromodulation Vandiver Chaplin¹, Erik Dumont², Charles Caskey^{1,3} ¹Institute of Imaging Science, Vanderbilt University, Nashville, TN, USA, ²Image Guided Therapy, Passac, France, ³Department of Radiology and Radiological Sciences, Vanderbilt University, Nashville, TN, USA	71-4 Ex-Situ AlN Seed Layer for (0001)-Textured Al_{0.85}Sc_{0.15}N Thin Films Grown on SiO₂ Substrates for Shear Mode Resonators Mohammad Fazel Parsapour Kolour¹, Cosmin Sandu¹, Vladimir Pashchenko¹, Stefan Martin¹, Nicolas Kur², Pascal Nicolay³, Paul Murali⁴ ¹Electroceramic Thin Films Group, EPFL, Lausanne, Switzerland, ²Department of Microsystems Engineering, IMTEK, University of Freiburg, Freiburg, Germany, ³CTR Carinthian Tech Research AG, Villach, Austria, ⁴Electroceramic Thin films group, EPFL, Lausanne, Switzerland

Oral – Saturday, September 9, 2017							
10:30 am – 12:00 pm	11:30 am	21-4 Tissue Motion Estimation Using Dictionary Learning: Application To Cardiac Amyloidosis	31-5 Acoustic Microbubble Trapping in Blood Mimicking Fluid	41-5 Accuracy and Precision Study of Plane Wave Vector Flow Imaging for Laminar and Complex Flow in Vivo	51-5 Comparison of 3D Tissue Motion Estimation Methods Using Transverse Oscillations	61-4 Design and Evaluation of Phased Array Transducers for Deep Brain Stimulation in Nucleus Accumbens Region of the Rat Brain	71-5 Film Growth of C-Axis Parallel Oriented ZnO on Entire Surface of Silica Glass Pipe for SH-SAW Pipe Sensor
Tania Singh ¹ , Bogdan Balteanu ¹ , Ivan Suarez Castellanos ¹ , Aleksandar Jeremic ² , Vesna Zderic ¹	Nora Ouzir ¹ , Olivier Lairez ² , Adrian Basarab ³ , Jean-Yves Tourneris ¹	Luzhen Nie ¹ , Sevan Haupt ^{1,2} , James McLaughlin ^{1,3} , David M.J. Cowell ¹ , Thomas Carpenter ¹ , Steven Freear ¹	Jonathan Porée ¹ , Thomas Delfieux ¹ , Mathieu Pernot ¹ , Charlie Demene ¹ , Jerome Baranger ¹ , Mickael Tanter ¹	Solveig Beeb ¹ , Sébastien Salles ² , Hans Torp ²	Arif Ergun ¹ , Mehmet Kilinc ¹ , Mehmet Aydın ¹ , Ayhan Bozkurt ² , Erdem Devoci ³	Yuta Takamura ¹ , Shinji Takayanagi ² , Mami Matsukawa ³ , Chizu Ishida ³ , Takahiko Yanagitani ⁴	
¹ Biomedical Engineering, the George Washington University, Washington, District of Columbia, USA, ² Biological Sciences, the George Washington University, Washington, District of Columbia, USA	¹ IRIT, UMR CNRS 5505, University of Toulouse, Toulouse, France, ² INSERM, UMR 1048, Institut des Maladies Métaboliques et Cardiovasculaires, CHU de Toulouse, Université Paul Sabatier, Toulouse, France, ³ IRIT, UMR CNRS 5505, University of Toulouse, Toulouse Cedex, France	¹ Ultrasonics and Instrumentation Group, School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom, ² Department of Bioengineering, Imperial College London, United Kingdom, ³ Division of Biomedical Imaging, University of Leeds, United Kingdom	¹ Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill and North Carolina State University, Chapel Hill, North Carolina, USA	¹ Norwegian University of Science and Technology, Trondheim, Norway, ² Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Norway	¹ Electrical and Electronics Engineering, TOBB, University of Economics, Ankara, Turkey, ² Electrical and Electronics Engineering, Sabanci University, Turkey, ³ Department of Psychiatry, Bezmialem University School of Medicine, Turkey	¹ Doshisha University, Kyoto, Japan, ² Nagoya Institute of Technology, Nagoya, Aichi, Japan, ³ Doshisha University, Japan, ⁴ Waseda University, Japan	
11:45 am	21-5 Machine Learning to Understand Anthropomorphic Modulators of Spatiotemporal Myocardial Mechanics	31-6 Adaptive Beamforming Contrast Enhanced Super Resolution Imaging for Improved Sensitivity and Resolution in Deep Tissues	41-6 High-Resolution Vector Doppler for Cerebral Blood Flow Estimation	51-6 Assessment of Left Bundle Branch Related Strain Dyssynchrony: a Comparison With Tagged MRI	61-5 Design and Characterization of a 2-Dimensional Focused 1.5-MHz Ultrasound Array With a Compact Spiral Arrangement of 256 Circular Elements	71-6 Effects of Negative Oxygen Ions Generated During Sc Ingot Sputtering on Electromechanical Coupling of ScAlN film	
Maxim Bez ¹ , Dmitry Sheyn ² , Wafa Tawackoli ² , Pablo Avalos ² , Galina Shapiro ¹ , Joseph Giacon ² , Xiaoyu Dai ² , Shiran BenDavid ² , Jayne Gavri ² , Hani Awad ³ , Hyun Bae ² , Eric Ley ² , Thomas Kremer ² , Zulma Gazit ² , Katherine Ferrara ⁴ , Gadi Pelled ¹ , Dan Gazit ²	Hanan Khamis ^{1,2} , Peter Claes ³ , Nicholas Cauwenberghs ⁴ , Dan Adam ¹ , Tatiana Kuznetsova ¹ , Jan D'hooge ²	David Espindola ¹ , Fanglue Lin ¹ , Danai Soulioti ¹ , Paul a Dayton ¹ , Gianmarco Pinton ¹	Jonathan Porée ¹ , Thomas Delfieux ¹ , Mathieu Pernot ¹ , Charlie Demene ¹ , Jerome Baranger ¹ , Mickael Tanter ¹	Louis Fixsen ¹ , Anouk de Lepper ² , Marcel van 't Veer ^{1,2} , Marc Strik ³ , Lars van Middendorp ² , Frans van de Vosse ¹ , Frits Prinzen ³ , Patrick Houthuizen ¹ , Richard Lopata ¹	Oleg Sapozhnikov ^{1,2} , Mohamed Ghanem ¹ , Adam Maxwell ³ , Pavel Rosnitskiy ² , Petr Yuldashev ² , Wayne Kreider ¹ , Bryan Cunitz ¹ , Michael Bailey ^{1,2} , Vera Khokhlova ^{1,2}	Shinji Takayanagi ¹ , Takahiko Yanagitani ²	
¹ The Hebrew University-Hadassah Faculty of Dental Medicine, Israel, ² Cedars-Sinai Medical Center, USA, ³ Rochester University, USA, ⁴ University of California, Davis, USA	¹ Lab for Ultrasound Signals and Image Processing and Modeling, Department of Biomedical Engineering, Technion, Haifa, Israel, ² Lab on Cardiovascular Imaging & Dynamics, Department of Cardiovascular Sciences, KU Leuven, Belgium, ³ Lab on ESAT-PSI, Processing Speech and Images, Department of Electrical Engineering, KU Leuven, Belgium, ⁴ Lab on Hypertension and Cardiovascular Epidemiology, Department of Cardiovascular Sciences, KU Leuven, Belgium	¹ Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill and North Carolina State University, Chapel Hill, North Carolina, USA	¹ Institut Langevin (ESPCI ParisTech, PSL Research University, CNRS UMR 7587, INSERM U979), Paris, France	¹ Endhoven University of Technology, Netherlands, ² Catharina Ziekenhuis Eindhoven, Netherlands, ³ Maastricht University, Netherlands	¹ Applied Physics Laboratory, University of Washington, Seattle, Washington, USA, ² Physics Faculty, Moscow State University, Moscow, Russian Federation, ³ Department of Urology, University of Washington School of Medicine, Seattle, Washington, USA	¹ Nagoya Institute of Technology, Nagoya, Japan, ² Waseda University, Japan	

NOTES

SATURDAY ORAL

100

02:00 pm	11-2 Elucidating the Biophysical Mechanisms of Ultrasonic Neuromodulation Sangjin Yoo¹, Tomo Sato², Doris Tsoo², Mikhail Shapiro¹ ¹Divisions of Chemistry and Chemical Engineering, Caltech, Pasadena, California, USA, ²Divisions of Biology and Biological Engineering, Caltech, Pasadena, California, USA	21-3 Fast and Fully Automatic 3D Left Ventricle Segmentation Using Shape-Based B-Spline Explicit Active Surfaces João Pedrosa¹, Sandro Queiroz², Olivier Bernard³, Jan Engvall⁴, Thor Edvardsen⁵, Elke Nagel⁶, Jan D'hooge¹ ¹KU Leuven, Leuven, Vlaams Brabant, Belgium, ²University of Minho, Portugal, ³University of Lyon, France, ⁴Linköping University, Sweden, ⁵Oslo University Hospital, Norway, ⁶University Hospital Frankfurt/Main, Germany	31-3 Nanobubble Contrast Agents Enhance Ultrasound Imaging of Prostate Tumors in Mice Jacob L. Lilly^{1,2}, Hansheng Xia^{1,2}, Afiana Akhter^{1,2}, Gopalakrishnan Ramamurthy^{1,2}, James P. Bashion^{1,2}, Agata A. Exner^{1,2} ¹Case Center for Imaging Research, Case Western Reserve University, Cleveland, OH, USA, ²Radiology, Case Western Reserve University, Cleveland, OH, USA	41-3 Volumetric Imaging Using Adult Matrix TEE With Separated Transmit and Receive Array Deep Bera¹, Franc van den Adel², Nikola Radeljac-Jakic², Boris Lippe², Mehdi Soozandeh¹, Michel Perle¹, Martin Verweij¹, Pieter Kruijsing¹, Verna Daeichun¹, Hendrik Vos^{1,3}, Johan Bosch¹, Nico de Jong^{1,3} ¹Erasmus Medical Center, Rotterdam, Netherlands, ²Oldelft Ultrasound, Delft, Netherlands, ³Delft University of Technology, Delft, Netherlands	51-3 Suppression of Reflected Waves with High-resolution Radon Transform for Accurate Measurement of Regional Pulse Wave Velocity Chengyu Huang¹, Jianwen Luo¹ ¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of	61-3 Micromachined 1-3 Composite Dual Frequency IVUS Array for Contrast Enhanced Intravascular Ultrasound Imaging Sibo Li¹, Huaiyi Wol¹, Jinwook Kim¹, Sunny Kasoji², Paul A. Dayton³, Xiaoming Jiang¹ ¹Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC, USA, ²Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, North Carolina, USA	71-3 an 8-Channel CMUT Chemical Sensor Array on a Single Chip Quintin Stedman¹, Kwan Kyu Park², Butrus T. Khun-Yakub¹ ¹Stanford University, Stanford, CA, USA, ²Hanyang University, Korea, Republic of
02:15 pm	11-3 Feasibility and Main Mechanisms Underlying in Vivo Ultrasound Neurostimulation of the Ventral Nerve Cord's Giant Axons of Lumbricus Terrestris Jérémy Vion¹, W. Apoutou N'Djin¹, Jahan Tavakkoli², Jean-Louis Metas¹, Jean-Yves Chapelon¹ ¹Therapeutic Applications of Ultrasound, INSERM, Lyon Cedex 03, France, ²Department of Physics, Ryerson University, Toronto, Ontario, Canada	21-4 High Frame Rate, Wide-Angle Tissue Doppler Imaging in Real-Time Alessandro Ramalli¹, Francesco Guidi¹, Alessandro Dallai¹, Enrico Boni¹, Ling Tong², Jan Dhooze³, Piero Tortoli¹ ¹Department of Information Engineering, University of Florence, Florence, Italy, ²Center for Bio-medical Imaging Research, Dept. of Biomedical Engineering, School of Medicine, Tsinghua University, China, ³People's Republic of, Lab. on Cardiovascular Imaging & Dynamics, Dept. of Cardiovascular Sciences, KU Leuven, Belgium	31-4 Assessment of 3D Dynamic Contrast-Enhanced Ultrasound of Liver Metastases From Gastrointestinal Tumors To Overcome Sampling Errors: Assessment of Feasibility and Reproducibility Ahmed El Kafas¹, Isabelle Durol¹, Rosa Sigris¹, George Fisher¹, Sumitha Bachawal¹, Huijun Wang¹, Jarrett Rosenber¹, Dimitre Hristov¹, Juergen Willmann¹ ¹Radiology, Stanford University, USA, ²Medicine, Stanford University, USA, ³Radiation Oncology, Stanford University, USA	41-4 Improved Plane Wave Ultrasound Image Reconstruction Using a Deconvolution-Based Fourier Domain Approach Chuan Chen¹, GAGM Hendriks¹, HHG Hansen¹, CL De Korte^{1,2} ¹dept. of Radiology, Medical Ultrasound Imaging Center (MUSIC), Radboud university medical center, Nijmegen, Netherlands, ²Faculty of Science and Technology, Physics of Fluids Group, University of Twente, Twente, Netherlands	51-4 Development and Mechanical Evaluation of Nonlinear Anisotropic Aortic Models for in Vitro Experimentation Miguel Bernal¹, Jorge Saldarraga¹, John Bustamante¹, Cecilia Cabeza¹, Carlos Negreira¹, Javier Brum¹ ¹Grupo de Dinámica Cardiovascular, Universidad Pontificia Bolivariana, Medellín, Colombia, ²Grupo de Investigación sobre Nuevos Materiales, Universidad Pontificia Bolivariana, Medellín, Colombia, ³Grupo de Mecánica Estadística y Física No Lineal, Instituto de Física, Facultad de la Ciencias, Universidad de la República, Montevideo, Uruguay, ⁴Laboratorio de Acústica Ultrasonora, Instituto de Física, Facultad de la República, Montevideo, Uruguay	61-4 Forward-Looking IVUS Transducer with Front-End ASIC for 3D Imaging Jovana Janjic¹, Mingliang Tan², Chao Chen¹, Zhao Chen¹, Emile Noodhout¹, Zu-yao Chang², Gijs van Soest¹, Martin Verweij¹, Antonius F. W. van der Steen¹, Michel Perle¹, Nico de Jong¹ ¹Biomedical Engineering, Erasmus MC, Netherlands, ²Electronic Instrumentation Laboratory, Delft University of Technology, Netherlands, ³Lab. of Acoustical Wavefield Imaging, Delft University of Technology, Netherlands	71-4 AlN/ZnO/LiNbO₃ Packageless Structure As a Low-Profile Sensor for On-Body Applications Cécile Fior¹, Mohammed Moutaouekil¹, Florian Bartoli^{1,2}, Harshad Mishra¹, Sami Hage-Ali¹, Stefan Mc Murty¹, Philippe Piguet¹, Thierry Aubert², Olivier Bou Matar³, Abdelkrim Talbi³, Omar Elmazra¹ ¹Institut Jean Lamour UMR 7198, Université de Lorraine - CNRS, Nancy, France, ²LMOPS EA 4423, CentraleSupélec - Université de Lorraine, Metz, France, ³LIA LEMAC/LICS - IEMN UMR CNRS 8520, ECLille - USTL, PRES Université Lille Nord de France, Villeneuve d'Ascq, France
02:30 pm	11-4 Ultrasound Stimulation Enhances the Function Encoding of Bushy Cells in the Rat Anteroventral Cochlear Nucleus Zhengrong Lin¹, Lili Niu¹, Long Meng¹, Xiaowei Huang¹, Wei Zhou¹, Haorong Zheng¹ ¹Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China, People's Republic of	21-5 Translation of Fetal Short-lag Spatial Coherence (SLSC) Imaging into Clinical Practice: a Pilot Study Will Long¹, Dongwoon Hyun¹, Kingshuk Choudhury^{2,3}, David Bradway¹, Patricia McNally⁴, Sarah Ellesiad⁴, Gregg Trahey^{1,2} ¹Biomedical Engineering, Duke University, Durham, NC, USA, ²Radiology, Duke University, Durham, NC, USA, ³Bioinformatics and Bioinformatics, Duke University, Durham, NC, USA, ⁴Obstetrics and Gynecology, Duke University, Durham, NC, USA	31-5 Evaluation of Transarterial Chemoembolization for Liver Cancer using 3D Contrast Enhanced Ultrasound Time-Intensity Curve Analysis Kibo Nam¹, Maria Stanczak¹, Flemming Forsberg¹, Colette Shaw¹, John Eisenbrey¹ ¹Radiology, Thomas Jefferson University, USA	41-5 Orthogonal Goley Pairs-Coded Diverging Wave Compounding for High-Quality and High-Framerate Ultrasound Imaging Feifei Zhao¹, Jianwen Luo¹ ¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of	51-5 Guided Wave Elastography of Press-Stressed Thin-Walled Soft Tissues Guo-Yang Li¹, Qiong He¹, Robert Mangan², Guo-Qiang Xu¹, Jianwen Luo¹, Michel Destradre¹, Yanping Cao¹ ¹Tsinghua University, China, People's Republic of, ²National University of Ireland Galway, China, People's Republic of	61-5 Intravascular Shear Wave Propagation using Acoustic Radiation Force Generation from a 4.6 Fr Transducer Element Arsenii Telichev¹, Carl Henckhoft¹, Dongwoon Hyun^{2,3}, Jeremy Dahl¹ ¹Radiology, Stanford University, Stanford, CA, USA, ²Biomedical Engineering, Duke University, Durham, NC, USA, ³Bioengineering, Stanford University, Stanford, CA, USA	71-5 a 3.5 GHz Hybrid Wideband RF Filter Using AlN S1 Lamb Mode Resonator Anning Gao¹, Jie Zou¹, Songbin Gong¹ ¹Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA, ²Department of Mechanical Engineering, University of California, Berkeley, CA, USA

Oral – Saturday, September 9, 2017						
01:30 pm – 03:00 pm	02:45 pm	2J-6 Investigating the Impact of Elevated Acoustic Output in B-Mode Harmonic Imaging and Harmonic Motion Tracking	3J-6 Contrast-Enhanced Ultrasound (CEUS) in Patients With Chronic Kidney Disease (CKD)	4J-6 Design of an Angular Weighting Template for Coherent Plane Wave Compounding in Fourier Domain	5J-6 Finite Element Models of Wave Propagation in Embedded Vessels With Simulated Plaques	6J-6 Fabrication and Performance of a 128-Element Crossed-Electrode Relaxor Array for a novel 3D Imaging Approach
1J-5 Study of Calcium-Dynamics in Ultrasound-Stimulated Secretory Events in Pancreatic Beta Cells Ivan Suarez Castellanos¹, Andrew Chen¹, Aleks Klimas¹, Emilia Encheva¹, Tania Singh¹, Bogdan Balteanu¹, Aleksandar Jeremic², Joshua Cohen³, Vesna Zelenic¹ ¹Department of Biomedical Engineering, the George Washington University, Washington, DC, USA, ²Department of Biological Sciences, the George Washington University, Washington, DC, USA, ³The GW Medical Faculty Associates, Washington, DC, USA	2J-6 Investigating the Impact of Elevated Acoustic Output in B-Mode Harmonic Imaging and Harmonic Motion Tracking Yufeng Deng¹, Mark Palmeri¹, Ned Rouze¹, Clare Haysiead², Kathryn Nighingale¹ ¹Biomedical Engineering, Duke University, Durham, USA, ²Radiology, Duke University, Durham, USA	3J-6 Contrast-Enhanced Ultrasound (CEUS) in Patients With Chronic Kidney Disease (CKD) Anush Sridharan¹, Sandeep K. Kasoji¹, Emily H. Chang², Paul A. Dayton¹ ¹Biomedical Engineering, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, ²UNC Kidney Center, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA	4J-6 Design of an Angular Weighting Template for Coherent Plane Wave Compounding in Fourier Domain Chuan Chen¹, GAGM Hendriks¹, HHG Hansen¹, CL de Kort^{1,2} ¹dept. of Radiology, Medical UltraSound Imaging Center (MUSIC), Radboud university medical center, Nijmegen, Netherlands, ²Physics of Fluids Group, University of Twente, Twente, Netherlands	5J-6 Finite Element Models of Wave Propagation in Embedded Vessels With Simulated Plaques Matthew Urban^{1,2}, Kent Carlson², Dan Dragomir Daescu² ¹Department of Radiology, Mayo Clinic College of Medicine and Science, Rochester, MN, USA, ²Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine and Science, Rochester, MN, USA	6J-6 Fabrication and Performance of a 128-Element Crossed-Electrode Relaxor Array for a novel 3D Imaging Approach Katherine Latham¹, Christopher Cerio^{1,2}, Christopher Samson¹, Roger Zemp², Jeremy Brown¹ ¹School of Biomedical Engineering, Dalhousie University, Canada, ²Electrical and Computer Engineering, University of Alberta, Canada	7J-6 Transverse Mode Suppression in the AIN Lamb Wave Resonators by "Piston Mode" Jie Zou¹, Chih-Ming Lin¹, CS Lam¹ ¹Skyworks Solutions, Irvine, California, USA

Oral – Saturday, September 9, 2017							
04:00 pm – 05:30 pm		Oral – Saturday, September 9, 2017					
	Session 1K. MTH: Ultrasound Mediated Delivery	Session 2K. MEL: Elastography in Clinical Application	Session 3K. MCA: Microbubbles Localization Microscopy 2	Session 4K. MSP: Optimizing Imaging Performance	Session 5K. MIM: Medical Imaging	Session 6K. Novel Transducers and Transducer Applications	Session 7K. PJM - Ultrasonic Motors and High Intensity Applications
	Chair: Elisa Konofagou Columbia University	Chair: Caterina Gallippi University of North Carolina	Chair: Tomas Jansson Lund University	Chair: Michael Insana University of Illinois at Urbana-Champaign	Chair: Roger Zemp University of Alberta	Chair: Scott Smith GE Global Research	Chair: Margaret Lucas University of Glasgow
	Regency Ballroom	Ambassador Ballroom	Palladian Room	Diplomat Room	Blue Room	Hampton Room	Empire Room
04:00 pm	1K-1 Subwavelength Far-Field Ultrasound Targeted Drug-Delivery Vincent Hingor ¹ , Marine Bezagu ¹ , Claudia Errico ¹ , Yann Dessailly ¹ , Romann Bocheux ¹ , Mickael Tanter ¹ , Olivier Couture ¹ ¹ Institut Langevin (CNRS, ESPCI, INSERM), Paris, France	2K-1 Time-Shifted Multi-Tracking of Shear Waves for the Characterization of Scleral Biomechanics Heechul Yoon ¹ , Suhyun Park ² , Salavat Aglyamov ³ , Stanislav Emelinov ^{1,4} ¹ School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA, ² School of Electrical and Electronics Engineering, Chung-Ang University, Korea, Republic of, ³ Department of Biomedical Engineering, the University of Texas at Austin, USA, ⁴ Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA	3K-1 Investigation of Microbubble Detection Methods for Super-Resolution Imaging of Microvasculature Jemma Brown ¹ , Kirsten Christensen-Jeffries ¹ , Sevan Harput ² , Meng-Xing Tang ² , Chris Dunsky ^{3,4} , Robert Eckersley ¹ ¹ Imaging Sciences & Biomedical Engineering, King's College London, London, United Kingdom, ² Department of Bioengineering, Imperial College London, London, United Kingdom, ³ Department of Physics, Imperial College London, London, United Kingdom, ⁴ Centre for Histopathology, Imperial College London, London, United Kingdom	4K-1 Adaptive Ultrasound Clutter Rejection Through Spatial Eigenvector Filtering Francois Vignon ¹ , Jun Seob Shin ² , Sheng-Wen Huang ² , Jean-Luc Robert ² ¹ Philips Research North America, Cambridge, Massachusetts, USA, ² Philips Research North America, Cambridge, Massachusetts, USA	5K-1 Compressed Quantitative Acoustic Microscopy Jonghoon Kim ¹ , Paul Hill ¹ , Nishan Canagarajah ¹ , Daniel Rohrbach ² , Denis Kouame ² , Jonathan Mamou ² , Alin Achim ¹ , Adrian Basarab ³ ¹ Visual Information Laboratory, University of Bristol, Bristol, United Kingdom, ² Lizzi Center for Biomedical Engineering, Riverside Research, NYC, New York, USA, ³ IRIT, UMR CNRS 5505, University of Toulouse, Université Paul Sabatier, Toulouse, France	6K-1 Air-Coupled 40-KHz Ultrasonic 2D-Phased Array Based on a 3D-Printed Waveguide Structure Axel Jäger ¹ , Dominik Großkurth ¹ , Matthias Rutsch ¹ , Alexander Unger ¹ , Rene Gollinske ² , Han Wang ¹ , Steve Dixon ³ , Klaus Hofmann ¹ , Mario Kupnik ¹ ¹ Technische Universität Darmstadt, Darmstadt, Germany, ² Brandenburg University of Technology, Cottbus, Germany, ³ University of Warwick, Coventry, United Kingdom	7K-1 Vibration Response of a High Power Compact Large-Area Ultrasonic Resonator Hafiz Osman ^{1,2} , Fannon Lim ¹ , Margaret Lucas ¹ ¹ University of Glasgow, United Kingdom, ² Research and Development, Sembcorp Marine Ltd., Singapore
04:15 pm	1K-2 Evaluation of Anticancer Agent Transport in Brain Tumors After Focused Ultrasound-Induced Blood-Brain/Blood-Tumor Barrier Disruption Costas Arvanitis ¹ , Vasileios Askoxylakis ² , Yutong Guo ¹ , Meeenal Datta ² , Jonas Kloepper ² , Miguel Bernabeu ³ , Dai Fukumura ⁴ , Nathan McDannold ² , Rakesh Jain ² ¹ Georgia Institute of Technology, USA, ² Harvard Medical School, USA, ³ University of Edinburgh, United Kingdom	2K-2 Assessment of Corneal Biomechanical Properties Using the Ultrasonic Micro-elastography Xuejun Qian ^{1,2} , Teng Ma ^{1,2} , Martin Heur ¹ , Jun Zhang ² , K. Kirk Shung ² , Mark Humayun ^{1,3} , Qi-fa Zhou ^{1,2} ¹ USC Roski Eye Institute, University of Southern California, Los Angeles, California, USA, ² Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA, ³ USC Institute for Biomedical Therapeutics, University of Southern California, Los Angeles, California, USA	3K-2 Fast and Background Free Super-Resolution Ultrasound Angiography Oren Solomon ¹ , Avinoam Bar-Zion ² , Dan Adam ² , Yonina C. Eldar ¹ ¹ Electrical Engineering, Technion, Haifa, Israel, ² Biomedical Engineering, Technion, Haifa, Israel	4K-2 Suppression of Clutter by Rank Adaptive Reweighted Sparse Coding Sushanth Sathyanarayana ¹ , Scott Acton ² , John Hossack ¹ ¹ Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA, ² Electrical and Computer Engineering, University of Virginia, Charlottesville, Virginia, USA	5K-2 a Multimodal System based on Multispectral Imaging/Analysis and High-Frequency Ultrasound Elastography for Examination of Resected Human Tumors Ex vivo Jihun Kim ¹ , Jun-Young Kim ² , Anna Seo ³ , Eunjoo Kim ¹ , Jae Youn Hwang ¹ ¹ Department of Information and Communication Engineering, Daegu Gyeongbuk Institute of Science and Technology, Daegu, Korea, Republic of, ² Department of Orthopedic Surgery, Kyungpook National University Hospital, Daegu, Korea, Republic of, ³ 3D Convergence Technology Center, Kyungpook National University Hospital, Daegu, Korea, Republic of, ⁴ Department of Nano & Energy Research, Daegu Gyeongbuk Institute of Science and Technology, Daegu, Korea, Republic of	6K-2 Multi-focused Acoustic Holograms by 3D printing Yang Yang ^{1,2} , Jun Zhang ³ , Zeyu Chen ¹ , Xiangjia Li ² , Jie Jin ² , K. Kirk Shung ¹ , Yong Chen ⁵ , Qi-fa Zhou ^{1,6} ¹ University of Southern California, Los Angeles, California, USA, ² Biomedical Engineering, University of Southern California, Los Angeles, California, USA, ³ Wuhan University, Wuhan, Hubei, China, ⁴ People's Republic of, ⁵ Biomedical Engineering, UNIVERSITY OF southern california, LOS ANGELES, CALIFORNIA, USA, ⁶ Industrial and Systems Engineering, UNIVERSITY OF southern california, LOS ANGELES, CALIFORNIA, USA, ⁷ Roski Eye Institute, Department of Ophthalmology, University of Southern California, Los Angeles, California, USA	7K-2 Nanoparticles Generation System using an Ultrasonic Torsional Transducer Nozomu Fujimoto ¹ , Takefumi Kanda ¹ ¹ Graduate School of National Science and Technology, Okayama University, Okayama, Japan

04:30 pm	1K-3 Concurrent Anti-Vascular, Sonodynamic and Chemo Therapy in Solid Tumors by Superhydrophobic Dox-Loaded Nanoparticles Qiaofeng Jin¹, Cheng-Han Wu¹, Chih-Yu Lin², Chia-Ming Yang², Chih-Kuang Yeh¹ ¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan, ²Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan	2K-3 In-vivo Assessing the Age-Related Stiffness of Crystalline Lens in Rabbits by Acoustic Radiation Force based Ultrasound Elastography Qingmin Wang¹, Zhen Lv¹, Xuehua Gao¹, Pengpeng Zhang¹, Haoming Lin¹, Yanrong Guo¹, Xin Chen¹, Tianfu Wang¹, Siping Chen¹, Xinyu Zhang¹ ¹School of Biomedical Engineering, Shenzhen Univ., Shenzhen, China, ²People's Republic of	3K-3 Microbubble Localization Errors in Ultrasound Super-Resolution Imaging Kirsten Christensen Jeffries¹, Sevan Harput², Jenna Brown¹, Christopher Dunsby^{3,4}, Paul Aljabar⁵, Meng-Xing Tang⁶, Robert Eckersley¹ ¹Biomedical Engineering, Kings College London, London, United Kingdom, ²Bioengineering, Imperial College London, London, United Kingdom, ³Physics, Imperial College London, London, United Kingdom, ⁴Imperial College London, Centre for Pathology, London, United Kingdom, ⁵Kings College London, London, United Kingdom, ⁶Imperial College London, London, United Kingdom	4K-3 Optimal Clutter Filtering for Improved Perfusion Sensitivity MinWoo Kim¹, Jamila Hedhli¹, Lawrence Dobrucki¹, Craig Abbey², Michael Ismail¹ ¹University of Illinois at Urbana-Champaign, USA, ²University of California Santa Barbara, USA	5K-3 Magnetomotive Ultrasound Imaging Using the Nonlinear Magnetization of Nanoparticles Tim C. Kranemann¹, Thomas Ersepeke¹, Georg Schmitz² ¹Chair for Medical Engineering, Ruhr-University Bochum, Bochum, NRW, Germany	6K-3 In-situ Measurement of Transducer Impedance using AFE Active Termination through Analysis of Ultrasound Echoes David Cowell¹, Thomas Carpenter¹, Benjamin Fisher¹, Steven Freear¹ ¹Ultrasound Group, University of Leeds, United Kingdom	7K-3 Non-Contact Coating Processing of Small Object Levitated in Ultrasonic Standing Wave Field Kentaro Nakamura¹, Yoshimasa Saka¹ ¹Institute of Innovative Research, Tokyo Institute of Technology, Yokohama, Japan
04:45 pm	1K-4 Numerical Model Fully Depicting Nanoparticle Uptake Within Brain After Ultrasound Induced Blood-Brain Barrier Opening. Allegra Conti¹, Remi Magnin¹, Sébastien Métaux¹, Benoit Larrat¹ ¹NeuroSpin, CEA, Gif-sur-Yvette, France	2K-4 Biological and Experimental Factors Affecting the Assessment of Cervical Softening During Pregnancy With Shear Wave Elasticity Imaging Ivan M. Rosado-Mendez¹, Lindsey C. Dreihall¹, Andrew P. Santos¹, Quinton W. Guerrero¹, Kaitlin M. Woo², Mark L. Palmen¹, Helen Feltoovich^{1,4}, Timothy J. Hall¹ ¹Department of Medical Physics, University of Wisconsin-Madison, Madison, WI, USA, ²Biosciences and Medical Informatics, University of Wisconsin-Madison, Madison, WI, USA, ³Biomedical Engineering, Duke University, Durham, NC, USA, ⁴Maternal Fetal Medicine, Intermountain Healthcare, Provo, UT, USA	3K-4 Robust Ultrasound Super-resolution Microvessel Imaging with Spatiotemporal Nonlocal Means Filtering and Bipartite Graph-Tracking Pengfei Song¹, Joshua D. Trzasko¹, Armando Manduca², Runqing Huang³, Ramanathan Kadirvel¹, David F. Kallmes¹, Shiguo Chen¹ ¹Department of Radiology, Mayo Clinic College of Medicine, Rochester, Minnesota, USA, ²Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA, ³Division of Cardiovascular Diseases, Mayo Clinic College of Medicine, Rochester, Minnesota, USA	4K-4 Compressed Sensing Based Synthetic Transmit Aperture for Phased Array Imaging Jing Lin¹, Jianwen Luo¹ ¹Tsinghua University, China, ²People's Republic of	5K-4 Ultrasound Bandwidth Enhancement Through Pulse Compression Using a CMUT Probe Yanis Benane¹, Roberto Lavarello², Denis Bujoreanu¹, Christian Cachard¹, François Varray¹, Alessandro Stuart Savoia³, Emilie Franceschini⁴, Olivier Basset¹ ¹Univ. Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, UDM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, F-69100, Lyon, France, ²Laboratoire de Imagerie Médicale, Département de Ingénierie, Pontificia Universidad Católica del Perú, Lima, Peru, ³Dipartimento di Ingegneria, Università degli Studi Roma Tre, Via della Vasca Navale 84, 00146, Rome, Italy, ⁴Aix-Marseille Université, CNRS, Centrale Marseille, Laboratoire de Mécanique et d'Acoustique, Marseille, France	6K-4 AIN on SOI PMUTs for Wireless Communication Emad Mehdi Zadeh¹, Gianluca Piazza¹ ¹Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA	7K-4 a Small Three-Way Valve for Hydraulic Actuators Using Piezoelectric Transducers Hayato Oaki¹, Takafumi Kanda¹, Shoki Ojui¹, Norihisa Seno¹, Koichi Suzumori², Takahiro Ukida², Hiroyuki Nabae² ¹Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan, ²Graduate School of Science and Engineering, Tokyo Institute of Technology, Tokyo, Japan

Oral – Saturday, September 9, 2017								
04:00 pm – 05:30 pm	05:00 pm	1K-5 MRI-guided Focused Ultrasound Hyperthermia in Combination with Microbubbles for Improved Drug Delivery at Reduced Power Levels Marc Santos ^{1,2} , Sheng-Kai Wu ¹ , Yuexi Huang ¹ , David Goertz ^{1,2} , Kullervo Hynynen ^{1,3} ¹ Physical Sciences Platform, Sunnybrook Research Institute, Toronto, Ontario, Canada, ² Medical Biophysics, University of Toronto, Toronto, Ontario, Canada	2K-5 Shear Shock Waves Observed in the Ex-Vivo Brain David Espindola ¹ , Gianmarco Pinton ¹ ¹ Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill and North Carolina State University, Chapel Hill, USA	3K-5 Acoustic Response of Phase Change Contrast Agents Targeted with Breast Cancer Cells Immediately after Ultrasonic Activation using Ultrafast Imaging Ge Zhang ¹ , Shengtao Lin ¹ , Chee Hau Leow ¹ , Kum Tang ^{1,2} , Javier Hernandez Gil ³ , Terry Matsunaga ⁴ , Mengxing Tang ¹ ¹ Department of Bioengineering, Imperial College London, United Kingdom, ² Institute of Molecular and Cell Biology, Agency for Science, Technology and Research (A*STAR), Singapore, ³ Department of Chemistry, Imperial College London, United Kingdom, ⁴ Department of Medical Imaging, University of Arizona, USA	4K-5 Random Incident Sound Waves for Fast Compressed Pulse-Echo Ultrasound Imaging Martin Schiffner ¹ , Georg Schmitz ¹ ¹ Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany	5K-5 Accelerating Ultrasound Speed of Sound Tomography Through Reflection and Transmission Imaging Qi You ¹ , Yingqiao Zheng ¹ , Yunhao Zhu ¹ , Rungro Jintamethasawat ² , Yuxin Wang ¹ , Jie Yuan ¹ , Xueding Wang ² , Paul Carson ² ¹ School of Electronics Science and Engineering, Nanjing University, Nanjing, Jiangsu, China, ² People's Republic of China, ³ Department of Radiology, University of Michigan, Ann Arbor, Michigan, USA	6K-5 Development of a Novel Noncontact Ultrasonic Bearing Actuated by Piezoelectric Transducers He Li ¹ , Qiquan Quan ¹ , Zongquan Deng ¹ , Deen Bai ¹ , Yinchao Wang ¹ ¹ School of Mechatronics Engineering, Harbin Institute of Technology, Harbin, China, People's Republic of	7K-5 a Compact Design for Ultra-Sonic Piezoelectric Motor With Embedded Strain Wave Reducer for High Torque Applications Quentin Guilleus ¹ , Edouard Leroy ¹ , Laurent Eck ¹ , Moustapha Hafez ¹ ¹ DIASI / Sensory and Ambient Interfaces Laboratory, CEA LIST, Gif-sur-Yvette Cedex, France
	05:15 pm	1K-6 LIFU Triggers Drug Release From Porphyryn-Phospholipid Liposomes and Facilitates Multi-Functional Theranostics Xiaobing Wang ^{1,2} , Xiufang Liu ¹ , Fei Yan ¹ , Hairong Zheng ¹ ¹ Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, ² People's Republic of ³ College of Life Sciences, Shaanxi Normal University, China, ⁴ People's Republic of	2K-6 Assessment of Interstitial Lung Disease Using Lung Ultrasound Surface Wave Elastography Xiaoming Zhang ¹ , Boran Zhou ¹ , Thomas Osborn ² , Brian Bartholmai ¹ , James Greenleaf ³ , Sanjay Kalra ⁴ ¹ Radiology, Mayo Clinic, Rochester, Minnesota, USA, ² Rheumatology, Mayo Clinic, Rochester, Minnesota, USA, ³ Physiology and Biomedical Engineering, Mayo Clinic, Rochester, Minnesota, USA, ⁴ Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, Minnesota, USA	3K-6 Microbubbles Kinetics in Ultrafast Ultrasound Localization Microscopy Claudia Errico ¹ , Olivier Couture ¹ , Mickael Tanter ¹ ¹ Institut Langevin (CNRS, ESPCI, INSERM), Paris, France	4K-6 Accelerating Plane Wave Imaging through Deep Learning-based Reconstruction: an Experimental Study Maxime Gasse ¹ , Fabien Millioz ¹ , Emmanuel Roux ² , Hervé Liebgott ¹ , Denis Friboulet ¹ ¹ Univ-Lyon, INSA-Lyon, UCBL1, UJM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, F-69100, Lyon, France, ² Department of Information Engineering, Università Degli Studi di Firenze, Firenze, Italy	5K-6 Pulse Wave Velocity (PWV) and Compliance Estimation and Mapping Using Pulse Wave Imaging (PWI) in Healthy, Stenotic and Post-Endarterectomy Carotid Arteries in Vivo Jason Zacharias Apostolakis ¹ , Pierre Nauléau ¹ , Paul Kemper ¹ , Edward S. Connolly ² , Elisa Konofagou ¹ ¹ Columbia University, USA, ² Columbia University Medical Center, USA	6K-6 LightProbe: a Fully-Ultrasound Probe with High-Bandwidth Optical Interface Pascal Alexander Hager ¹ , Daniel Speicher ² , Christian Degel ³ , Luca Benini ¹ ¹ Integrated Systems Lab, ETH Zürich, Zürich, Switzerland, ² Fraunhofer Institute for Biomedical Engineering IBMT, Sulzbach, Germany	7K-6 PZT Lateral Bimorph Array Stator Based Ultrasonic Micromotor Shelly Aggarwal ¹ , Sachin Nadig ¹ , Amit Lal ¹ ¹ Cornell University, Ithaca, New York, USA

Session P1-C1. MBB: Synthetic Aperture and Multi-zones Imaging Chair: Ling Tong Supersonic Imagine	P1-C1-8 Optimization Strategies and Neighbour-Pair Complementary Codes for Massively Parallel Focal-Zone Ultrafast Ultrasound David Egolf¹, Tarek Kaddoura¹, Roger Zemp¹ ¹Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada	P1-C2-4 3D Flow Velocity Reconstruction in a Human Radial Artery From Measured 2D High-Frame-Rate Plane Wave Contrast Enhanced Ultrasound in Two Scanning Directions – a Feasibility Study Virginie Papadopoulos^{1,2}, Richard Corbett^{3,4}, Xinhuan Zhou^{1,4}, Matthieu Toulemonde¹, Chee Hau Leow¹, David Cosgrove¹, Neill Duncan¹, Meng-Xing Tang¹ ¹Department of Bioengineering, Imperial College London, United Kingdom, ²Recently moved: Department of Biomedical Engineering, UNC Chapel Hill, USA, ³Department of Medicine, Imperial College London, United Kingdom, ⁴These authors contributed equally to this work, United Kingdom	P1-C3-5 High Frame Rate Contrast Enhanced Echocardiography: Microbubbles Stability and Contrast Evaluation Matthieu Toulemonde¹, Robert J. Eckersley², Meng-Xing Tang¹ ¹Department of Bioengineering, Imperial College London, United Kingdom, ²King's College, United Kingdom	P1-C4-3 Designing Targeted Ultrasound Contrast For Molecular Imaging of Secreted Frizzled Related Protein-2 (SRFP2) Without Biotin-Avidin Linkages. James Tsuruta¹, Nancy Klauber-DeMore², Paul A. Dayton³ ¹Pediatrics, University of North Carolina, Chapel Hill, NC, USA, ²Department of Surgery, Medical College of South Carolina, Charleston, SC, USA, ³Joint Dept of Biomedical Engineering, University of North Carolina & NC State University, Chapel Hill, NC, USA
P1-C1-1 Spatial Prediction Filtering for Increased Penetration Depth in Synthetic Aperture Ultrasound Junseob Shim¹, Yang Lou², Jesse Yen³, Liajie Huang¹ ¹Los Alamos National Laboratory, Los Alamos, NM, USA, ²University of Southern California, Los Angeles, CA, USA	P1-C1-9 Motion Correction for Multi-Plane-Transmit Beamforming: a Simulation Study Yinran Chen¹, Jianwen Luo¹, Jan D'hooge² ¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, ²People's Republic of China, ³Laboratory of Cardiovascular Imaging and Dynamics, Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium	P1-C2-5 Three-Dimensional Mapping of Epicardial and Intramyocardial Coronary Circulation In-Vivo Using 3-D Ultrafast Ultrasound Doppler Imaging Mafalda Correia¹, David Maresca¹, Jean Provost¹, Mickael Tanier¹, Bijan Ghalehi², Matthieu Pernot¹ ¹Institut Langevin - ESPCI, PSI, Research University, CNRS UMR7587, INSERM U979, Université P6 and P7, Paris, France, ²INSERM U955, Equipe 03, F94000, Créteil et Université Paris Est, Ecole Nationale Vétérinaire, Maisons-Alfort, France	P1-C3-6 In-vitro Contrast Agent Detection Combining Pulse Inversion and SURF Imaging Stian Solberg¹, Rune Hansen^{2,3}, Sigrid Berg^{2,3}, Johannes Kvam^{3,4}, Bjørn Aile J. Angelsen³ ¹SURF Technology AS, Trondheim, Norway, ²SINTEF Technology and Society, Trondheim, Norway, ³Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, ⁴Norsvin SA, Hamar, Norway	P1-C4-4 Imaging of Cortical Pores Using Ultrasound Contrast Agents: an Ex-vivo Study Juan Du¹, Gianluca Iori¹, Kay Raum¹ ¹Berlin-Brandenburg Center for Regenerative Therapies, Charité - Universitätsmedizin Berlin, Berlin, Germany
P1-C1-2 Swept Synthetic Study of Large Aperture Imaging Through Ex Vivo Human Abdominal Wall Nick Bottenus¹, Will Long¹, Matthew Morgan¹, Gregg Trahey^{1,2} ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA, ²Radiology, Duke University, Biomedical Engineering, Durham, NC, USA	P1-C1-10 Low Complexity Adaptive Beamforming with Multi Line Transmit Cardiac Ultrasound Grigoriy Zurakhov¹, Ling Tong², Alessandro Ramalli³, Piero Tortoli³, Jan D'hooge², Zvi Friedman¹, Dan Adam¹ ¹Biomedical Engineering, Technion - IIT, Israel, ²Department of Cardiovascular Sciences, KU Leuven, Belgium, ³Microelectronics Systems Design lab, University of Florence, Italy	P1-C2-6 in Vitro & in Vivo 4D Ultrafast Doppler Imaging Using a Large Aperture Row Column Addressed Transducer Jack SAUVAGE¹, Martin FLESC^{1,2}, Thomas DEFHEUX¹, Mathieu PERNOT¹, Bogdan ROSINSKI², Guillaume FERIN², Mickael TANTER¹ ¹INSERM U979, France, Metropolitan, Yvermon, France, Metropolitan	P1-C3-7 the Subharmonic Amplitude of Sonovue Increases With Hydrostatic Pressure At Low Incident Acoustic Pressures Amanda Nio¹, Alessandro Faraol¹, Kirsten Christensen-Jeffries¹, Robert Eckersley¹, Mark Monaghan², Jason Raymond³, Flemming Forsberg⁴, Pablo Lamata¹ ¹Biomedical Engineering, King's College London, United Kingdom, ²Cardiology, King's College Hospital, United Kingdom, ³Engineering Science, University of Oxford, United Kingdom, ⁴Radiology, Thomas Jefferson University, USA	P1-C4-5 High Contrast-to-Tissue Ratio Imaging Technique Using the Unique Vaporization Signature from Phase-Change Contrast Agents Juan Rojas¹, Paul Dayton^{1,2} ¹Biomedical Engineering, the University of North Carolina and North Carolina State University, USA, ²The University of North Carolina Lineberger Comprehensive Cancer Center, USA
P1-C1-3 Synthetic Aperture Sequential Beamforming using Spatial Matched Filtering Mikkel Schou¹, Tommaso di Iannai¹, Jørgen Arendt Jensen¹ ¹Department of Electrical Engineering, Technical University of Denmark (DTU), Lyngby, Denmark	P1-C1-11 a Study of Synthetic Aperture Focusing Using Plane Waves To Provide Wider Field of View Ultrasound Imaging Without Side-Lobe Artifacts Due To the Use of Sampling Angle in Transmitting Inclined Plane Waves Bae-Hyung Kim¹, Azra Alizad^{1,2}, Mostafa Fatemi¹ ¹Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA, ²Department of Internal Medicine, Mayo Clinic College of Medicine, Rochester, MN, USA	Session P1-C3. MCA: Microbubbles Physics and Imaging Chair: Emmanuel Chérin Sunnybrook Research Institute	P1-C3-8 Improved Contrast Enhanced Ultrasound Imaging with Multiphase Wave Imaging Ping Gong¹, Pengfei Song¹, Shigao Chen¹ ¹Department of Radiology, Mayo Clinic, Rochester, MN, USA	P1-C4-6 on the Validity of the First-Pass Binding Model For Quantitative Ultrasound Molecular Imaging: Comparison Between BR55 and Sonovue Simona Turco¹, Isabelle Tardy², Peter Frinking², Hessel Wijkstra^{1,3}, Massimo Mischl¹ ¹Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, ²Bracco Suisse SA, Geneva, Switzerland, ³Urology, Academic Medical Center, Amsterdam, Netherlands

P1-C1-4 Archimedean Spiral Based Compounding For High Quality and High Frame Rate Convex Array Imaging Jing Liu¹, Jianwen Luo¹ ¹Tsinghua University, China, People's Republic of	Session P1-C2. MBF: Flow Imaging: From 2D to 4D Chair: Jørgen Axdal Norwegian University of Science and Technology	P1-C3-1 Theoretical and Experimental Investigation of the Nonlinear Dynamics of Nanobubbles Excited At Clinically Relevant Ultrasound Frequencies and Pressures: the Role of Lipid Shell Buckling Amin JafariSajjadi^{1,2}, Lantiza Nieves¹, Christopher Hernandez², Agata Exner², Michael C. Kolos^{3,5} ¹Physics, Ryerson University, Toronto, ON, Canada, ²Institute for Biomedical Engineering, Science and Technology (IBEST), partnership between St. Michael's Hospital and Ryerson University, Toronto, ON, Canada, ³Radiology, Case Western Reserve University, Cleveland, Ohio, USA, ⁴Biomedical Engineering, Case Western Reserve University, Cleveland, Ohio, USA, ⁵Institute for Biomedical Engineering, Science and Technology (IBEST), a partnership between St. Michael's Hospital and Ryerson University, Toronto, ON, Canada	P1-C3-9 Towards Real-Time Implementation of Subharmonic Aided Pressure Estimation (SHAPE) – How To Identify Optimum Acoustic Output For SHAPE? Cara Esposito^{1,2}, Kristopher Dickie³, Flemming Forsberg¹, Jaydev Dave¹ ¹Radiology, Thomas Jefferson University, Philadelphia, PA, USA, ²School of Biomedical Engineering, Science and Health Systems, Drexel University, Philadelphia, PA, USA, ³Claritas Mobile Health, Burnaby, BC, Canada	P1-C4-7 Multi-Frame Rate Plane Wave Contrast-Enhanced Ultrasound Imaging for Tumour Vascular Imaging and Perfusion Quantification Chee Han Leow¹, Marta Braga², Javier Hernández-Gil², Nicholas J. Long^{2,3}, Eric O. Aboagye², Meng-Xing Tang¹ ¹Department of Bioengineering, Imperial College London, United Kingdom, ²Department of Surgery & Cancer, Imperial College London, United Kingdom, ³Department of Chemistry, Imperial College London, United Kingdom
P1-C1-5 Diverging Wave Compounding: Direct Comparison of Two Popular Approaches Vangish Komini¹, Pedro Santos¹, Jan D'Hooge¹ ¹KU Leuven, Leuven, Belgium	P1-C2-1 Cardiac Flow Mapping Using High Frame-Rate Diverging Wave Contrast Enhanced Ultrasound and Image Tracking Matthieu Toulmonde¹, Chee Hau Leow¹, Robert J. Eckersley², Meng-Xing Tang¹ ¹Department of Bioengineering, Imperial College London, London, United Kingdom, ²King's College, United Kingdom	P1-C3-2 Hadamard Encoded Multi-Pulses for Contrast Enhanced Ultrasound Imaging Ping Gong¹, Pengfei Song¹, Shigao Chen¹ ¹Department of Radiology, Mayo Clinic, Rochester, MN, USA	Session P1-C4. MCA: Contrast Imaging: Preclinical and Clinical Applications Chair: Jean-Michel Escoffre Inserm U930 Imaging & Brain	P1-C4-8 Time Intensity Curve Analysis of Subharmonic Transabdominal and Harmonic Endoscopic Contrast-Enhanced Ultrasound of Pancreatic Masses Ji-Bin Liu¹, Lauren Jablonowski¹, John Eisenbrey¹, Flemming Forsberg¹, Ali Siddiqui² ¹Radiology, Thomas Jefferson University, USA, ²Gastroenterology and Hepatology, Thomas Jefferson University, USA
P1-C1-6 Inter-Transmission Adaptive Weighting For Suppressing Grating Artifact in High-Frame-Rate Synthetic Transmit Aperture Beamforming Teitiehiko Ikeda¹, Chizae Ishihara¹, Misaki Hiroshima¹, Masamori Hisatsu¹, Kenji Kumasaki¹, Hiroshi Kuribara¹ ¹Htachi Ltd., Japan	P1-C2-2 In Vivo Blood Flow Mapping of Mice by Ultrafast High Frequency Ultrasound Imaging Hsin Huang¹, Pei-Yu Chen¹, Chih-Chung Huang¹ ¹Department of Biomedical Engineering, National Cheng Kung University, Taiwan	P1-C3-3 Enhanced Subharmonic Emission of Single Microbubbles by Acoustic Deflation Emma Kanbar¹, Inés Beekers², Tom van Rooij², Nico de Jong², Klazina Kooiman², Ayache Boukaz¹ ¹UMR Inserm U930, Université François-Rabelais de Tours, France, ²Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands	P1-C4-9 Imaging the Rat Liver and Heart with a 3D Motion Corrected Acoustic Angiography System Tomek Czemuszewicz¹, Virginie Papadopoulos², James Butler¹, Max Harlacher¹, Graeme O'Connell¹, Jonathan Perdomo¹, Paul Dayton², Ryan Cessner¹ ¹SonoVol, Inc., Research Triangle Park, NC, USA, ²Biomedical Engineering, UNC Chapel Hill, NC, USA	P1-C4-10 Evaluation of Utero-Placental Perfusion in Intrauterine Growth Restriction Rat Model Using CEUS Anthony Novell¹, Vanda Mendes^{1,2}, Arthuis Chloé^{1,2}, Ayache Boukaz¹, Franck Perotin^{1,2} ¹Imagerie et Cerveau, Université François Rabelais, Inserm, Tours, France, ²Department of Obstetrics and Gynecology, CHRU Tours, France
P1-C1-7 High Frame Rate Multi-Plane Echocardiography Using Multi-Line Transmit Beamforming: first experimental findings Pedro Santos¹, João Pedrosa¹, Jan D'Hooge¹ ¹Department of Cardiovascular Sciences, KU Leuven, Belgium	P1-C2-3 Ultrasound Study of Hemodynamic Changes by Flow Diverting Stents in Idealised and Patient-Specific Anatomies Ana Paula Narata^{1,2}, Fernando Silva De Moura³, Alberto Marzo³, Cecile Perrault¹, Ignacio Larabide², Ayache Boukaz¹, Charles Sennoga¹ ¹Inserm U930, France, ²CHRU Hôpitaux de Tours, France, ³Universidade Federal do ABC, Brazil, ⁴University of Sheffield, United Kingdom, ⁵Universidad Nacional del Centro de la Provincia de Buenos Aires, Argentina	P1-C4-2 Reduced Variability of Contrast-Enhanced Ultrasound Perfusion Estimates in a Patient-Derived Xenograft Model via Analysis of Speckle Statistics Matthew Lowerison^{1,2}, Ann Chambers^{1,3}, Hon Leong^{4,5}, Nicholas Power^{4,6}, James Laceyfield^{1,6} ¹Medical Biophysics, University of Western Ontario, London, Ontario, Canada, ²Robarts Research Institute, London, Ontario, Canada, ³Oncology, University of Western Ontario, London, Ontario, Canada, ⁴Surgery, University of Western Ontario, London, Ontario, Canada, ⁵Pathology and Laboratory Medicine, University of Western Ontario, London, Ontario, Canada, ⁶Electrical and Computer Engineering, University of Western Ontario, London, Ontario, Canada		

9:30 am – 4:00 pm

Poster --- Saturday, September 9, 2017

Exhibit Hall

P1-C4-11 Quantitative 3D Subharmonic Imaging for Characterizing Breast Lesions Anush Sridharan^{1,2}, John Eisenbrey¹, Maria Stanczak¹, Priscilla Machado¹, Amina Wilkes¹, Alexander Sevruk¹, Haydee Ojeda-Fournier¹, Robert Matney³, Kirk Wallace⁴, Flemming Forsberg¹ ¹Radiology, Thomas Jefferson University, Philadelphia, PA, USA, ²Electrical and Computer Engineering, Drexel University, Philadelphia, PA, USA, ³Radiology, University of California, San Diego, San Diego, CA, USA, ⁴GE Global Research, Niskayuna, NY, USA	P1-C5-6 Acoustoelasticity Modeling of Bladder Tissue Nonlinearity: Ex Vivo Study Mahdi Bayat¹, Aparna Singh¹, Jeremy Webb², Viksit Kumar¹, Adriana Gregory¹, Azra Alizad², Mostafa Fatemi¹ ¹Physiology and Biomedical Engineering, Mayo Clinic, USA, ²Radiology, Mayo Clinic, USA	P1-C5-5 Mechanical Effects of Cisplatin on Pancreatic Ductal Adenocarcinoma in a Transgenic Mouse Model Using Harmonic Motion Imaging Thomas Payen¹, Niloufar Saharkhiz¹, Carmine Palermo², Steve Sastar², Kenneth Olive², Elisa Konofigou^{1,3} ¹Biomedical Engineering, Columbia University, USA, ²Herbert Irving Comprehensive Cancer Center, Columbia University, USA, ³Department of Radiology, Columbia University, USA	P1-C6-13 High Frame-Rate Imaging and Adaptive Tracking of Shear Shock Wave Formation in the Brain: a Fullwave and Experimental Study David Espindola¹, Gianmarco Pinton¹ ¹Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill and North Carolina State University, USA	P1-C7-3 a Wide Field-of-View Microvascular Imaging Using Diverging Transmit Beams in a Curved-Array Transducer Doyoung Go¹, Jinbum Kang¹, Yangmo Yoo^{1,2} ¹Electronic engineering, Sogang university, Seoul, Korea, Republic of, ²Biomedical engineering, Sogang university, Seoul, Korea, Republic of
P1-C4-12 Which Properties of the Vascular Architecture Are Reflected by Dynamic Contrast-Enhanced Ultrasound Imaging of Dispersion and Wash-In Rate? a Comparison With Acoustic Angiography. Anastasia Panfilova¹, Sarah Shelton², Ruud JG van Sloun¹, Cristina Caresio³, Hessel Wijkstra^{1,4}, Paul Dayton⁵, Massimo Misch¹ ¹Electrical Engineering, Technical University of Eindhoven, Netherlands, ²Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill and North Carolina State University, USA, ³Department of Electronics and Telecommunications, Polytechnic University of Turin, Italy, ⁴Urology Department, Academic Medical Center, University of Amsterdam, Netherlands	P1-C5-7 Multi-Plane Estimation of the Third- and Fourth-Order Elastic Constants of Soft Material Jinping Dong¹, He Li¹, Yang Zhang¹, Yuxin Guo¹, Wei-Ning Lee^{1,2} ¹Department of Electrical and Electronic Engineering, the University of Hong Kong, Hong Kong, ²Medical Engineering Programme, the University of Hong Kong, Hong Kong	P1-C6-6 Laser Speckle Contrast Shear Wave Imaging of Three-Dimensional Cancer Metastasis Model Pei-Yu Chao¹, Wei-Wen Liu¹, Shih-Shih Hsu¹, Pai-Chi Li¹ ¹National Taiwan University, Taipei, Taiwan	P1-C6-14 Tracing the Shear Modulus of Blood Plasma During Clotting and Based on Acoustic Radiation Force Induced Vibration of an Embedded Sphere José Francisco Costa Junior¹, Guilherme Crossetti Parceri¹, João Carlos Machado^{1,2} ¹Biomedical Engineering Program, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil, ²Post-Graduation Program in Surgical Sciences, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil	P1-C7-4 Reduction of Transmitted 2nd Harmonics Using an Adaptive Method by Simulated Annealing Thong Huynh¹, Geir Haugen², Lars Horft¹ ¹University College of Southeast Norway, Vesfold, Norway, ²GE Vingmed Ultrasound AS, Norway
Session P1-C5. MEL: Mechanical Parameter Estimation Chair: Mark Palmeri Duke University	P1-C5-8 Quantification of Nonlinear Elastic Constants Using Polynomials in Quasi-Incompressible Soft Solids Corin Otssteau¹, Bhaskara Chinnada¹, Orcun Goksel¹ ¹Computer-assisted Applications in Medicine, ETH Zurich, Zurich, Switzerland	P1-C6-7 Delineation of Microwave Ablated Hepatocellular Carcinoma Tumor Regions Using Electrode Displacement Elastography Wenjun Yang¹, Tomy Varghese¹, Timothy Zieniewicz², Marek Alexander², Kelly Wergin², Meghan Lubner², J. Louis Hinshaw², Shane Wells², Fred Lee Jr² ¹Department of Medical physics, University of Wisconsin-Madison, USA, ²Department of Radiology, University of Wisconsin-Madison, USA	P1-C6-15 Quantitative Assessment of Scleroderma Using Ultrasound Surface Wave Elastography Xiaoming Zhang¹, Boran Zhou¹, Sanjay Kalra², Brian Bartholmai¹, James Greenleaf³, Thomas Osborn¹ ¹Radiology, Mayo Clinic, Rochester, Minnesota, USA, ²Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, Minnesota, USA, ³Physiology and Biomedical Engineering, Mayo Clinic, Rochester, Minnesota, USA, ⁴Rheumatology, Mayo Clinic, Rochester, Minnesota, USA	P1-C7-5 Simultaneous Pulse Wave and Flow Estimation At High-Framerate Using Plane Waves and Transverse Oscillations on a Carotid Phantom Vincent Perrot¹, Lorena Petrusca², Adeline Benadi¹, Didier Vray¹, Herve Liebgott¹ ¹CREATIS, Univ. Lyon, INSA-Lyon, Univ. Lyon 1, UJM-Saint-Etienne, CNRS, Inserm, UMR 5220, U1206, Villeurbanne, France, ²CREATIS, Univ. Lyon, INSA-Lyon, Univ. Lyon 1, UJM-Saint-Etienne, CNRS, Inserm, UMR 5220, U1206, Saint-Etienne, France
P1-C5-1 Group-Shearwave Based Viscoelastic Parameter Estimation: Analysis of Sources of Bias D. Cody Morris¹, Ned Rouze¹, Mark Palmeri¹, Kathryn Nightingale¹ ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA	Session P1-C6. MEL: Elastography in Pre-Clinical and Clinical Application Chair: Gianmarco Pinton University of North Carolina at Chapel Hill and North Carolina State University	P1-C6-8 2D Transient Elastography System Adapted To Shear Wave Speed Dispersion Measurement in Placenta: Ex Vivo Comparison Between Normal Pregnancies and Placental Insufficiencies Emmanuel Simon^{1,2}, Jean-Pierre Romenieras¹, Gemaïn Marcheteau¹, Frédéric Patat^{1,3}, Franck Percoot^{1,2}, Samuel Callé^{1,4} ¹François Rabelais University, INSERM, Imaging and brain UMR U930, Tours, France, ²Obstetrics, gynecology and fetal medicine, University Hospital Center of Tours, Tours, France, ³CIC-IT, CIC 1415 INSERM, University Hospital Center of Tours, France, ⁴GREMAN, UMR CNRS 7347, University of Tours, France	P1-C6-16 High Speed Clinical Strain Measurements Martin Andersen¹, Cooper Moore², Kristine Ages³, Melissa Lefevre³, Samuel Schmidt¹, Joseph Kisslo³, Olaf T. von Rammler² ¹Health Science and Technology, Aalborg University, Aalborg Øst, Denmark, ²Duke University, Durham, NC, USA, ³Duke University Hospital, Durham, NC, USA	P1-C7-6 Multispectral Ultrafast Ultrasound Imaging: a Versatile Tool Probing Dynamic Phase-Change Contrast Agents Heechul Yoon¹, Stanislav Emelianov^{1,2} ¹School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA, ²Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology and Emory University School of Medicine, Atlanta, GA, USA

P1-C5-2 Assessing Degree of Mechanical Anisotropy Using the Ratio of ARFI-Induced Peak Displacements at Small Rotation Angles Ma Murad Hossain¹, Leela Goel¹, Caterina Gallipoli¹ ¹Biomedical Engineering, University of North Carolina, Chapel Hill, Chapel Hill, North Carolina, USA	P1-C6-1 Improved Delineation Rate of Thermally Ablated Liver Tumors With Electrode Displacement Elastography Compared To Commercial Acoustic Radiation Force Impulse Imaging Wenjun Yang¹, Tomy Varghese², Timothy Ziemlewicz², Marc Alexander², Kelly Wergin², Meghan Lubner², J. Louis Hinshaw², Shane Wells², Fred Lee Jr² ¹Department of Medical physics, University of Wisconsin-Madison, USA, ²Department of Radiology, University of Wisconsin-Madison, USA	P1-C6-9 Biological factors affecting shear wave speed measurements in the Rhesus macaque non-pregnant cervix Ivan M. Rosado-Mendez¹, Lindsey C. Drehfal¹, Andrew P. Santos¹, Quanton W. Guerrero¹, Mark L. Palmer², Helen Felteich^{1,3}, Timothy J. Hall¹ ¹Department of Medical Physics, University of Wisconsin-Madison, Madison, WI, USA, ²Biomedical Engineering, Duke University, Durham, NC, USA, ³Maternal Fetal Medicine, Intermountain Healthcare, Provo, UT, USA	P1-C6-17 Frequency Response of Soft Tissue Displacements Induced by the Force on Magnetic Nanoparticles Thomas Ersepeke¹, Tim C. Kranemann¹, Georg Schmitz¹ ¹Chair for Medical Engineering, Ruhr-University Bochum, Germany	P1-C7-7 Reconstruction of Three-Dimensional Blood Vessel Network Using Multiple Ultrasound Volumes Constructed by Weighted Fusion Between B-Mode and Doppler-Mode Kohji Masuda¹, Tomoki Yamashita¹, Takuya Katani¹, Takashi Mochizuki¹, Shinya Onogi² ¹Tokyo Univ. of A&T, Japan, ²Kyushu Univ., Japan
P1-C5-3 Influence of Transmit Beamforming Parameters on Image Quality in Quantitative Elastography Kathryn Offerdahl¹, Stephen McAlavey¹ ¹Biomedical Engineering, University of Rochester, Rochester, NY, USA	P1-C6-2 3D Reconstruction of Ablations in Shear Wave Elastography using the Matérn Kernel Atul Ingle¹, Tomy Varghese² ¹Department of Biostatistics, University of Wisconsin-Madison, Madison, WI, USA, ²Department of Medical Physics, School of Medicine and Public Health, University of Wisconsin-Madison, Madison, WI, USA	P1-C6-10 Ultrasound Elastography in Assessment of Post-Stroke Spasticity of the Biceps Brachii Muscle Jing Gao¹, Michael O'Dell², Johnson Chen¹, Pai-Chi Li³ ¹Radiology, Weill Cornell Medicine, New York, New York, USA, ²Rehabilitation Medicine, Weill Cornell Medicine, New York, New York, USA, ³Electrical Engineering, Taiwan National University, Taipei, Taiwan	Session P1-C7: MIM: Image Reconstruction Chair: Marko Jakovljevic Stanford University	P1-C7-8 Passive Acoustic Mapping of Cavitation Based on Frequency Sum and Robust Capon Beamformer Shukuan Lu¹, Xianbo Yu¹, Nan Chang¹, Yujin Zong¹, Hui Zhong¹, Mingxi Wan¹ ¹Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of
P1-C5-4 Comparison of Methods For Measuring the Frequency Dependent Phase Velocity and Attenuation in Viscoelastic Materials Ned C. Rouze¹, Courtney A. Trutna¹, Yufeng Deng¹, Mark L. Palmer¹, Kathryn R. Nightingale¹ ¹Biomedical Engineering, Duke University, Durham, NC, USA	P1-C6-3 Evaluation of the Influence of Severe Steatosis on Fibrosis Measurement in a Rat Model With NAFLD by DMA and ARFI Technology Yanrong Guo¹, Haoming Lin¹, Changfeng Dong², Xinyu Zhang¹, Huiying Wen¹, Yingxia Liu¹, Tianlu Wang¹, Siping Chen¹, Xin Chen¹ ¹School of Biomedical Engineering, Shenzhen University, China, People's Republic of, ²Shenzhen Third People's Hospital, China, People's Republic of	P1-C6-11 Assessment of Anisotropy using Viscoelastic Response (VisR) Ultrasound in the Biceps Brachii of Healthy Older Adults and Stroke Patients Leela Goel¹, Christopher Moore², Jason Franz¹, Xiaogang Hu¹, Caterina Gallipoli¹ ¹Joint Department of Biomedical Engineering, UNC at Chapel Hill and NC State, the University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, ²Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA	Session P1-C8: MIM: Machine Learning Chair: Olivier Bernard CREATIS	P1-C7-1 Virtual Source Synthetic Aperture Focusing and Coherence Factor Weighting for Intravascular Ultrasound (IVUS) Mingyue Yu^{1,2}, Teng Ma^{1,2}, Yang Li¹, K. Kirk Shung¹, Qifa Zhou^{1,2} ¹Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA, ²USC Roski Eye Institute, University of Southern California, Los Angeles, California, USA
P1-C5-5 Evaluation of the Nonlinear Modulus in Renal Transplant Patients using Progressive and Regressive Compression and Shear Wave Measurements Sara Aristizabal¹, Carolina Amador Carrascal¹, Tomas Echavarría Bayar², James F. Greenleaf¹, Matthew W. Urban^{1,3} ¹Physiology and Biomedical Engineering, Mayo Clinic, Rochester, Minnesota, USA, ²Universidad Escuela de Ingeniería de Antioquia, Medellín, Antioquia, Colombia, ³Radiology, Mayo Clinic, Rochester, Minnesota, USA	P1-C6-12 Combination of Acoustic Radiation Force Impulse Technique and Optical Coherence Tomography To Measure Elastic Properties of the Crystalline Lens As a Function of Intraocular Pressure Chen Wu¹, Chih-Hao Liu¹, Zhaolong Han¹, Mammoohan Singh¹, Kirill Larn^{1,2}, Salavat Aglyamov³ ¹Biomedical Engineering, University of Houston, Houston, Texas, USA, ²Molecular Physiology and Biophysics, Baylor College of Medicine, Houston, Texas, USA, ³Biomedical Engineering, University of Texas at Austin, Austin, Texas, USA	P1-C7-2 New Model of Echo-Phase Relating To Speed-Of-Sound For Quantitative Reflection-Mode Ultrasound Tomography Michael Jaeger¹, Martin Frenz¹ ¹Institute of Applied Physics, University of Bern, Switzerland	P1-C8-1 2D Left Ventricle Segmentation Using Deep Learning Erik Smistad^{1,2}, Andreas Østvik¹, Bjørn Olav Haugen¹, Lasse Lovstakken¹ ¹Centre for Innovative Ultrasound Solutions (CIUS), Norwegian University of Science and Technology (NTNU), Norway, ²Medical Technology, SINTEF, Norway	

9:30 am – 4:00 pm

Poster --- Saturday, September 9, 2017

Exhibit Hall

P1-C8-2 a Fully Automatic and Multi-Structural Segmentation of the Left Ventricle and the Myocardium on Highly Heterogeneous 2D Echocardiographic Data Sarah Lederer¹, Thomas Grenier¹, Florian Espinoza², Olivier Bernard¹ ¹credits, Lyon, France, ²University Hospital of Saint-Etienne, Saint-Etienne, France	P1-C9-2 the Acoustical Properties of Brain, Liver and Kidney Soft Tissue From Small Animals Over the Frequency Range 12 – 33 MHz. Adela Rabell-Montiel¹, Steve Pye², Tom Anderson¹, Carmel Moran¹ ¹Cardiovascular Science, University of Edinburgh, Edinburgh, United Kingdom, ²Medical Physics, NHS Lothian, Edinburgh, United Kingdom	P1-C9-10 Evaluation of In-vivo Kinematics of Cervical Spines by Co-registering Dynamic Ultrasound with MRI Mingxin Zheng^{1,2}, Amin Mohamadi^{1,2}, Thomas Szabo¹, Brian Snyder^{1,2} ¹Department of Biomedical Engineering, Boston University, Boston, MA, USA, ²Beth Israel Deaconess Medical Center, Boston, MA, USA	P1-C10-6 Sonodynamic Therapy Using Photoporphyrin IX Encapsulated Microbubbles Inhibits Tumor Growth Xueci Chen¹, Bin Qin¹, Daniel Whitehurst¹, Brandon Helfield¹, Linda Lavery¹, Floridiza S. Villanueva¹ ¹Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh, Pittsburgh, PA, USA	P1-C11-4 Ultrasound Modulation of the Electromechanical Function of Human Stem-Cell-Derived Cardiomyocytes Andrew Chen¹, Aleksandra Klimas¹, Ivan Suarez Castellanos¹, Emilia Encheva¹, Vesna Zderic¹ ¹Biomedical Engineering, the George Washington University, USA
P1-C8-3 Real-time Classification of Standard Cardiac Views in Echocardiography using Neural Networks Andreas Östvik¹, Erik Smistad^{1,2}, Svein Arne Aase³, Bjørn Olav Haugen¹, Lasse Lovstakken¹ ¹Centre for Innovative Ultrasound Solutions (CIUS), Dept. Circulation and Medical Imaging, Norwegian University of Science and Technology (NTNU), Trondheim, Norway, ²Dept. Medical Technology, SINTEF, Trondheim, Norway, ³GE Vingmed Ultrasound AS, Horten, Norway	P1-C9-3 Speed of Sound Evaluation of Organelles of NASH Livers in Rats With 250-MHz Ultrasound Kazuho Ito¹, Kenji Yoshida², Jonathan Mamou³, Hirosaki Maruyama⁴, Tadashi Yamaguchi² ¹Graduate School of Engineering, Chiba University, Chiba, Japan, ²Center for Frontier Medical Engineering, Chiba University, Chiba, Japan, ³Lizi Center for Biomedical Engineering, Riverside Research, New York, NY, USA, ⁴Graduate School of Medicine, Chiba University, Chiba, Japan	P1-C9-11 Measurement of Longitudinal Wave Velocity in Articular Cartilage by Micro Brillouin Scattering Mami Kawase¹, Mami Matsukawa¹, Hiromichi Hayashi¹, Yoshiaki Shibagaki¹, Masahiko Kawabe¹ ¹Doshisha University, Kyotanabe, Kyoto, Japan	P1-C10-7 Ultrasound Microbubble Targeted Gemcitabine Delivery for Pancreatic Cancer Treatment Lauren Jablonowski¹, John Eisenbrey¹, David Brown², Maria Stanczak³, Ji-Bin Liu¹, Jingzhi Li¹, Flemming Forsberg¹, Margaret Wheatley² ¹Department of Radiology, Thomas Jefferson University, Philadelphia, PA, USA, ²School of Biomedical Engineering, Science, and Health Systems, Drexel University, Philadelphia, PA, USA	P1-C11-5 Ultrasound-Chemical Hybrid System For Manipulating Cellular Activities Ching-Hsiang Fan¹, Yao-Shen Huang², Yu-Chun Lin², Chih-Kuang Yeh¹ ¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan, ²Institute of Molecular Medicine, National Tsing Hua University, Hsinchu, Taiwan
P1-C8-5 Application of Wavelet Scattering Networks in Classification of Ultrasound Image Sequences Amir Khan¹, Ananya Dhawan¹, Nima Akhlagi¹, Joseph Majidi¹, Siddhartha Sikdar¹ ¹Department of Bioengineering, George Mason University, Fairfax, VA, USA	P1-C9-4 Measurement of Ultrasound Attenuation, Phase Velocity and Scattering Mean Free Path in Cortical Bone Using Independent Scattering Approximation Omid Yousefian¹, Yasamin Karbalaieisadeghi¹, Gianluca Iori², Kay Raum², Marie Müller¹ ¹Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, NC, USA, ²Acoustic Microscopy and Ultrasound Spectroscopy, Charité - Universitätsmedizin Berlin, Berlin, Germany	Session P1-C10. MTH: Ultrasound Mediated Delivery Chair: Michael Delze Univ. of Illinois	P1-C10-8 Ultrasound-Stimulated Dense Delivery of Reconstituted High Density Lipoprotein Nanoparticles: Effects of Drug Concentration on Tumor Uptake Fangyuan Xiong¹, Mouna Xiong¹, Sabnis Nirupama², Shashank Sriv¹, Andras Lacko², Kenneth Hoyt¹ ¹University of Texas at Dallas, USA, ²University of North Texas Health Sciences Center, USA	P1-C11-6 Assessment Method of Coagulation Spot Connectivity With Localized Motion Imaging To Reduce the Risk of Local Recurrence Shun Yoshimura¹, Takashi Azuma^{1,2}, Hideaki Takeuchi¹, Keisuke Fujiwara¹, Kazumori Imai³, Shu Takagi¹ ¹Mechanical Engineering, the University of Tokyo, Japan, ²Faculty of Medicine, the University of Tokyo, Japan, ³Healthcare, Hitachi, Japan
P1-C8-5 Assessment of Myocardial Viability using Speckle Tracking Echocardiography at High Spatial Resolution Mahdi Tabassian¹, Serkan Onitig¹, Oana Mirea², Jens-Uwe Voigt^{1,3}, Jan D'hooge¹ ¹Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium, ²Department of Cardiology, University Hospital Craiova, Craiova, Romania, ³Division of Cardiology, University Hospitals Leuven, Leuven, Belgium	P1-C9-5 Comparison of Quantitative Ultrasound Parameters For Fat Content Liver Detection and Monitoring Pauline Muleki-Seva¹, Agnau Han¹, Michael P. Andre², John W. Erdman, Jr.³, William D. O'Brien, Jr.¹ ¹Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA, ²Department of Radiology, University of California at San Diego, San Diego, California, USA, ³Department of Food Science and Human Nutrition, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA	P1-C10-1 Ultrasound-enhanced Drug Delivery for Treatment of Onychomycosis Alina Kline-Schoder¹, Zang Le², Vesna Zderic¹ ¹Department of Biomedical Engineering, George Washington University, Washington, DC, USA, ²Department of Podiatry, Medical Faculty Associates, Washington, DC, USA	P1-C10-9 Enhancing Fluorescein Implants using In-Situ Forming PLGA Implants using Therapeutic Ultrasound Peter Bielecki¹, Christopher Hernandez¹, Selva Jegannathan¹, Chawan Manasson¹, Michael Kolos², Agata Exner^{1,3} ¹Biomedical Engineering, Case Western Reserve University, Cleveland, OH, USA, ²Physics, Ryerson University, Toronto, Ontario, Canada, ³Radiology, University Hospitals Cleveland Medical Center, Cleveland, OH, USA	P1-C11-7 Ultrasound Characterization of Slow Precipitating Implants for Vascular Occlusion Selva Jegannathan¹, Danielle Gilbert¹, Christopher Hernandez¹, Siddhartha Tavn², Agata Exner³ ¹Biomedical Engineering, Case Western Reserve University, Cleveland, OH, USA, ²Vascular and Interventional Radiology, University Hospitals Cleveland Medical Center, Cleveland, OH, USA, ³Biomedical Engineering and Radiology, Case Western Reserve University, Cleveland, OH, USA

P1-C8-6 Automated Super-Resolution Image Processing in Ultrasound using Machine Learning Kirsten Christensen Jeffries¹, Markus Schirmer^{2,3}, Jenna Brown¹, Sevan Harput⁴, Meng-Xing Tang⁵, Christopher Dunsby^{5,6}, Paul Aljabar¹, Robert Eckersley¹ ¹Biomedical Engineering, Kings College London, London, United Kingdom, ²Neurology, Harvard Medical School, Boston, MA, USA, ³Computer Science and Artificial Intelligence Lab, Massachusetts Institute of Technology, Boston, MA, USA, ⁴Bioengineering, Imperial College London, London, United Kingdom, ⁵Physics, Imperial College London, London, United Kingdom, ⁶Centre for Pathology, Imperial College London, London, United Kingdom	P1-C9-6 Long-term Movement Analysis of Cervical Vertebrae with Normalized Cross-Correlation and Subsample Estimation Mingxin Zheng^{1,2}, Amin Mohamadi³, Thomas Szabo¹, Brian Snyder^{1,2} ¹Department of Biomedical Engineering, Boston University, Boston, MA, USA, ²Beth Israel Deaconess Medical Center, Boston, MA, USA	P1-C10-2 Antibody-Conjugated Phase-Change Nano-Droplet For Ultrasound Therapeutic Agent Ayumu Ishijima¹, Shinya Yamahira¹, Satoshi Yamaguchi², Etsuko Kobayashi¹, Yoshikazu Shibasaki¹, Takashi Azuma³, Teruyuki Nagamune¹, Ichiro Sakuma¹ ¹School of Engineering, the University of Tokyo, Tokyo, Japan, ²Research Center for Advanced Science and Technology, the University of Tokyo, Tokyo, Japan, ³School of Medicine, the University of Tokyo, Tokyo, Japan	Session P1-C11 MTH: Pre-Clinical Therapeutic Ultrasound Chair: David Melodelima INSERM P1-C11-8 Unilateral Focused Ultrasound-Induced Blood-Brain Barrier Opening Alters Spatial Profile of Hyperphosphorylated Tau in an Alzheimer's Mouse Model. Maria Eleni Karakatsani¹, Tara Kugelman¹, Shutao Wang¹, Karen Duff^{2,3}, Elisa Konofagou^{1,4} ¹Biomedical Engineering, Columbia University, Manhattan, New York, USA, ²Neurobiology & Behavior, Columbia University, Manhattan, New York, USA, ³Taub Institute, Columbia University, Manhattan, NY, USA, ⁴Radiology, Columbia University, Manhattan, New York, USA	P1-C11-9 In-Vitro Delivery of BLM Into Resistant Cancer Cell Line Using Sonoporation With Low-Boiling Point Phase Change Ultrasound Contrast Agents Samantha M. Fix¹, Anthony Novell¹, Jean-Michel Escoffier², James K. Tsuruta³, Paul A. Dayton¹, Ayache Bouakaz² ¹Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, ²Inserm - Imagerie et Cerveau, Université François-Rabelais, France, ³Department of Pediatrics, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA, ⁴Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill and North Carolina State University, Chapel Hill, North Carolina, USA	Session P1-C9 MTC: Bone and Abdominal Organs Chair: Mami Matsukawa Doshisha University P1-C8-7 Identification and Removal of Reflection Artifacts in Photoacoustic Images Using Convolutional Neural Networks Derek Allman¹, Austin Reiter², Muyinatu Bell¹ ¹Electrical and Computer Engineering, Johns Hopkins University, USA, ²Computer Science, Johns Hopkins University, USA	P1-C9-7 Quantitative Ultrasound Parameters in Ex-Vivo Fibrotic Rabbit Livers: Liver Stiffness and Tissue Microstructure Estimation Jean-Michel Escoffier¹, Anthony Novell¹, Ayache Bouakaz², Yanis M. Benane³, Olivier Basset², Emilie Franceschini³ ¹Imagerie et Cerveau, Université François-Rabelais, Inserm, Tours, France, ²Cradis, Univ-Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, UJM-Saint Etienne, CNRS, Inserm, Villeurbanne, France, ³Aix-Marseille Université, Centrale Marseille, Laboratoire de Mécanique et d'Acoustique, CNRS, Marseille, France	P1-C9-8 Effect of Medullary Cavity on the Two Wave Phenomenon in the Distal Part of Long Bone Shoko Nakanishi¹, Yumiko Kinoshita¹, Mami Matsukawa¹ ¹Doshisha University, Kyoto, Japan	P1-C9-9 Quantitative Ultrasound and the Pancreas: Demonstration of Early Detection Capability Rita Miller¹, Aiguo Han¹, John Erdman², Joanna Shisler¹, Matthew Wallig¹, William O'Brien¹ ¹Department of Electrical and Computer Engineering, University of Illinois, USA, ²Department of Food Science and Human Nutrition, University of Illinois, USA, ³Department of Microbiology, University of Illinois, USA, ⁴Department of Pathobiology, University of Illinois, USA	P1-C9-1 the Elastic Properties of Human Cortical Bone Measured by Resonant Ultrasound Spectroscopy At Multiple Skeletal Sites Xiran Cai¹, Laura Peralta¹, Quentin Vallet¹, Nicolas Boechud¹, Oliver Broughton^{2,3}, Richard Abel⁴, Justin Cobb², Kay Raun¹, Jean-Gabriel Minonzio¹, Pascal Laugier¹, Quentin Grimal¹ ¹Sorbonne Universités, UPMC, INSERM UMR-S 1146, CNRS UMR 7371, Laboratoire d'Imagerie Biomedicale, Paris, France, ²The MSK Lab, Imperial College London, London, United Kingdom, ³The Biomechanics Group, Imperial College London, London, United Kingdom, ⁴Berlin Brandenburg School of Regenerative Therapies, Charité-Universitätsmedizin Berlin, Berlin, Germany	P1-C11-10 Retina Stimulation on Rat in vivo with Low-frequency Ultrasound Qiuju Jiang¹, Huixia Zhao¹, Guofeng Li¹, Lan Yue², Qila Zhou², Mark Humayun², Weibao Qiu¹, Huirong Zheng¹ ¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of, ²Department of Biomedical Engineering, University of Southern California, CA, USA	P1-C11-2 Dissolved Oxygen Scavenging by Acoustic Droplet Vaporization using Intravascular Ultrasound Kevin Haworth¹, Bryan Goldstein², Karla Mercado-Shekhari¹, Christy Holland¹, Andrew Redington² ¹Internal Medicine, University of Cincinnati, Cincinnati, Ohio, USA, ²Cardiology, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio, USA	P1-C11-3 Oxygen Microbubbles Improve Tumor Control After Radiotherapy in a Rat Fibrosarcoma Model Samantha M. Fix^{1,2}, Virginie Papadopoulos^{2,3}, Hunter Velds⁴, Sandeep K. Kasoji¹, Judith N. Rivera¹, Mark A. Borden⁴, Sha Chang⁴, Paul A. Dayton³ ¹Department of Biomedical Engineering & Eshelman School of Pharmacy, UNC Chapel Hill, USA, ²These authors contributed equally to this work, USA, ³Department of Biomedical Engineering, UNC Chapel Hill, USA, ⁴Department of Mechanical Engineering, University of Colorado, USA, ⁵Department of Radiation Oncology, UNC Chapel Hill, USA	Session P2-C1 Structural Health Monitoring Chair: Robert Addison Rockwell Science Center
--	---	--	--	---	--	---	---	--	--	--	---	---	--

P2-C2-1 An Advanced Ultrasonic Method Based on Signal Modality for Structural Damage Characterization on Concrete: The Cube Problem Alicia Carrion Garcia¹, Vicente Genovés Gómez², Ramon Miralles Ricós³, Jorge Juan Paya Bernabé⁴, Jorge Gosalbez Castillo¹ ¹Instituto de Telecomunicaciones y Aplicaciones Multimedia (ITEAM), Universitat Politècnica de València, Valencia, Spain; ²Instituto de Ciencia y Tecnología del Hormigón (CITECH), Universitat Politècnica de València, Valencia, Spain	P2-C2-1 High Sensitivity and Wideband Design For Impedance Matching Layer Between Protection Metal and PZT Minoru Toda¹ ¹Toda Microsystems Inc, Lawrenceville, New Jersey, USA	Session P3-C1. PAT - Acoustic Tweezers and Particle Manipulation Chair: Amit Lal Cornell University	P3-C1-8 Acoustic Manipulation of Nanoparticles by Octagonal Surface Acoustic Waves Long Meng¹, Wei Zhou¹, Lili Niu¹, Feiyun Cai¹, Fei Li¹, Hairong Zheng² ¹Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China, ²People's Republic of	P4-C2-1 Fabrication of SAW Resonators on Single-Crystal Diamonds Using Minimal-Fab Process Satoshi Fujita^{1,2}, Hamaki Tonoue³, Yasunari Shiba¹ ¹National Institute of Technology, Okinawa College, Nago, Japan, ²Dept. of Chemical Science and Engineering, Tokyo Institute of Technology, Tokyo, Japan, ³Equipment Service Dept, Yokogawa Solution Service Corporation, Tachikawa, Tokyo, Japan
P2-C1-2 Shearography using Wave-Defect Interactions for Crack Detection in Metallic Structures Huajun Liu¹, Shifeng Guo¹, Yi Fan Chen¹, Hongwei Lin¹, Chin Yaw Tan¹, Karen Lin Ke¹, Lei Zhang¹ ¹Institute of Materials Research and Engineering, A*STAR, Singapore, Singapore	P2-C2-2 Rheological Characterization of Non-Newtonian Drilling Fluids With Non-Invasive Ultrasonic Interrogation Morten Hansen Jondahl¹, Håkon Viundal¹, Saba Mylvaganam¹, Kenneth Nonsjo Mozze¹ ¹Department of Electrical Engineering, IT and Cybernetic, University College of Southeast Norway, Porsgrunn, Norway	P3-C1-1 Acoustic Particle Sorting by Integrated Micro-Machined Ultrasonic Transducers on Polymer-Based Microchips Chen Yang¹, Zhangjian Li¹, Peiyang Li¹, Weiwei Shao¹, Yaoyao Cui¹ ¹Medical Acoustic Department, Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China, ²People's Republic of	P3-C1-9 2D Acoustic Focusing in a Rectangular Micro-Channel of Commercial Flow Cytometers Li Zhangjian¹, Li Peiyang¹, Xu Jie¹, Shao Weiwei¹, Wang Ce¹, Cui Yaoyao¹ ¹Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, Jiangsu, China, ²People's Republic of	P4-C2-2 SAW Correlators on GaN Nancy Saldanha¹, Ryan Westaler¹ ¹Advanced Concepts Laboratory, Georgia Tech Research Institute, Atlanta, Georgia, USA
P2-C1-3 Experimental Setup of Continuous Ultrasonic Monitoring for Corrosion Assessment Nutthawut Suchato¹, Steve Sharples¹, Roger Light¹, Alexander Kalashnikov² ¹Electrical and Electronic Engineering, the University of Nottingham, Nottingham, United Kingdom, ²Engineering and Maths, Sheffield Hallam University, Sheffield, United Kingdom	P2-C2-3 Improvement of Compaction Rate of Radioactive Samples for Gamma Spectrometry Using High Power Ultrasound Jungsoo Kim¹, Jihyang Kim², Minseop Sim², Moojoon Kim² ¹Electrical Engineering, Tongmyong University, Busan, Korea, Republic of, ²Pukyong National University, Korea, Republic of	P3-C1-2 Behavior of the Oscillating Microbubble Clusters Trapped in Focused Ultrasound Field Hironobu Matsuzaki¹, Johan Unga², Taichi Osaki¹, Kei Kawaguchi¹, Mitsuhiro Ichihara³, Takashi Azuma⁴, Ryo Suzuki², Kazuo Maruyama², Shu Takagi¹ ¹Department of Mechanical Engineering, the University of Tokyo, Tokyo, Japan, ²Department of Medical and Pharmaceutical Sciences, Teikyo University, Tokyo, Japan, ³Department of Engineering and Applied Sciences, Sophia University, Tokyo, Japan, ⁴Center for Disease Biology and Integrative Medicine, the University of Tokyo, Tokyo, Japan	Session P4-C1. Design of Thin Film and Lamb Wave Devices Chair: Paul Bradley Broadcom	P4-C2-3 Systematic Synthesis Methodology for the Design of Acoustic Wave Stand-Alone Ladder Filters, Duplexers and Multiplexers. Jordi Verdu¹, Iulia Evdokimova¹, Pedro de Paco¹, Thomas Bauer², Karl Wagner² ¹TES, Universitat Autònoma de Barcelona, Cardanyola del Vallès, Barcelona, Spain, ²RF360 Europe GmbH, Germany
P2-C1-4 Residual Thickness Measurement Method of Corroded Steel Plate Using Ultrasonic SH Array Transducer Tomonori Kimura¹, Akira Hosoya², Mitsuhiro Koike³, Minoru Takahashi¹, Jun Murakoshi³ ¹Mitsubishi Electric Corporation, Japan, ²Ryoden Shonan Electric Corporation, Japan, ³Public Works Research Institute, Japan	P2-C2-4 Multi-Layer Piezoelectric PVDF Transducers for Nondestructive Testing of Concrete Structures Kamal Raj Chapagain¹, Sanat Wagle¹, Werner Bjerke¹, Terje Melandso², Frank Melandso² ¹ELOP AS, Hamar, Norway, ²University of Tromsø, Norway	3-C1-3 Bioparticle Manipulations Using Lamb Wave Resonator Array Hongxiang Zhang¹, Zifan Tang¹, Zhan Wang¹, Shuting Pan¹, Chongling Sun¹, Xuexin Duan¹, Wei Pang¹ ¹Institution State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, Tianjin, China, ²People's Republic of	P4-C1-1 High-Coupling Leaky SAWs on LiTaO₃ Thin Plate Bonded to Quartz Substrate Junki Hayashi¹, Masashi Gomi¹, Masashi Suzuki¹, Shoji Kakio¹, Hanuka Suzuki², Toshihumi Yonai³, Kazuhito Kishida³, Jun Mizuno² ¹University of Yamaguchi, Japan, ²Waseda University, Tokyo, Japan, ³The Japan Steel Works, Ltd., Tokyo, Japan	P4-C2-4 Design of RF power divider/combiner based on surface acoustic wave technology Elhadji Mansour Fall¹, Alexandre Reinhardt², Frédéric Domingue¹ ¹Laboratoire de Microsystèmes et Télécommunications, Université du Québec à Trois-Rivières, Trois-Rivières, Québec, Canada, ²CEA-LETI, Commissariat à l'énergie atomique et aux énergies alternatives, Grenoble, France

P2-C1-5 Ultrasonic Detection of Spark Eroded Notches in Steel Plates Petter Norri¹, Oyvind K.-V. Standa^{2,3}, Martijn Frijltak^{2,3}, Fabrice Prieur^{4,1}, Mark Tanne⁵, Katharina Haakenstad¹ ¹Halfwave AS, Hovik, Akershus, Norway, ²InPhase AS, Trondheim, Norway, ³Halfwave AS, Hovik, Norway, ⁴Department of Informatics, University of Oslo, Oslo, Norway, ⁵Halfwave AS, Portland, United Kingdom	P2-C2-5 Development of Dumbbell-Shape Vibration Source With Longitudinal and Torsional Transducers for Ultrasonic Metal Welding Takuya Asami¹, Yosuke Tamada¹, Yusuke Higuchi¹, Hikaru Miura¹ ¹College of Science and Technology, Nihon University, Tokyo, Japan	P3-C1-4 Manipulation of Microbubbles in Rabbit Blood Vessel by Using Ultrasonic Standing Wave- an in Vitro Study Alwei Shi¹, Xuan Du¹, Shukuan Lu¹, Lu Zhao¹, Bowen Jing¹, Lei Zhang¹, Yun Zong¹, Mingxi Wan¹ ¹Xi'an Jiaotong University, China, People's Republic of	P4-C1-2 the Frequency Switchable Multi-Layered BST/BaTiO₃ Epitaxial Film Resonator Takahiro Shimidzu¹, Takahiko Yanagita^{1,2}, Kyotaka Wada³ ¹Waseda University, Japan, ²JST PRESTO, Japan, ³Yokohama City University, Japan	P4-C2-5 SAW RFID with Enhanced Penetration Depth Xupeng Zhao¹, Ruchuan Shi¹, Peng Qin¹, Xiaojun Ji¹, Yixin Ma¹, Yumei Wen¹, Ping Li¹, Tao Han¹ ¹Department of Instrument Science and Engineering, Shanghai Jiao Tong University, Shanghai, China, People's Republic of
P2-C1-6 Numerical and Experimental Investigations of Nonlinear S0 Lamb Mode For Detection of Fatigue Damage Congyun Ma¹, Yanxun Xiang¹, Wujun Zhu¹, Mingxi Deng², Fu-Zhen Xuan¹, Haiyan Zhang³ ¹East China University of Science and Technology, China, People's Republic of, ²Logistics Engineering University, China, People's Republic of, ³School of Communication and Information Engineering, Shanghai University, China, People's Republic of	P2-C2-6 Development of Highly Efficient Piezoelectric Gas Composite Probe for Air-Coupled Ultrasonic Testing Toshihiro Tsuji¹, Daitaro Kishihara¹, Yasuhiro Tanaka¹, Yoshikazu Ohara¹, Tsuyoshi Mihara¹ ¹Tohoku University, Japan, ²Tohoku University, Tohoku University, Japan	P3-C1-5 Discrimination of Minimal Residual Disease in Acute Lymphoblastic Leukemia by Using Single-beam Acoustic Tweezer Hsiao-Chuan Liu^{1,2}, Hye Na Kim², Enzi Jiang², Hae Lim¹, Ruimin Chen¹, Yong-Mi Kim^{2,3}, K. Kirk Shung¹ ¹Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA, ²Department of Pediatrics, Division of Hematology/Oncology, Children's Hospital Los Angeles, Los Angeles, California, USA, ³Pediatrics and Pathology, University of Southern California, Los Angeles, USA	P4-C1-3 Zero TCF Resonator Based on S₀ Lamb Wave Mode in AlN Thin Plate Films Mohammed Moutaouekki^{1,2}, Abdelkrim Talbi², Omar Elmazria¹, El Houssaine El Boudouir³, Philippe Pernod³, Olivier Bou Matar² ¹Institut Jean Lamour UMR 7198, Université de Lorraine - CNRS, Nancy, France, ²LIA LEMAC/LICS - IEMN UMR CNRS 8520, ECLILLE - USTL, PRES Université Lille Nord de France, Villeneuve d'Ascq, France, ³Laboratoire de Physique de la Matière et de Rayonnements, Faculté des Sciences, Université Mohammed I, Oujda, Morocco	P4-C2-6 Long Range Wireless SAW Passive Tag System For Vibration Monitoring Koki Shibata¹, Eiki Takahashi¹, Hitoshi Fujiwara¹, Tamotsu Suda¹, Jun Kondoh², Tsuyoshi Hirose³, Yusuke Toyota³, Masayuki Ozaki⁴ ¹Japan Radio Co., Ltd., Japan, ²Shizuoka University, Japan, ³Nippon Expressway Research Institute Company Limited, Japan, ⁴New Japan Radio Co., Ltd., Japan
P2-C1-7 Non-Contact Harmonic Imaging of Crack in Acrylic Plate by Using High Intensity Aerial Ultrasonic Wave and Laser Doppler Vibrometer Ayumu Osumi¹, Youichi Ito¹ ¹College of Science and Technology, Nihon University, Japan	P2-C2-7 Development of Hertzian Contact Ultrasonic Probe for Couplant-Free Concrete Measurement Toshihiro Tsuji¹, Ryota Ikoma¹, Yoshikazu Ohara¹, Tsuyoshi Mihara¹ ¹Tohoku University, Japan	P3-C1-6 Microparticle Manipulation using Dual-Wavelength Surface Acoustic Wave Devices Jin-Chen Hsu¹, Chih-Hsun Hsu¹ ¹Department of Mechanical Engineering, National Yunlin University of Science and Technology, Douliou, Yunlin, Taiwan	P4-C1-4 Low Loss Delay Lines Based on Suspended Thin Film of X-Cut Lithium Niobate Gabriel Vidal-Alvarez¹, Abhay Kochhar¹, Gianluca Piazza¹ ¹Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA	P4-C2-7 Self-healing Narrowband Filters via 3D Heterogeneous Integration of AIN MEMS and CMOS chips Enes Calayir¹, Jinglin Xu¹, Larry Pileggi¹, Gary K. Fedder¹, Srinivas Merugu², Navab Singh², Gianluca Piazza¹ ¹Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA, ²Institute of Microelectronics, Agency for Science and Technology (A*STAR), Singapore
Session P2-C2. Transducers and Industrial Measurements Chair: Lawrence Kessler Sonoscan Inc.	P2-C2-8 An Authentication and Identification System of Copper Containers for Spent Nuclear Fuel by means of an Ultrasonic Probe with a Beam Splitter Chiara Clementi^{1,2}, Lorenzo Capinetti¹, Francois Littmann² ¹Dept. of Information engineering, University of Florence, Firenze, Italy, ²Nuclear Security Unit, Joint Research Centre of the European Commission, Ispra, VA, Italy	P3-C1-7 Synthesized-Sound Manipulation of Microparticles: Principle and Experiments Shuang Deng¹, Kun Jia², Zongwei Fan^{3,4}, Haoran Jin¹, Keji Yang¹ ¹College of mechanical engineering, Zhejiang University, Hangzhou, Zhejiang, China, People's Republic of, ²School of Aerospace Engineering, Xi'an Jiaotong University, Xi'an, Shanxi, China, People's Republic of, ³College of Engineering, Qufu Normal University, Rizhao, Shandong, China, People's Republic of, ⁴School of Mechanical Engineering, Hangzhou Dianzi University, Hangzhou, Zhejiang, China, People's Republic of	Session P4-C2. Microacoustic Devices and System Applications Chair: Karl Wagner RF360 Europe GmbH	P4-C2-8 Electrical Characteristics of SAW Filters on SiO₂/AlN/In_{0.5} Ga_{0.5} As Structure For Inverter Multiplex Transmission Systems Fumiya Kobayashi¹, Shoji Kakio², Shigeoyoshi Goka¹, Keiji Wada¹ ¹Graduate School of Science and Engineering, Tokyo Metropolitan University, Hachioji-shi, Tokyo, Japan, ²Interdisciplinary Graduate School of Medicine and Engineering, University of Yamaguchi, Kofu-shi, Yamaguchi, Japan

9:30 am – 4:00 pm

Poster --- Saturday, September 9, 2017

Exhibit Hall

P4-C2-9 Edge Reflection Type SAW Resonators on Silicon Substrate Using ZnO Thin Films Sai Krishna Gollapudi¹, Harsha B Nemad² ¹Electronics and Electrical Engineering, Indian Institute of Technology Guwahati, Guwahati, assam, India, ²Electronics and Electrical Engineering, Indian Institute of Technology Guwahati, Guwahati, Assam, India	P5-C1-7 Output Pressure and Pulse-Echo Characteristics of Capacitive Micromachined Ultrasonic Transducers as Function of Plate Thickness Soren Elmin Diederichsen¹, Jesper Mark Fly Hansen¹, Mathias Engholm¹, Jorgen Arendt Jensen², Erik Vilain Thomsen¹ ¹Department of Micro- and Nanotechnology, Technical University of Denmark, Denmark, ²Center for Fast Ultrasound Imaging, Technical University of Denmark, Denmark	P5-C3-1 the Progress in the Growth of Relaxor-based Ferroelectric Single Crystals Guisheng Xu¹, Jinfeng Liu¹, Xin Zhu¹ ¹Artificial Crystal Center, Shanghai Institute of Ceramics, CAS, Shanghai, China, People's Republic of	P5-C3-9 Fabrication and Analysis of a Flexible PZT-Polymer Laminated Composite Cantilever Beam in Sensing and Actuation Modes Zheng Min¹, Mohammad Gudarzi¹, Qing-Ming Wang¹ ¹Mechanical Engineering and Materials Science, University of Pittsburgh, Pittsburgh, PA, USA	
Session P5-C1. MUT Measurement and Modelling Chair: Yongrae Roh Kyungpook National University	P5-C1-8 Design and Measurement of a 32-Element CMUT Linear Array For Underwater Imaging Congcong Hao¹, Changde He¹, Weijian Liang¹, Guojun Zhang¹, Binzhen Zhang¹, Wendong Zhang¹, Chenyang Xue¹ ¹Key Laboratory of Instrumentation Science & Dynamic Measurement, Ministry of Education, North University of China, Taiyuan, China, People's Republic of	P5-C3-2 Acoustical Characterisation of Carbon Nanotube-Loaded Polydimethylsiloxane Used for Optical Ultrasound Generation Erwin J. Alles¹, Jeongmin Heo², Sacha Noimark^{1,3}, Richard J. Colchester¹, Ivan P. Parkin¹, Hyoung Won Baac², Adrien E. Desjardins¹ ¹Department of Medical Physics & Biomedical Engineering, University College London, London, United Kingdom, ²School of Electronic and Electrical Engineering, Sungkyunkwan University, Seoul, Korea, Republic of, ³Materials Chemistry Research Centre, Department of Chemistry, University College London, London, United Kingdom	P5-C3-10 Air-Coupled and Water Immersion Sectorized Array Transducers for Industrial and Medical Endoscopy. Tomas Gomez Alvarez-Arenas¹, Luis Diez¹ ¹Institute of Physical and Information Technologies (ITEFI), Spanish National Research Council (CSIC), Madrid, Madrid, Spain	
P5-C1-1 Assessment of Imaging Capability of 16x16 2D cMUT Transducer Arrays Tony Matéo¹, Cyril Meynier¹, Dominique Gross¹, Ludovic Pasquet¹, Audren Boulmé², Dominique Certon², Nicolas Sénégon¹ ¹Advanced Research Dpt., Vermon S.A., Tours, France, ²GREMAN UMR-CNRS 7347, Université François Rabelais de Tours, France	Session P5-C2. Therapeutic Devices and Systems Chair: Qifa Zhou University of Southern California	P5-C3-3 High-Frequency Acoustic Characterization of Porous Lead Zirconate Titanate for Backing Applications Daniela Kusser¹, Julien Bustillo², André-Pierre Abellard³, Marc Lethiecq², Tina Bakarić¹, Franck Levasort² ¹Electronic Ceramics Department, Jozef Stefan Institute, Ljubljana, Slovenia, ²GREMAN UMR7347 CNRS, Tours University, INSA Centre Val de Loire, Tours, France, ³MAT-Centre des Matériaux UMR7633 CNRS, Mines-ParisTech, PSL Research University, Evry, France	P5-C3-11 Cylindrical and Quasi-Cylindrical Focalization of Air-Coupled Single Element and Linear Array Transducers. Tomas Gomez Alvarez-Arenas¹, Jorge Camacho¹, Luis Diez¹ ¹Institute of Physical and Information Technologies (ITEFI), Spanish National Research Council (CSIC), Madrid, Madrid, Spain	
P5-C1-2 Simulating CMUT Arrays Using Time Domain FEA Mathias Engholm¹, Andrew Tweedie², Soren E. Diederichsen¹, Gerald Harvey³, Jorgen A. Jensen¹, Erik V. Thomsen¹ ¹Department of Micro and Nanotechnology, Technical University of Denmark, Kgs. Lyngby, Denmark, ²PZFlex, Glasgow, United Kingdom, ³PZFlex, Cupertino, USA, ⁴Center For Fast Ultrasound Imaging, Technical University of Denmark, Kgs. Lyngby, Denmark	P5-C2-1 Analysis of CMUT Power Efficiency for Optimized Therapeutic Operation Dominique Gross¹, Audren Boulmé², Nicolas Sénégon¹, Christopher Bawiec³, W. Apoutou NDjin¹, Dominique Certon¹ ¹Advanced Research Dpt., Vermon S.A., Tours, France, ²GREMAN UMR 7347, Université François-Rabelais de Tours, Tours, France, ³U1032 Labtau, Inserm, Lyon, France	P5-C3-4 Complete Electroelastic Set of Co Doped Barium Titanate for Transducer Applications Remy Ul^{1,2}, Rémi Rouffaud¹, Mai Phan Thi², Claire Bantignies¹, Louis-Pascal Tran-Huu-Hue¹, Franck Levasort¹ ¹GREMAN UMR7347 CNRS, Tours University, INSA Centre Val de Loire, Tours, France, ²Thales Research & Technology, Palaiseau, France, ³Advanced Research department, VERMON SA, Tours, France		

P5-C1-3 Using a Mutual Impedance Model to Improve the Time Response of PMUT Arrays Qi Wang¹, David Horsley¹ ¹Mechanical and Aerospace Engineering, University of California, Davis, CA, USA	P5-C2-2 a Low-Cost 10 mm Diameter Histotripsy Transducer for Tissue Ablation Guided by a Co-Registered High-Frequency Endoscopic Phased Array Jeffrey Woodacre¹, Thomas Landry¹, Jeremy Brown¹ ¹Biomedical Engineering, Dalhousie University, Halifax, Nova Scotia, Canada	P5-C3-5 3D Printing of Piezoelectric Transducer/Array for Ultrasonic Imaging Zeyu Chen¹, Xuan Song², Yong Chen³, K. K. Shung⁴, Qifa Zhou⁵ ¹Biomedical Engineering, University of Southern California, USA, ²College of Engineering, the University of Iowa, USA, ³Epstein Department of Industrial and Systems Engineering, University of Southern California, USA, ⁴University of Southern California, USA, ⁵Roski Eye Institute, Department of Ophthalmology and Biomedical Engineering, University of Southern California, USA	
P5-C1-4 Analytical Calculation and Fabrication of FET-Embedded Capacitive Micromachined Ultrasonic Transducer Jin Soo Park^{1,2}, Jung Yeon Kim^{1,3}, Hee-Kyoung Bae¹, Jinsik Kim¹, Kyo Seon Hwang⁴, Jung Ho Park⁵, Rino Choi¹, Byung Chul Lee^{1,6} ¹Center for BioMicrosystems, Korea Institute of Science and Technology, Korea, Republic of, ²Korea University, Korea, Republic of, ³Inha University, Korea, Republic of, ⁴National Nanofab Center, Korea, Republic of, ⁵Dongguk University, Korea, Republic of, ⁶Kyung Hee University, Korea, Republic of, ⁷University of Science and Technology, Korea, Republic of	P5-C2-3 Optimal Phase on Biaxial Driven Transducers Based only on Electrical Power Measurements Sagid Delgado¹, Laura Curiel^{1,2}, Oleg Rubel³, Geovane Da Silva⁴, Samuel Pichardo^{3,2} ¹Electrical engineering, Lakehead University, Thunder Bay, ON, Canada, ²Thunder Bay Regional Health Research Institute, Thunder Bay, ON, Canada, ³Material Science and Engineering, McMaster University, Hamilton, ON, Canada, ⁴Electrical Engineering, Universidade Regional de Blumenau, Blumenau, SC, Brazil	P5-C3-6 High Sensitivity Pressure Sensors Based on Flexible Bimorph PZT/Polyimide Composites Jiangyue Qu¹, Mohammad Gudarzi¹, Qing-Ming Wang¹ ¹Mechanical Engineering and Materials Science, University of Pittsburgh, Pittsburgh, PA, USA	
P5-C1-5 Multiparameter Optimization of Vented cMUTs for Airborne Applications Bo Ma¹, Chienliu Chang¹, Huseyin Kagan Oguz¹, Kamyar Firoozi¹, Butrus T. Khuri-Yakub¹ ¹Electrical Engineering, Stanford University, Stanford, California, USA	P5-C2-4 an Open Source Modular and Scalable HIFU Driver System Huseyin Emre Ozum¹, Arif Sanli Ergun¹, Hasan Yetik² ¹Electrical and Electronics Engineering, TOBB University of Economics and Technology, Ankara, Turkey, ²Center of Research for Advanced Technologies of Informatics and Information Security (BILGEM), Kocaeli, Turkey	P5-C3-7 High Temperature Performance of PbTiO₃/Pb(Zr,Ti)O₃ Thick Films Poled by Pulse Discharge at Room Temperature Hikaru Kouryama¹, Takao Namihira¹, Makiko Kobayashi¹ ¹Kumamoto University, Japan	
P5-C1-6 Accurate Evaluation of the Electro-Mechanical and Parasitic Parameters of cMUTs through Electrical Impedance Characterization Alessandro Stuart Savoia¹, Barbara Mauti¹, Giosuè Cialiano¹ ¹Roma Tre University - Department of Engineering, Roma, Italy	Session P5-C3. Transducer Materials Chair: Shujun Zhang University of Wollongong	P5-C3-8 Sputter Technique For Deposition of AlN and ScAlN Thin Films in Mass Production Valery Felmetger¹ ¹PVD, OEM Group LLC, Gilbert, AZ, USA	

Author Index

A

A Hacker, Timothy.....P1-A4-17
 Aakhuis, Svend.....P1-A6-8
 Aase, Svein Arne.....1A-6, P1-B5-3, P1-C8-3
 Abbass, Mohamed.....1C-5, P1-B11-3
 Abbey, Craig.....4K-3
 Abbott, Benjamin.....7H-3
 Abdelmejeed, Mamdouh.....6E-1
 Abdolvand, Reza.....P4-B2-4
 Abel, Richard.....P1-C9-1
 Abellard, André-Pierre.....P5-C3-3
 Aberdam, Aviad.....4J-5
 Aboagye, Eric O.....P1-C4-7
 Abolmaesumi, Purang.....P1-A1-5
 Abou-Elkacem, Lotfi.....1E-4
 Abreo, Sergio A.....P3-A3-2
 Accocia, Christopher.....3H-5, P1-A3-4
 Achim, Alin.....5K-1
 Acosta, Camilo.....1G-4
 Acton, Scott.....4K-2
 Adam, Dan.....2I-5, 3K-2, P1-C1-10
 Adamowski, Jülio.....P3-B1-1
 Adams, Chris.....1C-3
 Adelegan, Oluwafemi Joel. 7A-3, 7E-6, P5-A1-3, PA-16
 Adema, Gosse.....P1-A7-7
 Advincula, Rigoberto.....P1-B4-2
 Afzal, Muhammad Shakeel.....P2B3-1
 Agalliu, Dritan.....1G-4
 Ages, Kristine.....P1-C6-16
 Aggrawal, Shelly.....7K-6
 Aglyamov, Salavat.....2K-1, P1-C6-12
 Agnelli, Sandro.....P2A1-1
 Agrawal, Megha.....5C-6
 Ahmed, Rifat.....3E-4, P1-B5-5
 Aichele, Johannes.....P3-B1-4
 Aigner, Robert.....5D-4, 7H-3
 Ajima, Daisuke.....7H-1
 Akhlagi, Nima.....P1-B7-6, P1-C8-4
 Akhter, Afsana.....3J-3
 Akstaller, Wolfgang.....P4-A2-5
 Alavi Tamaddon, Hedieh.....P1-A11-3
 Alekseev, Sergei.....P3-B1-15
 Alexander, Marci.....P1-B5-7, P1-C6-1, P1-C6-7
 Alexiou, Christoph.....P1-B7-2
 Ali, Rehman.....P1-A10-8
 Alizad, Azra.....1E-2, 3E-1, P1-C1-11, P1-C5-6
 Aljabar, Paul.....3K-3, P1-C8-6
 Alles, Erwin J.....P1-B8-2, P5-C3-2
 Allman, Derek.....P1-C8-7
 Al-Mahrouki, Azza.....P1-A7-4
 Alonso, Miguel.....P3-B1-3
 Alshahrani, Suhail.....P1-B8-5
 Alshaya, Abdulrhman.....4D-2
 Altman, Michael.....P1-B2-9
 Amadio, Peter C.....P1-A5-3
 Amador Carrascal, Carolina.....P1-C5-5
 Ambroziński, Łukasz.....3D-2, P1-B5-1, P2A3-8
 Anand, Ajay.....P1-A1-9
 Anastasiadis, Pavlos.....1F-3
 Anastasio, Mark.....P1-B8-5
 Andersen, Kenneth K.....P5-A3-5
 Andersen, Martin.....P1-C6-16
 Anderson, Tom.....P1-C9-2
 Andersson, Roger.....P1-A9-9, P1-B7-3
 Ando, Keita.....P2B3-3
 Andrade, José Henrique.....P3-B1-1
 Andre, Michael P.....P1-C9-5
 Angelsen, Bjørn Atle J.....2B-1, P1-C3-6

Ankou, Bénédicte.....1C-4
 Anthony, Brian.....P1-A5-6, P1-A8-1
 Apostolakis, Iason Zacharias.....5K-6, P1-B11-1
 Aquino, Wilkins.....2G-4
 Arabul, Ümit.....4B-3, P1-A7-2
 Arbabian, Amin.....7D-1, 7D-4, 7E-1
 Arditi, Marcel.....2I-2, P1-A9-1
 Arena, Christopher.....P1-C10-5
 Arendt Jensen, Jørgen. 4A-6, 7F-5, P1-B1-1, P5-C1-7
 Aristizabal, Orlando.....P1-A2-8
 Aristizabal, Sara.....3E-3, P1-C5-5
 Arnal, Bastien.....1I-3, 3A-4, 3B-1
 Arnaudov, Yavor.....5H-2, 5H-4
 Arvanitis, Costas.....1K-2
 Asami, Takuya.....P2C2-5
 Askoxylakis, Vasileios.....1K-2
 Assef, Amauri.....P1-A9-2
 Assi, Kondo Claude.....4I-4
 Au, Anthony.....P1-B7-5
 Aubert, Thierry.....6B-5, 7C-1, 7J-4, PA-15
 Auboire, Laurent.....P1-B11-9
 Audigier, Chloe.....P1-B11-7
 Augustsson, Per.....6D-1
 Aurup, Christian.....P1-A11-8
 Austeng, Andreas.....2A-3, 2B-2, 2C-6, P1-A1-4, P1-B1-7
 Auvity, Sylvain.....1F-2
 Avalos, Pablo.....1I-6
 Avdal, Jørgen.....4A-3, P1-B3-1, P1-B3-5
 Averkiou, Michalakis.....P1-A3-7
 Avritscher, Rony.....4E-4, P1-A7-3
 Avrutsky, Ivan.....P1-B8-5
 Awad, Hani.....1I-6
 Aydin, Mehmet.....6I-4
 Ayes, Armando.....6E-3
 Azari, Hoda.....5B-2
 Azuma, Takashi.....P1-C10-2, P1-C11-6, P3-C1-2

B

Baas, Hyoungh Won.....P2A2-5, P5-C3-2
 Bachawal, Sunitha.....3B-6, 3J-1, 3J-4
 Bachmann Nielsen, Michael.....P1-A2-6
 Badescu, Emilia.....4A-4, 7A-5, P1-B1-6
 Badin, Romina.....1G-3
 Bae, Hee-Kyoung.....P5-C1-4
 Bae, Hyun.....1I-6
 Bagolini, Alvise.....P5-B2-1
 Bai, Deen.....6K-5, P5-A3-1
 Bailey, Michael.....3A-2, 3A-5, 6I-5, P1-B7-9
 Bakaric, Tina.....P5-C3-3
 Bakhtiari, Sasan.....P2B1-3
 Balcerzak, Andrzej.....P3-B1-6, P3-B1-9
 Balé, Antoine.....P5-A3-3
 Ballandras, Sylvain.....P4-A1-4
 Balteanu, Bogdan.....1I-5, 1J-5
 Baltsavias, Spyridon.....7D-1
 Bamber, Jeffrey.....4D-5, 4F-5
 Bandaru, Raja Sekhar.....P1-A5-3
 Bantignies, Claire.....7B-2, P5-C3-4
 Bao, Jingfu.....7H-4, P4-A1-2
 Baranger, Jerome.....4I-6
 Bardelli, Roberto.....P5-B2-6
 Bar-Ilan, Eliav.....4J-5
 Barquero, Phd., Harold.....P5-B1-9
 Barsukou, Siarhei.....P4-A1-5
 Bartholmai, Brian.....2K-6, P1-C6-15
 Bartoli, Florian.....6B-5, 7C-1, 7J-4, PA-15
 Bar-Zion, Avinoam.....3K-2
 Basarab, Adrian.....2I-4, 5K-1, P1-A6-6

Bashford, Gregory.....1A-5
 Basij, Maryam.....4E-6
 Basilion, James P.....3J-3
 Basset, Olivier.....3D-4, 5K-4, P1-A9-8, P1-C9-7
 Bassi, Luca.....2D-2, 2E-1, 4H-1
 Baudrie, Véronique.....5J-2
 Bauer, Thomas.....7H-2, P4-C2-3
 Bawiec, Christopher.....7G-3, P5-C2-1
 Bayat, Mahdi.....1E-2, 3E-1, P1-C5-6
 Beard, Paul C.....6E-2, P1-B8-2, PA-8
 Bech, Solveig.....5I-5
 Bednars, Bryan.....7A-1
 Beekers, Inés.....P1-C3-3
 Beers, Christopher.....4J-2
 Bel, Alain.....3B-1
 Belau, Markus.....1E-3, PA-5
 Bell, Muyinatu Lediju P1-A1-2, P1-B8-4, P1-C8-7
 Bellan, Leon.....P1-B3-2
 Bellutti, Pierluigi.....P5-B2-1
 Ben Cheikh, Bassem.....P1-B10-1
 Benane, Yanis.....5K-4, P1-A9-8, P1-C9-7
 Benchabane, Sarah.....6H-1
 Bencivenga, Filippo.....6C-1
 Bendavid, Shiran.....1I-6
 Benini, Luca.....6K-6
 Bentivegna, Valerie.....P3-B1-2
 Bera, Deep.....4J-3, 7F-1, PA-17
 Béra, Jean-Christophe.....P1-A1-3, P1-B11-5
 Bera, Tushar Kanti.....P1-B7-8
 Berg, Sigrid.....P1-C3-6
 Bergés, Mario.....5A-4
 Bergmans, Jan W.M.....P1-B9-1
 Bernabeu, Miguel.....1K-2
 Bernal, Miguel.....5J-4
 Bernard, Adeline.....2E-2, 3D-4, P1-A9-4, P1-C7-5
 Bernard, Olivier.....2C-6, 2J-3, P1-A9-5, P1-B1-3, P1-C8-2
 Berndt, Elizabeth.....4B-6
 Berthon, Beatrice.....1D-6
 Bessière, Francis.....1C-4
 Besson, Adrien.....2I-2, P1-A9-1, P1-A9-6
 Beuve, Steve.....3F-4
 Bez, Maxim.....1I-6
 Bezagu, Marine.....1K-1
 Bhethanabotla, Venkat.....6E-5
 Bielecki, Peter.....P1-C10-9
 Bigelow, Timothy.....P1-A11-7
 Bird, Matthew.....3F-6
 Biryukov, Sergey.....P4-A1-6
 Bittner, James.....5C-1
 Bjåstad, Tore 1A-6, 4A-1, 4A-3, P1-A6-8, P1-B5-3
 Bjerke, Werner.....P2C2-4
 Blackshire, James.....5B-4
 Blackwell, John.....3G-2
 Blaize, Kevin.....1E-5
 Blank, Celine.....P1-A6-1
 Bleyl, Ingo.....5D-2, P4-B1-1, PA-13
 Blochet, Baptiste.....P1-A5-1
 Bo Stuart, Matthias.....4A-6
 Bocheux, Romain.....1K-1
 Bochud, Nicolas.....P1-C9-1
 Boctor, Emad.....4B-4, 4E-5, P1-B11-7, P1-B9-10
 Boisson-Vidal, Catherine.....3A-4
 Bok, Tae-Hoon.....4E-1
 Boni, Enrico.....2D-2, 2E-1, 2J-4
 Borden, Mark A.....3I-3, P1-A11-1, P1-A3-1, P1-C11-3
 Borges, Felipe.....P1-A10-2
 Borodina, Irina.....P2A2-1, P2A2-2
 Bosch Roig, Ignacio.....5C-2

Bosch, Johannes G. . 2E-5, 4A-2, 4J-3, 6G-2, 7F-1, 7F-4, P1-A4-13, P1-A5-3, P5-A3-4, PA-17	Cain, Charles3A-1, 3B-2	Chen, Chao 6J-4, 7F-1, PA-17
Bost, Wolfgang.....P1-A10-6	Calayir, EnesP4-B2-2, P4-C2-7	Chen, Cherry.....P1-C10-5
Bottenus, Nicholas3D-1, P1-C1-2	Caliano, GiosuèP5-B2-1, P5-B2-6, P5-C1-6	Chen, Chuan3E-2, 4J-4, 4J-6
Bottlaender, Michel1F-2	Callé, SamuelP1-C6-8	Chen, Hong.....P1-B2-9
Bou Matar, Olivier 7J-4, P4-C1-3, PA-15	Caloone, Jonathan1C-1	Chen, Hong-Sheng.....P1-A9-7
Bouakaz, Ayache. 1H-6, P1-B11-9, P1-C11-9, P1-C2-3, P1-C3-3, P1-C4-10, P1-C9-7	Camacho, JorgeP5-C3-11	Chen, Jianfeng6A-4
Bouchard, Richard... 4E-4, P1-A7-3, P1-B3-3, P3-A1-2	Camarena, Francisco.....P3-A3-4	Chen, Johnson.....P1-C6-10
Bouchoux, Guillaume..... 7G-3	Campbell, CraigP1-B9-9	Chen, Jun3D-6
Boughton, OliverP1-C9-1	Campomanes, Pablo.....1H-6	Chen, M.Y.P1-B11-8
Boulmé, AudrenP5-C1-1, P5-C2-1	Camps, SaskiaP1-A6-4	Chen, Mian5E-4
Boulos, PaulP1-B11-5	Canagarajah, Nishan5K-1	Chen, Pei-Yu.....4A-5, P1-B10-6, P1-C2-2
Bourguignon, Sébastien 6G-3	Canizzo, Andrea.....6C-1	Chen, Ruimin.....7A-2, P3-C1-5, P5-B1-7
Bouzari, Hamed.....4A-6, 4J-2, P1-B1-1	Cao, Kaihua6F-5, P2A1-2	Chen, RunkangP1-B2-1
Boyes, Aaron7B-5	Cao, Yanping2G-2, 5J-5, P1-A4-11	Chen, S.P.P1-B11-8
Bozkurt, Ayhan6I-4	Cao, Zongliang5D-1, 5D-3	Chen, Shigao..2C-1, 3D-3, 3K-4, 4H-5, P1-B3-6, P1-C3-2, P1-C3-8
Braconnier, Dominique 6G-3	Capineri, LorenzoP2C2-8	Chen, Shujie.....2B-5, P3-B1-3
Bradway, David.....1A-1, 2J-5, 3D-1	Capotondi, Flavio6C-1	Chen, Siping ... 2K-3, P1-A8-5, P1-C6-3, P5-A1-2
Braga, MartaP1-C4-7	Carcreff, Ewen6G-3	Chen, WeiqiuP3-A2-4
Bridal, Timothy C.3A-5	Caresio, Cristina.....P1-C4-12	Chen, Weishan.....P3-A4-1
Brehm, Holger5G-5	Carlotti, Giovanni6B-1, 6C-4	Chen, Xin2K-3, P1-C6-3
Brende, Ole Martin.....2B-1	Carlson, Johan E.6G-6, P2B1-8	Chen, Xucai1H-3, P1-A3-2, P1-C10-6
Brenner, Renald.....2H-6	Carlson, Kent5J-6	Chen, Yao1C-6
Bridal, S. Lori3G-4, P1-B10-1	Carlson, Roy1C-2	Chen, Yi FanP2C1-2
Brizzotti, MarcoP3-B1-1	Carneiro, Antonio ...P1-A10-2, P1-B4-9, P1-B8-7	Chen, Yingna.....P1-A7-8
Broder, Joshua S.2E-3, P1-B9-8	Carol, Mark1C-2, P1-B9-9	Chen, Yinran.....2F-2, P1-C1-9
Brown, DavidP1-C10-7	Carpenter, Thomas1C-3, 3I-5, 6K-3	Chen, Yong6K-2, P5-C3-5
Brown, Jemma. 3C-3, 3H-1, 3H-3, 3K-1, 3K-3, P1-C8-6	Carr, Jacob1C-2	Chen, Zeyu6K-2, P5-C3-5
Brown, Jeremy.....6J-6, 7B-1, P5-C2-2	Carrión Garcia, Alicia.....5C-2, P2C1-1	Chen, Zhao.....6J-4, 7F-1, PA-17
Brown, Michael5G-1, PA-10	Carson, Nancy2G-5	Cheng, Christopher.....7B-4
Brown, Stephen6A-1	Carson, Paul5K-5	Cheng, Liang.....1C-2
Bruce, Matthew3J-2, P1-A3-7	Carver, Thomas E.6E-4	Cheng, QianP1-A7-8
Brum, Javier3F-2, 5J-4	Caskey, Charles6I-3	Chérin, Emmanuel3I-1, 6J-2, P5-A1-5
Bruneval, Patrick3B-1	Catheline, Stefan1C-4, P1-B5-11, P3-B1-4	Chernyakova, Tanya.....4J-5
Brunke, ShelbyP1-A10-5	Caughey, Melissa3F-1, 3F-5	Chevalier, Philippe1C-4
Brusseau, Elisabeth3D-4	Cauwenberghs, Nicholas2I-5	Chiang, Pei-Hua.....P1-B4-8
Büchner, Karl5H-1, PA-9	Ce, WangP3-C1-9	Chin, Chien TingP1-B11-8
Budelli, Eliana3F-2	Ceroici, Christopher6J-1, 6J-6	Chintada, Bhaskara RaoP1-A10-6, P1-C5-8
Bujoreanu, Denis5K-4, P1-A9-4, P1-B1-6	Certon, DominiqueP5-C1-1, P5-C2-1	Chitnis, Parag.....P1-B7-6
Buma, Takashi4D-6	Chaggares, N. Christopher.....P3-B1-11	Chiu, Chi Tat7A-2
Bunting, Ethan2F-5, PA-1	Chakrabarti, ChaitaliP1-B1-4	Chizhikov, Alexander6C-3
Burgess, MarkP1-B11-1	Chakraborty, Bidisha2A-4, P1-A5-2	Chizhikov, Sergey6C-3
Burns, Daniel6A-1	Chaluisan, Rodrigo1C-2, P1-B9-9	Chloé, ArthuisP1-C4-10
Burns, Peter3J-2	Chambers, AnnP1-C4-2	Chnafa, Christophe4I-4
Burrascano, PietroP2B1-6	Chan, Heather7A-1	Choe, Jung Woo7G-1
Burton, Alex1D-4	Chan, Hsiao ChangP1-B2-2	Choi, Euna7G-2
Bury, PeterP3-B1-16	Chan, Kwok Pong7A-1	Choi, Hajin5B-2
Bustamante, John5J-4	Chan, Tiffany1F-5	Choi, James J1F-5
Bustillo, JulienP5-C3-3	Chandrasekaran, Sri Nivas.....1H-5	Choi, MinP1-A7-5
Butler, James2D-4, P1-B9-6, P1-C4-9	Chang, Chao-Chuan4A-5	Choi, RinoP5-C1-4
Büttner, Lars5H-1, 5H-3, PA-9	Chang, Chienliu7D-1, 7G-1, P5-C1-5	Choi, Sang Won4D-6
Buvat, Irène1F-2	Chang, Emily H.1H-4, 3F-5, 3J-6	Choi, Won YoungP5-B2-3, P5-B2-4
Bux, JaiyanaP2B3-2	Chang, Enoch Jing-HanP1-A4-14	Chopra, Manisha3F-1
Byra, MichalP1-B10-4, P3-A3-3	Chang, Jin Ho7B-3, P5-A2-1	Chopra, Sameer1C-2
Byram, Brett 2C-3, 2C-5, 4H-6, P1-A1-6, P1-B3-2	Chang, Jing-HanP1-A4-12	Choudhury, Kingshuk.....2J-5
	Chang, Nan.....P1-A11-4, P1-B2-10, P1-C7-8	Chowdhury, Sayan M.2C-4, 3B-6
	Chang, Seong HoP1-A8-4	Christensen-Jeffries, Kirsten ..3C-3, 3H-1, 3K-1, 3K-3, P1-C3-7, P1-C8-6
	Chang, ShaP1-A3-1, P1-C11-3	Christmann, Gabriel.....7I-1
	Chang, Ting Chia7D-4	Cianciolo, Rachel.....1H-4
	Chang, Wei-Yi7G-5, 7G-6	Cinthio, MagnusP1-A9-9, P1-B7-3
	Chang, Yu-ChunP1-B7-1	Claes, LeanderP2B2-1
	Chang, Zu-Yao6J-4, 7F-1, 7F-4, PA-17	Claes, Peter2I-5
	Chao, Pei-YuP1-B5-10, P1-C6-6	Clanton, Jesse1C-2
	Chapagain, Kamal RajP2C2-4	Clark, Matt6C-2
	Chapelon, Jean-Yves.....1J-3, 2E-2, 7G-3	Clementi, ChiaraP2C2-8
	Chaplin, Vandiver6I-3	Cloutier, Guy5I-3
	Charara, JamalP1-A9-12, P1-A9-13	Clutton, EddieP5-A1-1
	Charthad, Jayant.....7D-4	Cobb, JustinP1-C9-1
	Chauhan, Vikrant5D-2, P4-B1-1, PA-13	Cochran, Sandy... 1I-2, 5E-3, 7B-4, 7D-2, 7G-4, P3-B1-2, P5-A1-1, P5-B2-7
	Chávez, Juan A.P2A4-1, P2A4-2, P2A4-3	Cohen, Joshua1J-5
	Chavez, Michael1I-1	Coila, AndresP1-B10-7
	Chayer, Boris5I-3	Colchester, Richard J.....P5-C3-2
	Chee, Adrian J. Y.....2D-1, P1-A2-3	
	Chen, Alan7H-3	
	Chen, Andrew1J-5, P1-C11-4	

C

C. Kolios, MichaelP1-C3-1, P3-A3-1	
Cabeza, Cecilia5J-4	
Cabrelli, Luciana C. P1-A10-2, P1-B7-3, P1-B8-7	
Cabrera Munoz, Nestor7A-2	
Cachard, Christian. 5K-4, 7A-5, P1-A1-3, P1-A9-8, P1-B11-5, P1-B1-2	
Caenen, Annette1A-4, P1-A4-3	
Cafarelli, Andrea1G-3	
Cai, Feiyan5E-4, 6H-3, P3-C1-8	
Cai, Xiran2H-3, 2H-6, P1-C9-1	
Caidahl, KennethP1-A4-9	
Caille, Fabien1F-2	

Collado, Carlos P4-B1-5
 Colombo, Luca 6B-2, P4-B2-1
 Conley, Nicole 4D-6
 Connolly, Edward S. 5K-6
 Connolly, Kelli 3E-4
 Connor, Ciarán P5-A1-1
 Contescu, Cristian 5C-5
 Conti, Allegra 1K-4, P1-C10-4
 Copping, Matthew 1F-5
 Corbett, Richard P1-C2-4
 Coron, Alain P1-B10-1
 Correia, Mafalda 1D-1, 3C-1, P1-C2-5, PA-4
 Cosgrove, David P1-C2-4
 Costa Júnior, José Francisco P1-C6-14
 Costa, Eduardo P1-A9-2
 Costa, Jim P4-A2-4
 Couture, Olivier 1K-1, 3C-1
 Cowell, David M.J. 1C-3, 3I-5, 6K-3, P2B3-2
 Cox, Benjamin 1I-2, 5B-6, 5G-1, 5G-3, 6E-2, P5-A1-1, PA-10, PA-8
 Cox, Michael P1-B11-3
 Croëne, Charles 6H-2
 Cross, Michael 6A-3
 Crowley, Anna Lisa 2J-2
 Crozat, Sophie P5-B1-9
 Crum, Lawrence P1-B2-8
 Cserey, György P1-A6-6
 Cucini, Riccardo 6C-1
 Cui, Hanyin P3-B1-8
 Cui, Yaoyao P3-C1-1, P5-A1-4, P5-A1-6, P5-B1-1
 Cummins, Gerard P5-A1-1, P5-B2-7
 Cunitz, Bryan W. 3A-5, 6I-5, P1-B7-9
 Curiel, Laura P5-C2-3
 Czarnota, Gregory J. P1-A7-4
 Czarke, Jürgen 5H-1, 5H-3, PA-9
 Czernusiewicz, Tomek . 2D-4, 2G-6, P1-B9-6, P1-C4-9

D

D. Verweij, Martin P5-A3-4
 D'Hooge, Jan 2I-5
 Da Silva, Geovane P5-C2-3
 Da, Xiaoyu 1I-6
 Daeichin, Varya 4J-3, P5-A3-4
 Dahl, Jeremy J. 1E-4, 2A-5, 2C-4, 2E-3, 2J-2, 3B-6, 6J-5, P1-A10-8, P1-B5-6, P1-B9-8
 Dahl, Kris 6D-2
 Dahl, Patrick 5E-3
 Dai, Fukang P5-B2-11
 Dallai, Alessandro 2D-2, 2E-1, 2J-4, 4H-1, P1-A2-4
 Dana, Nicholas P1-A7-1
 Dancy, Jimena 1F-3
 Daniels, Tim 7H-3
 Daoudi, Khalid P1-A7-7
 Datta, Meenal 1K-2
 Daunizeau, Loic P1-B5-11
 Dauson, Erin 6D-2
 Davaji, Benyamin 6B-4, P4-B3-8
 Dave, Jaydev P1-C3-9
 Dayton, Paul A. . 1H-4, 2D-4, 3G-3, 3I-1, 3I-6, 3J-6, 4G-3, 6J-2, 6J-3, 7G-6, P1-A11-1, P1-A3-1, P1-B4-3, P1-B6-3, P1-B9-6, P1-C10-5, P1-C11-3, P1-C11-9, P1-C4-12, P1-C4-3, P1-C4-5, P
 De Jong, Nico . 1E-3, 2E-5, 4A-2, 4J-3, 6J-4, 7F-1, 7F-4, P1-A4-13, P1-C3-3, P5-A3-4, PA-17, PA-5
 De Korte, Chris.... 2G-1, 3E-2, 4C-3, P1-A2-5, P1-A4-1, P1-A7-7, P1-B10-3, P1-B7-4
 De Lepper, Anouk 5I-6
 De Marchi, Luca 6G-5

De Paco, Pedro 7H-2, P4-C2-3
 De Pastina, Annalisa P4-B2-5
 De Ruijter, Joerik P1-A4-10, P1-A4-2
 De Santis, Michele P2A1-1
 De With, Peter P1-A6-4
 Deffieux, Thomas . 1D-1, 1E-1, 1E-5, 4I-6, 7B-2, P1-C2-6, PA-4
 Degel, Christian 6K-6
 Degentesch, Drew P1-B9-9
 Degertekin, F. Levent 7A-4, 7F-6, P5-A1-7, P5-B2-5
 Dei, Kazuyuki 2C-5
 Del Galdo, Giovanni 6G-1
 Delacerda, Jorge P3-A1-2
 Delgado, Sagid P5-C2-3
 Delgaldo, Giovanni P2B1-5
 Demene, Charlie 4I-6
 Demirci, Hakan 3B-4
 Démoré, Christine 3I-1, 4F-1, 5E-3, 7B-5, 7D-2, P5-A1-5
 Dempsey, Robert 3G-1, P1-A4-5, P1-A4-6
 Den Brok, Martijn P1-A7-7
 Dencks, Stefanie 3C-4
 Deng, Lulu 1G-5
 Deng, Mingxi P2B2-2, P2C1-6
 Deng, Shuang P3-C1-7
 Deng, Yuanchen 6H-4
 Deng, Yufeng 2J-6, P1-B5-6, P1-C5-4, P3-A3-5
 Deng, Zongquan 6K-5, P5-A3-1
 Denis, Max 3E-1
 Depke, Dominic 4D-1
 Desjardins, Adrien E. P1-B8-2, P5-C3-2
 Desmulliez, Marc P5-A1-1, P5-B2-7
 Dessailly, Yann 1K-1
 Destefano, Secili 3F-6
 Destrade, Michel 5J-5
 Detwiler, Randal 3F-5
 Deveci, Erdem 6I-4
 Dextraze, Katherine 4E-4
 Dhawan, Ananya P1-B7-6, P1-C8-4
 D'Hooge, Jan . 2A-4, 2B-4, 2F-2, 2F-4, 2J-3, 2J-4, 4H-3, P1-A5-2, P1-B1-5, P1-C1-10, P1-C1-5, P1-C1-7, P1-C1-9, P1-C8-5, PA-6
 Di Ianni, Tommaso 2D-3, P1-A2-6, P1-C1-3
 Dianis, Scott P1-A5-1
 Dickie, Kristopher P1-C3-9
 Diederichsen, Søren E. P5-C1-2
 Diez, Luis P5-C3-10, P5-C3-11
 Ding, Qing 7F-4
 Ding, Ting P1-B11-4
 Dixon, Adam J. 4G-2, 7A-6
 Dixon, Steve 5H-2, 5H-4, 6K-1
 Dizeux, Alexandre 1E-1, 3G-4
 Do, James 7C-3
 Do, Minh 4C-4
 Dobruch-Sobczak, Katarzyna P1-B10-4
 Dobrucki, Lawrence 4K-3
 Domingue, Frédéric P4-C2-4
 Dong, Changfeng P1-C6-3
 Dong, Jinping P1-C5-7
 Donnelly, Eleanor 1D-3, 4B-2
 Doury, Maxime 3G-4
 Downs, Matthew 1D-2
 Doyley, Marvin M. 2G-3, 2G-5, 3E-4, P1-A4-4, P1-B5-5
 Dragomir Daescu, Dan 5J-6
 Drehfal, Lindsey C. 2H-2, 2K-4, 4C-5, P1-C6-9
 Drenth, Joost 4C-3
 Du, Juan 2H-5, P1-C4-4
 Du, Xuan P3-C1-4
 Duan, Xuexin P3-C1-3
 Dubois, Marc-Alexandre 7I-1
 Dubus, Bertrand 6H-2
 Duddu, Ravindra P1-A1-6

Duff, Karen P1-C11-8
 Duflie, Pierre P3-B1-14
 Dumani, Diego 4F-4, PA-3
 Dumesnil, Karine 7J-1
 Dumont, Erik 6I-3
 Dumont, Fabien 6B-1
 Dumoux, Marie-Coline 7B-2
 Duncan, Neill P1-C2-4
 Duncan, Ryan A. 6C-1
 Dunmire, Barbrina 3A-5, P1-B2-8, P1-B7-9
 Dunsby, Christopher 3C-3, 3H-1, 3H-3, 3K-1, 3K-3, P1-C8-6
 Dupre, Aurelien 1C-6
 Duric, Neb P1-B8-5
 Durot, Isabelle 3J-1, 3J-4, P1-B10-2
 Dwight, Bellinger 3F-5
 Dziedziech, Kajetan P2A3-8

E

E. Desjardins, Adrien P2A2-5
 Ebata, Masahiko P1-A3-6
 Ebbini, Emad 2D-6
 Ebner, Thomas P4-B1-1, PA-13
 Echavarria Bayter, Tomas 3E-3, P1-C5-5
 Eck, Laurent 7K-5
 Eckersley, Robert J. 3C-3, 3H-1, 3H-3, 3H-4, 3K-1, 3K-3, P1-C2-1, P1-C3-5, P1-C3-7, P1-C8-6
 Edwardsen, Thor 2J-3
 Egan, Thomas 3G-2
 Egolf, David P1-C1-8
 Ehman, Richard 3D-6
 Eisenbrey, John.. 3J-5, 4G-1, 4G-6, P1-C10-7, P1-C4-11, P1-C4-8
 Ekroll, Ingvild Kinn P1-B3-5, P1-B3-7
 El Boudouti, El Houssaine P4-C1-3
 El Kaffas, Ahmed 3G-5, 3J-1, 3J-4, P1-B10-2, P1-B6-2
 Eldar, Yonina C. 3H-2, 3K-2, 4J-5
 Elfarnawany, Mai P1-A7-4
 Elias, Jeff 1B-3
 Ellens, Nicholas P1-B11-7
 Ellestad, Sarah 2J-5
 Elmazria, Omar.. 6B-5, 7C-1, 7J-1, 7J-4, P4-C1-3, PA-15
 Elmin Diederichsen, Søren 7F-5, P5-C1-7
 Emelianov, Stanislav 1D-3, 2K-1, 3H-6, 4B-2, 4F-4, 4G-4, P1-A7-1, P1-B4-5, P1-C7-6, PA-2, PA-3
 Emmett, Regina 3F-1
 Emoto, Akira 5E-1, PA-12
 Engel, Aaron 1A-5
 Engholm, Mathias... 4J-2, P1-B1-1, P5-B2-10, P5-C1-2, P5-C1-7
 Engvall, Jan 2J-3
 Entcheva, Emilia 1J-5, P1-C11-4
 Erbacher, Grischan 5B-3
 Erdman, John P1-C9-5, P1-C9-9
 Ergun, Arif Sanli 6I-4, P5-C2-4
 Eriksen, Marius 4A-1
 Ermer, Helmut P1-B7-2
 Errico, Claudia 1K-1
 Ersepke, Thomas 5K-3, P1-C6-17
 Escoffre, Jean-Michel.. 1H-6, P1-A9-8, P1-B11-9, P1-C11-9, P1-C9-7
 Espindola, David 2K-5, 3I-6, P1-C6-13
 Espinoza, Andreas W. 2B-4
 Espinoza, Florian P1-C8-2
 Esposito, Cara P1-C3-9
 Evdokimova, Iuliia P4-C2-3
 Everbach, Erich 4C-6
 Evers, Stefanie P1-A5-3
 Evertsson, Maria P1-A9-9, P1-B7-3

F.W. Van Der Steen, Antonius.....	4A-2, 6J-4
Fabian, T.....	7C-2
Fadnes, Solveig	4I-1
Faley, Shannon	P1-B3-2
Fall, Elhadji Mansour.....	P4-C2-4
Fan, Ching-Hsiang	P1-C11-5
Fan, Liexiang	P1-A10-5
Fan, Zongwei	P3-C1-7
Fang, Haoyu	P5-A3-2
Faraci, Alessandro	P1-C3-7
Farahani, Keyvan.....	1B-4, 1B-4
Farber, Mark A.	2G-6
Fatemi, Ali	P1-A6-8
Fatemi, Mostafa... 1E-2, 3E-1, P1-C1-11, P1-C5-6	
Faurie, Julia	4H-2
Fedder, Gary K.	P4-C2-7
Fedjajevs, Andrejs	2E-5
Fedorko, Julie	4B-4
Feeney, Andrew.....	5H-2
Fehler, Michael.....	6A-1
Feierabend, Lukas	5H-3
Feigin, Micha	P1-A5-6
Fekkes, Stein	2G-1, P1-A2-5, P1-A4-1
Feld, David	5D-1, 5D-3
Felmsnetsger, Valeriy.....	P5-C3-8
Feltovich, Helen	2H-2, 2K-4, 4C-5, P1-C6-9
Feng, Xuan	6A-1
Feng, Yi	6C-6, P1-B2-10, P1-B2-3
Fenkel, Jonathan	4G-6
Fenzi, Neal	5D-6, 5F-4, P4-A2-4
Férin, Guillaume	3D-4, 7B-2, P1-C2-6
Ferlauto, Harrison.....	1A-1, P1-A5-5
Ferrara, Katherine W. 1G-2, 1I-1, 1I-6, 3C-2, 7A-	

Ferreira, Irmine.....	5J-2
Feurer, Thomas.....	6C-1
Finel, Victor.....	1D-1, 2F-3, 3G-6, PA-4
Fink, Mathias.....	1E-5
Fink, Michael.....	P1-B7-2
Fioravanti, Gabriella.....	P1-A3-5, P1-B4-6
Fiorentini, Stefano.....	4A-3
Fiorillo, Timothy.....	7A-1
Firouzi, Kamyar.....	6E-4, P1-C11-1, P5-C1-5
Fisher, Benjamin.....	6K-3
Fisher, George.....	3J-1, 3J-4
Fisher, Melrose.....	3F-5
Fite, Brett Z.	1G-2, 1I-1
Fitzgerald, Kathleen.....	P1-A3-8
Fiveland, Eric.....	7A-1
Fix, Samantha M.	4G-3, P1-A11-1, P1-A3-1, P1-C10-5, P1-C11-3, P1-C11-9
Fixsen, Louis.....	5I-6
Flament, Julien.....	1G-3
Flesch, Martin.....	7B-2, P1-C2-6
Floer, Cécile.....	7J-1, 7J-4, PA-15
Flørenæs, Even.....	2B-1
Foglia, Laura.....	6C-1
Foiret, Josquin.....	1G-2, 3C-2
Follet, Hélène.....	2H-3
Fontanarosa, Davide.....	P1-A6-4
Foo, Thomas.....	7A-1
Forbrich, Alex.....	3I-1
Forsberg, Flemming ...	3J-5, 4G-1, 4G-6, P1-A3-8, P1-C10-7, P1-C3-7, P1-C3-9, P1-C4-11, P1-C4-8
Fortunato, Guglielmo.....	P5-B2-1
Foster, F. Stuart.....	3I-1, 4F-1, 6J-2, 7B-5, P5-A1-5

Fouan, Damien	P1-B11-9
Fowlkes, J. Brian.....	P1-B1-4
Fox, Richard.....	P1-B7-5
Franceschini, Emilie	5K-4, P1-A10-4, P1-A9-8, P1-C9-7
Francis, Sheeja	4E-3
Franz, Jason.....	P1-C6-11
Frazer, Travis	6C-1
Freear, Steven.1C-3, 3I-5, 4D-2 , 6K-3 , P1-A1-7, P2B3-2	
Frenkel, Victor	1F-3
Frenz, Martin.....	4D-5 , 4F-2, P1-C7-2
Frey, Hans-Martin.....	6C-1
Friboulet, Denis... 4A-4, 4K-6, P1-A9-4, P1-A9-5, P1-B1-3, P1-B1-6	
Friedman, Zvi.....	P1-C1-10
Friend, James	6D-3, PA-7
Frijlink, Martijn.....	P2C1-5, P5-A3-5
Frinking, Peter.....	P1-C4-6
Fritze, Holger	P4-A2-2
Fujii, Satoshi	P4-C2-1
Fujii, Shiori	P1-C6-4
Fujimoto, Nozomu	7K-2
Fujiwara, Hitoshi	P4-C2-6
Fujiwara, Keisuke	P1-C11-6
Fukumura, Dai	1K-2
Futterter, Jurgen	P1-A7-7
Füzesi, Krisztián.....	P1-A6-6

G. Bosch, Johan	1E-3, PA-5
Gach, H. Michael	P1-B2-9
Gachagan, Anthony.....	P1-A8-6, P5-A3-2
Gaiffe, Olivier	6H-1
Galan-Acosta, Lorena	1F-1
Gallagher, Mark	7H-3
Gallego, Nidia	5C-5
Gallippi, Caterina	2G-6, 3E-6, 3F-1, 3F-3, 3F-5, P1-B9-6, P1-C5-2, P1-C6-11
Gamble, Kevin	7H-3
Gammell, Paul.....	P1-B7-6
Gao, Anming	7J-5
Gao, Hang	4H-3, 6C-5
Gao, Jing	P1-B11-2, P1-C6-10
Gao, Jun.....	7D-2 , P5-B2-7
Gao, Liang	3D-2, P1-B5-1
Gao, Xuehua.....	2K-3
Garbo, Allison-Joy	1C-5, P1-B11-3
Garcia, Damien	4A-4, 4H-2, 4I-4, 4J-1, 5I-3
García, David	P4-B1-5
García-Hernández, Miguel J.	P2A4-1, P2A4-2, P2A4-3
Garra, Brian.....	1B-2
Gasse, Maxime	4K-6
Gauthier, Rémy	2H-3
Gavrity, Jayne	1I-6
Gawasaw, Masahiro	P4-B1-2
Gay, Etienne.....	4I-4
Gazit, Dan	1I-6
Gazit, Zulma	1I-6
Geffroy, Françoise	1F-6 , P1-C10-4
Gennisson, Jean-Luc	1E-5, 3F-2
Genovés Gómez, Vicente	5C-2, P2C1-1
George, Mark	P1-A1-6, P1-B3-2
George, Swetha	P1-A1-9
Gerber, Naomi	3F-6
Gerber, Scott	3E-4
Gerhardson, Tyler	3A-1, 3A-3
Gerstenmayer, Matthieu.....	1F-2 , 1F-6 , P1-C10-4
Geryes, Maroun	P1-A9-13
Gesnik, Marc	1E-1, 1E-5
Gessner, Ryan	2D-4, P1-B9-6, P1-C4-9
Ghaleh, Bijan	P1-C2-5

Ultrasonics, Ferroelectrics, and Frequency Control Society

Guggenheim, James 6E-2, PA-8
 Gui, Zhiguo P1-B11-4
 Guidi, Francesco 2E-1, 2J-4
 Guillen, Nicolas 7G-3
 Guilleus, Quentin 7K-5
 Gulati, Sahil P1-A3-5
 Guo, Jinghui P1-B2-2
 Guo, L Jay 3B-4
 Guo, Shifeng P2C1-2
 Guo, Xinhua 6F-5, P2A1-2
 Guo, Yanrong 2K-3, P1-C6-3
 Guo, Yuexin 5I-2, P1-A4-12, P1-A4-14, P1-C5-7
 Guo, Yutong 1K-2
 Gupta, Ipshta 4G-6
 Gyöngy, Miklós P1-A6-6

H

Ha, J.D. P4-A2-4
 Haakenstad, Katharina P2C1-5
 Habib, Anowarul P5-B1-8
 Hachiya, Hiroyuki P2A1-3
 Hackenbeck, Janos 2H-5
 Hadadian, Yaser P1-B4-9
 Hadley, Judy P1-B4-6
 Hafez, Moustapha 7K-5
 Hage-Ali, Sami 7C-1, 7J-1, 7J-4, PA-15
 Hagelauer, Amelie P4-A2-5, P4-B1-1, PA-13
 Hager, Pascal Alexander 6K-6
 Haghi, Hossein P3-A3-1
 Hall, Timothy J. 2H-2, 2K-4, 3A-1, 3A-3, 3A-6, 3B-2, 4C-5, P1-A10-5, P1-C6-9
 Hall, Timothy L. P1-A11-3
 Hallam, Kristina 1D-3, 3H-6
 Hamelmann, Paul P1-B9-1
 Hammond, Bob 5D-6, 5F-4, P4-A2-4
 Han, Aiguo P1-C9-5, P1-C9-9
 Han, Dan P1-A11-5, P1-A11-6
 Han, Tao 5F-3, P1-B2-12, P4-B3-5, P4-C2-5, PA-14
 Han, Yang 1D-2, 2H-4, 3E-5
 Han, Yuqiang P1-A6-7
 Han, Zhaoalong P1-C6-12
 Han, Zhile P5-A1-4, P5-A1-6, P5-B1-1
 Hannah, Alex 3J-2, P1-A3-7
 Hansen, Hendrik H.G. 2G-1, 3E-2, P1-A4-1
 Hansen, Hhg 4J-4, 4J-6
 Hansen, Jesper Mark Fly P5-C1-7
 Hansen, Kristoffer Lindskov 4I-5, P1-B3-8
 Hansen, Rik P1-A2-5
 Hansen, Rune P1-C3-6
 Hantraye, Philippe 1G-3
 Hao, Congcong P5-C1-8
 Harald Holger Jørgensen, Ivan 7F-5
 Harlacher, Max 2D-4, P1-B9-6, P1-C4-9
 Harley, Joel B. 5A-4, 6G-4
 Harper, Jonathan D. 3A-5
 Harput, Sevan 3C-3, 3H-1, 3H-3, 3I-5, 3K-1, 3K-3, 4D-2, P1-A1-7, P1-C3-4, P1-C8-6
 Harriss, Bethany 4F-5
 Hartman, Robin 1D-3
 Harutyunyan, Karine P3-A1-2
 Harvey, Gerald P5-C1-2
 Hasan, Tayyaba P1-B7-7
 Hasegawa, Hideyuki 2A-2, 2B-3
 Hasegawa, Hiroaki 7E-2, 7E-4, 7E-5
 Hasener, Jörg P2B2-3
 Hashimoto, Ken-Ya... 5D-5, 5F-3, 7H-4, P4-A1-2, P4-A2-3, P4-B1-2, PA-14
 Hassan, Sonia 4E-6
 Haugen, Bjørn Olav P1-C8-1, P1-C8-3
 Haugen, Geir P1-C7-4
 Haupt, Rob P1-B8-3
 Havrelund, Andreas P5-B2-10

Haworth, Kevin P1-C11-2
 Hayashi, Hideki P1-A3-6
 Hayashi, Hiromichi P1-C9-11, P3-A1-3
 Hayashi, Junki P4-C1-1
 Haystead, Clare 2J-6
 He, B.X. P1-B11-8
 He, Changde P5-C1-8
 He, Jianpeng P2A2-4
 He, Qiong 2G-2, 4H-3, 5J-5, P1-A4-11, P1-B11-2, P1-B5-8
 He, Shitang P4-B3-7
 He, Zhenzhi P2A3-3
 Hedhli, Jamila 4K-3
 Hehn, Michel 6B-5, 7J-1
 Heifetz, Alexander P2B1-3
 Heiles, Baptiste 3C-1
 Heinz, Bernd 7I-1, P4-B2-3
 Helfield, Brandon 1H-3, P1-C10-6
 Hella, Curtis 7H-3
 Hernandez-Andrade, Edgar 4E-6
 Hendriks, Gagg 4J-4, 4J-6
 Hendriks, Gijs A.G.M. 2G-1, 3E-2
 Henning, Bernd P2B2-1
 Henry, Michael P4-B2-3
 Heo, Jeongmin P2A2-5, P5-C3-2
 Herbst, Elizabeth B. 3I-2
 Herculano, Rondinelli P1-A10-2
 Heres, Maarten 4B-3
 Herickhoff, Carl D. 2E-3, 3B-6, 6J-5, P1-B9-8
 Hermann, Bruce P1-A4-5, P1-A4-6
 Hermann, Sven 4D-1
 Hernandez Gil, Javier 3K-5
 Hernandez, Christopher . 4B-6, P1-A3-5, P1-B4-2, P1-B4-6, P1-C10-9, P1-C11-7, P1-C3-1
 Hernández-Gil, Javier 4F-5, P1-C4-7
 Herr, Hugh P1-A5-6
 Hersh, David 1F-3
 Heur, Martin 2K-2
 Heyde, Brecht 1A-1, P1-A5-2, P1-A5-5
 Higgins, Peter 4B-1
 Higuchi, Yusuke P2C2-5
 Hill, Paul 5K-1
 Hine, Gabriel Emile 2D-2
 Hingot, Vincent 1K-1
 Hinshaw, James Louis P1-B5-7, P1-C6-1, P1-C6-7
 Hintermüller, Marcus A. 6D-5
 Hiramoto, Masahiro 5F-2
 Hirano, Koki P5-A2-3
 Hirata, Shinnosuke P2A1-3
 Hirose, Tsuyoshi P4-C2-6
 Hiroshima, Misaki P1-C1-6
 Hisatsu, Masanori P1-C1-6
 Hladky, Anne-Christine 6H-2
 Hladky-Hennion, Anne-Christine P5-A3-3
 Ho, Chung Kit P1-A2-3
 Ho, Yi-Ju P1-B2-5
 Hobelman, Koen P1-A4-2
 Hodzic, Amir 5I-3
 Hoel Rindal, Ole Marius 2A-3, 2C-6
 Hoff, Lars 2B-4, 7D-3, P1-C7-4, P5-A3-5
 Hofmann, Klaus 6K-1
 Hofstetter, Christoph 3J-2
 Holbek, Simon 4A-6
 Holland, Christy P1-C11-2
 Hollender, Peter 1A-2, 1A-3, 3D-1, P1-A4-16, P1-B5-9
 Holm, James P1-B7-9
 Holm, Sverre 1H-5, 2A-3
 Holte, Espen 4A-3
 Homeister, Jonathon W. 2G-6
 Honda, Tamaki P1-A10-7
 Hong, Bomi P1-C10-3
 Hong, Jiehan P1-B9-7, P5-B1-6
 Hoogenboom, Martijn P1-A7-7

Hoogi, Assaf 3G-5
 Hope, Timothy 4A-2
 Horii, Kaoru 2H-1
 Horsley, David A. 7C-3, P5-C1-3
 Hosoya, Akira P2C1-4
 Hossack, John A. 2I-3, 3I-2, 4G-2, 4K-2
 Hossain, Md Murad 3E-6, 3F-3, 3F-5, P1-C5-2
 Houhat, Nesrine P1-A9-12
 Houng, Jieh-Yuan P1-B9-3
 Houthuizen, Patrick 5I-6
 Howard Jr., James 3F-1
 Hoyt, Kenneth 4C-1, P1-B6-4, P1-C10-8, P1-C4-1
 Hristov, Dimitre 3G-5, 3J-1, 3J-4, P1-B6-2
 Hsi, Ryan P1-A1-6
 Hsieh, Scott P1-A10-8
 Hsu, Chih-Hsun P3-C1-6
 Hsu, Hao 1A-5
 Hsu, Jin-Chen P3-C1-6
 Hsu, Shih-Shih P1-C6-6
 Hsueh, Yuan-Yu P1-B10-6
 Hu, Chenwenbao 1E-6
 Hu, Song 2I-3
 Hu, Xiaogang P1-C6-11
 Hu, Y.Y. P1-B11-8
 Huang, Andy 4C-2
 Huang, Ann 6D-3, PA-7
 Huang, Chengwu 5J-3
 Huang, Chih-Chung... 4A-5, P1-A4-15, P1-B10-6, P1-C2-2, P5-A2-5
 Huang, Chih-Hsien 6C-5
 Huang, Dean Y 3H-3
 Huang, Hsin P1-C2-2
 Huang, Liajie P1-C1-1
 Huang, Pintong P1-B10-5
 Huang, Runqing 3K-4
 Huang, Shengsong P1-A7-8
 Huang, Sheng-Wen.. 4K-1, P1-A2-7, P1-A5-1, P1-A8-1
 Huang, Xiaowei 1J-4, 2D-5
 Huang, Yao-Shen P1-C11-5
 Huang, Yuexi 1K-5
 Huang, Yulin 5F-3, 7H-4, P4-A1-2, PA-14
 Huang, Zhihong 1I-2, 7G-4
 Hueltes, Alberto P4-B1-5
 Huissoud, Cyril 1C-1
 Humayun, Mark 2K-2, P1-C11-10
 Hunt, Stephen 4G-6
 Hunter, Alan J. 2B-2
 Hunter, Christopher P1-B2-8
 Hunter, Timothy P2B3-2
 Hurley, Paul P1-A9-6
 Huynh, Thong P1-C7-4
 Hverven, Stine M. 2B-2, P1-B1-7
 Hwang, Jae Youn 5K-2, P1-A8-8
 Hwang, Kyo Seon P5-C1-4
 Hyler, Stefan 2B-4
 Hynynen, Kullervo 1G-1, 1G-5, 1K-5, 3H-5, 4F-1
 Hyoun Won, Baac P3-A1-1
 Hysi, Eno 4B-6, 4E-1, P1-A7-4, P1-B8-8
 Hyun, Dongwoon.... 1E-4, 2C-4, 2J-2, 2J-5, 3B-6, 6J-5, P1-A10-8, P1-B5-6

I

Ialy-Radio, Nathalie 1D-6
 Ichikawa, Megumi P1-B7-7
 Ichianagi, Mitsuhsa P3-C1-2
 Ignjatovic, Zeljko P1-A1-9
 Ihlow, Alexander 6G-1, P2B1-5
 Ihrig, Andreas 4D-1, P1-A1-8
 Ikeda, Teichiro P1-C1-6
 Ikoma, Ryota P2C2-7
 Ikuta, Futoshi P1-A6-3
 Iliev, Filip 5D-6, 5F-4

Ilovitsh, Tali	3C-2
Imenes, Kristin	7D-3
Ingham, Elizabeth S.	1I-1
Ingle, Atul	P1-C6-2
Ingram, Pier	1D-4, 2E-4, P1-B7-8
Insana, Michael	4K-3
Iori, Gianluca	2H-5, P1-C4-4, P1-C9-4
Irie, Takasuke	5H-5, P1-A8-3
Iseki, Yuya	P1-A6-3
Ishibashi, Haruka	P2A3-4
Ishida, Chizu	7I-5
Ishihara, Chizue	P1-C1-6
Ishii, Takuro	4I-2
Ishijima, Ayumu	P1-C10-2
Iskander-Rizk, Sophinese	4B-5
Isla, Julio	P2A1-5
Isono, Akane	1H-1
Itani, Kamal	P1-A11-7
Itani, Kazunori	P1-C11-6
Ito, Kazuyo	P1-A10-7, P1-C9-3
Ito, Youichi	P2C1-7, P3-B1-7
Iula, Antonio	P2A1-1
Ivanytsky, Oleg	P3-B1-11
Ives, Kimberly	3A-3
Iwamoto, Hideki	5F-2
Iwasaki, Ryosuke	3B-5
Iwata, Arihiro	P4-B3-6

J

J. Vos, Hendrik	P5-A3-4
J. Alles, Erwin	P2A2-5
J. Colchester, Richard	P2A2-5
Jablonowski, Lauren	P1-A3-8, P1-C10-7, P1-C4-8
Jackson, Daren	P1-A4-5, P1-A4-6
Jaeger, Axel	5H-2
Jaeger, Michael	4D-5, P1-C7-2
Jafarisjahrood, Amin	P1-C3-1, P3-A3-1
Jäger, Axel	5H-4, 6K-1, P2B2-1
Jain, Rakesh	1K-2
Jakobsen, Mogens	P4-B3-2
Jakoby, Bernhard	6D-5
Jakovljevic, Marko	1E-4, 2C-4, P1-A10-8
Jang, Ji Hoon	7D-1, 7G-1
Jang, Jiyoung	P1-C10-3
Janjic, Jovana	6J-4
Janssen, Karmon M.	3A-5
Jansson, Tomas	P1-A9-9, P1-B7-3
Jarosik, Piotr	P1-B9-5
Jeffrey, R. Brooke	7D-1, P1-B9-8
Jeffries, Kirsten	3H-3
Jeganathan, Selva	P1-C10-9, P1-C11-7
Jenderka, Klaus-Vitold	5G-5
Jensen, Jonas	4I-5, P1-B3-8
Jensen, Jørgen Arendt	2D-3, 4I-5, 4J-2, P1-A2-6, P1-B3-8, P1-C1-3, P5-B2-10, P5-C1-2
Jeon, Seungwan	P1-B8-1
Jeong, Mok Kun	P1-A8-4
Jeremic, Aleksandar	1I-5, 1J-5
Jesorka, Aldo	P4-B3-4
Jeunemaitre, Xavier	5J-2
Ji, Chenglong	P2A3-6, P2B2-4
Ji, Robin	P1-A11-2
Ji, Xiaojun	P4-B3-5, P4-C2-5
Jia, Caixia	P1-B2-12
Jia, Kun	P3-C1-7
Jia, Yana	P4-B3-7
Jia, Yang	P3-B1-8
Jian, Xiaohua	P5-B1-1
Jiang, Enzi	P3-C1-5
Jiang, Jingfeng	P1-B5-7
Jiang, Qiuju	1E-6, 1F-4, P1-C11-10
Jiang, Senlin	P5-B2-11
Jiang, Xiaoning	6J-3, 7G-5, 7G-6

Jiang, Yiyue	P2B1-1
Jiao, Yang	P5-A1-4
Jie, Xu	P3-C1-9
Jimenez, Gabriel	P1-B10-7
Jiménez, Noé	P3-A3-4
Jin, Haoran	P3-C1-7
Jin, Jie	6K-2
Jin, Qiaofeng	1K-3, P1-B4-8
Jing, Bowen	P3-C1-4
Jing, Yun	6H-4, P3-B1-12
Jintamethasawat, Rungroj	5K-5, P1-B1-4
Jo, Janggun	4E-2, 4E-3
Johannesmann, Sarah	P2B2-1
Johansen, Kristoffer	5G-4, 5G-6
Johansson, Janne	1F-1
Johansson, Örjan	5A-3
Johnson, Christie	1C-2
Johnson, Kennita	1H-4, P1-B9-6
Johnson, Laura	4B-1
Johnston, Patrick	6F-4
Jondahl, Morten Hansen	P2C2-2
Jones, Ryan	1G-5, 3H-5
Joos, Philippe	4J-1
Joseph, Giji	4B-2
Joshi, Aditya	3G-3
Joshi, Shivani	P1-B9-1
Juarez, Peter	6F-4, P2B2-7
Jung, Gwangrok	7F-6
Junker, Warren	5A-4

K

K. Andersen, Kenneth	7D-3
K.-V. Standal, Øyvind	P2C1-5
Kabe, Yoshiro	P4-A2-1
Kadam, Shilpa	4B-4
Kaddoura, Tarek	P1-B7-5, P1-C1-8
Kadirvel, Ramanathan	3K-4, P1-B3-6
Kadota, Michio	5F-5
Kaffes, Caterina	P3-A1-2
Kakio, Shoji	P4-C1-1, P4-C2-8
Kakkad, Vaibhav	1A-1, 1A-2, 1A-3, P1-A4-16, P1-A5-5
Kala, Shashwati	P1-B2-2
Kalashnikov, Alexander	P2C1-3
Kallmes, David F.	3K-4, P1-B3-6
Kalra, Sanjay	2K-6, P1-C6-15
Kamimura, Hermes	1G-3
Kanbar, Emma	P1-A9-12, P1-C3-3
Kanda, Takefumi	7K-2, 7K-4
Kang, Eunchul	7F-4
Kang, Haochen	7A-2
Kang, Jeeun	4B-4, 4E-5, P1-B9-10
Kang, Jin U.	P1-B9-10
Kang, Jinbum	P1-A6-5, P1-C7-3, P5-A2-4
Kang, Lei	5H-2, 5H-4
Karabalin, Rassul	6A-3
Karakatsani, Maria Eleni	1G-4, P1-C11-8
Karasawa, Rei	6D-4, 7C-4, 7I-2, PA-11
Karbalaiesadegh, Yasamin	P1-C9-4
Karmakar, Subhajit	P1-B8-8
Karpiouk, Andrei	1D-3, 4B-2, P1-A7-1
Karshafian, Raffi	P1-B4-4
Karve, Pranav	P1-A1-6
Kasa, Matthew	P2B1-4
Kasoff, Willard	1D-4
Kasoji, Sandeep K.	1H-4, 3J-6, P1-C11-3
Kasoji, Sunny	6J-3
Katai, Takuya	P1-C7-7
Kato, Kazuo	P1-A6-3
Kawabe, Masahiko	P1-C9-11
Kawaguchi, Kei	P3-C1-2
Kawakami, Akihiko	6F-1
Kawano, Masakazu	7E-4

Kawase, Mami	P1-C9-11, P3-A1-3
Kawchuk, Greg	P1-B7-5
Ke, Karen Lin	P2C1-2
Ke, Manzhu	6H-3
Keijzer, L.	P1-A4-13
Keller, Asaf	1F-3
Keller, Sara	P1-A3-7
Kelly, James	6A-5
Kemper, Paul	5K-6
Kenig, Eyal	6A-3
Kenjeres, Sasa	4A-2
Kersemans, Mathias	P1-A4-3
Keshmiri Efsandabadi, Yasamin	6G-5
Ketterling, Jeffrey A.	P1-A2-8
Khaing, Zin	3J-2
Khairalseed, Mawia	4C-1
Khakhomov, Sergei	P4-A1-5
Khamis, Hanan	2I-5
Khan, Amir	P1-C8-4
Kheirrolomoom, Azadeh	1I-1
Khelif, Abdelkrim	6H-1
Khokhlova, Tatiana	P1-B2-8
Khokhlova, Vera	6I-5, P1-B2-8
Khuri-Yakub, Butrus T.	6E-4, 7D-1, 7E-1, 7G-1, 7J-3, P1-C11-1, P5-C1-5
Kieda, Jennifer	P1-B4-4
Kielczynski, Piotr	P3-B1-6, P3-B1-9
Kiessling, Fabian	3C-4
Kijanka, Piotr	P1-B5-1
Kilappa, Vantte	2H-5
Kilinc, Mehmet Sait	6I-4, P5-C2-4
Killin, Jakob K.	1C-5
Kim, Anthony	1F-3
Kim, Bae-Hyung	P1-C1-11
Kim, Baek Sop	P1-A8-4
Kim, Chulhong	P1-B8-1
Kim, Chulwoo	P1-C10-3
Kim, Eunjo	5K-2
Kim, Hye Na	P3-C1-5
Kim, Hyung Ham	P1-B8-1
Kim, Jae Gwan	P1-A8-8
Kim, Jihun	5K-2, P1-A8-8
Kim, Jihyang	P2C2-3
Kim, Jin Young	P1-B8-1
Kim, Jinsik	P5-C1-4
Kim, Jinwook	6J-3, 7G-5, 7G-6
Kim, Jonghoon	5K-1
Kim, Jung Yeon	P5-C1-4
Kim, Jungsoon	P2C2-3
Kim, Jun-Young	5K-2
Kim, Kang	3C-6
Kim, Minwoo	4K-3
Kim, Moojoon	P2C2-3
Kim, Sungchan	P1-A6-5
Kim, Yong-Mi	P3-C1-5
Kim, Younsu	P1-B11-7
Kimura, Kai	P3-B1-13
Kimura, Tomonori	P2C1-4
Kingsley, Charles	4E-4, P1-A7-3
Kinnick, Randall	3D-3
Kinoshita, Yumiko	P1-C9-8
Kirby, Mitchell	3D-2, P1-B5-1
Kirchhof, Jan	6G-1, P2B1-5
Kishida, Kazuhito	P4-C1-1
Kisslo, Joseph	1A-1, 1A-2, P1-A5-5, P1-C6-16
Kitahara, Daitaro	P2C2-6
Kiyota, Yuto	5A-5
Kjeldsen, Thomas K.	2D-3
Klauber-Demore, Nancy	P1-C4-3
Klibanov, Alexander L.	3I-2, 4G-2
Klimas, Aleksandra	1J-5, P1-C11-4
Klimonda, Ziemowit	P3-B1-5
Kline-Schoder, Alina	P1-C10-1
Kloepper, Jonas	1K-2

Knight, Anna	P1-B5-9	Kustanovich, Kiryl	P4-B3-4	Lefevre, Melissa	P1-C6-16
Knobloch, Joshua	6C-1	Kuyppers, Jan	7H-3, P4-A2-5	Lei, Hao	4B-1
Knopp, Gregor	6C-1	Kuznetsova, Iren	P3-A5-1	Lejeune, Agnes	7B-2
Kobayashi, Etsuko	P1-C10-2	Kuznetsova, Tatiana	2I-5	Lema, Patricia	3F-2
Kobayashi, Fumiya	P4-C2-8	Kvam, Johannes	2B-1, P1-C3-6	Lenge, Matteo	P1-A2-1
Kobayashi, Makiko	5A-2, 5A-5, P5-C3-7	Kwak, Yun Sang	P5-B2-3, P5-B2-4	Leong, Hon	P1-C4-2
Kobayashi, Saya	P2A2-3	Kwiecinski, Wojciech	3B-1	Leow, Chee Hau 3K-5, 4G-5, P1-C2-1, P1-C2-4, P1-C3-4, P1-C4-7	
Kobayashi, Takumi	P5-A2-3	Kwon, Sung Jae	P1-A8-4	Leroy, Edouard	7K-5
Kocaturk, Ozgur	P5-A1-7	Kyoya, Haruki	P4-B1-2	Lethiecq, Marc	P5-C3-3
Kochhar, Abhay	6B-2, P4-B2-1, P4-C1-4			Leung, Kogee	1G-5
Kocot, Anthony	1C-1, 1C-6			Leus, Geert	2E-5, 6G-2
Koehler, Bernd	6A-2			Levassort, Franck	P5-A3-3, P5-C3-3, P5-C3-4
Koehler, Raymond	4E-5			Lewandowski, Marcin	P1-B9-5, P5-A2-6
Koek, Wouter	5B-5			Ley, Eric	1I-6
Koike, Mitsuhiro	P2C1-4			Li, Chao	P3-B1-8
Kokkonen, Kimmo	P4-A2-5			Li, Dan	P5-A1-6
Kolen, Alexander F.	P1-B9-1			Li, David	3D-2, 4F-2, 4F-3, 5E-2, P1-B5-1
Kolios, Michael C.	4B-6, 4D-4, 4E-1, 4F-6, P1-A7-4, P1-B4-4, P1-B8-6, P1-B8-8, P1-C10-9			Li, Fei 5E-4, 6H-3, 6I-1, P3-C1-8	
Komini, Vangjush ...	2A-4, P1-A5-2, P1-B1-5, P1-C1-5			Li, Guofeng	1F-4, P1-C11-10
Kondo, Kengo	P1-A7-6, P1-B5-2, P1-C6-4			Li, Guoyang	2G-2, 5J-5, P1-A4-11
Kondoh, Jun	P2A2-3, P4-A1-5, P4-C2-6			Li, He 5I-2, 6K-5, P1-C5-7, P5-A3-1	
Konofagou, Elisa E.	1D-2, 1F-1, 1G-4, 2F-5, 2H-4, 3E-5, 5I-1, 5I-4, 5K-6, P1-A11-2, P1-A11-8, P1-A6-2, P1-B11-1, P1-C10-5, P1-C11-8, P1-C6-5, PA-1			Li, Jia 1I-4	
Konoma, Chihiro	7H-1			Li, Jingzhi	4G-1, P1-C10-7
Konopleva, Marina	P3-A1-2			Li, Meng-Lin ...	2B-6, P1-A9-7, P1-B7-1, P1-B9-3
Koo Sin Lin, Coralie	5G-5			Li, Mo P4-B2-2	
Koo, Jabeom	7C-5			Li, Pai-Chi ...	P1-A2-2, P1-A8-2, P1-B5-10, P1-C6-10, P1-C6-6
Kooiman, Klazina	P1-C3-3			Li, Peiyang	P3-C1-1, P5-B1-1
Kook, Taeho	7H-3			Li, Ping	P4-B3-5, P4-C2-5
Kopcansky, Peter	P3-B1-16			Li, Qian	P3-A3-1, P3-B1-8
Kopelman, Raoul	4E-2			Li, Qiaochu	3B-4
Koriakina, Nadezhda	2A-4			Li, Qiuyan	P2A3-6, P2B2-4
Korotyaeva, Maria	6H-5			Li, Rui	4H-3
Korte, Cl De	4J-4, 4J-6			Li, Runze	P5-B1-7
Koshino, Masayuki	5F-2			Li, Shiyong	P1-A7-9
Koskela, Julius	5D-6, 5F-4			Li, Sibao	6J-3
Kotelyanskii, Iosif	P3-B1-15			Li, Xiang	P5-B1-3
Kothapalli, Satya Vvn	P1-B2-9			Li, Xiangjia	6K-2
Kothary, Nishita	P1-B10-2			Li, Xiaotong	P1-A8-6
Kouamé, Denis	5K-1, P1-A6-6			Li, Xiaozhen	P5-A1-2
Kouyama, Hikaru	P5-C3-7			Li, Xinyi	5F-3, 7H-4, P4-A1-2, PA-14
Koyama, Daisuke	5E-1, 5E-5, PA-12			Li, Yang	P1-C7-1
Kranemann, Tim C.	5K-3, P1-C6-17			Li, Yongxiang	P5-B1-4
Kreider, Wayne	6I-5, P1-B2-8			Li, You	1E-4
Kremen, Thomas	1I-6			Li, Yuanwei	3H-1, 3H-4
Kreuzer, Susanne	5D-4			Li, Yujiao	P1-A11-5, P1-A11-6
Krieg, Fabian	6G-1, P2B1-5			Li, Yunduo	4H-3
Kripfgans, Oliver D.	5K-5, P1-B1-4			Li, Zhangjian	P3-C1-1, P5-A1-4, P5-A1-6, P5-B1-1
Kritly, Léopold	3F-4			Liang, Ji	7C-6
Kriz, Jeff	7C-2			Liang, Weijian	P5-C1-8
Kruizinga, Pieter	1E-3, 2E-5, 4A-2, 4B-5, 4J-3, 6G-2, 7F-4, P5-A3-4, PA-5			Liang, Xiaolong	P1-B11-2
Kubota, Takafumi	P3-A1-3			Liang, Yong	P4-B3-7
Kucewicz, John	P1-B2-8			Liao, Songyan	5I-2
Kudenov, Michael	7A-3			Liebgott, Hervé 2C-6, 2E-2, 4A-4, 4J-1, 4K-6, 7A-5, P1-A10-3, P1-A9-4, P1-A9-5, P1-B1-2, P1-B1-3, P1-B1-6, P1-C7-5	
Kudo, Masatoshi	P1-C6-4			Liebler, Marko	5G-5
Kudo, Nobuki	1H-1			Lifshitz, Ron	6A-3
Kugelman, Tara	1G-4, P1-C11-8			Liggitt, H.Denny	3A-5
Kulikowicz, Ewa	4E-5			Light, Roger	P2C1-3
Kumar, Viksit	3E-1, P1-C5-6			Lilly, Jacob L.	3J-3, P1-B4-2, P1-B4-6
Kumasaki, Kenji	P1-C1-6			Lim, Fannon	7K-1
Kuo, Justin	6E-1, 7J-2			Lim, Hae	P3-C1-5
Kupnik, Mario	5H-2, 5H-4, 6K-1, P2B2-1			Lin, Chih-Ming	7J-6
Kupsch, Christian	5H-3			Lin, Chih-Yu	1K-3
Kurabayashi, Shuichi	P2B3-3			Lin, Fanglue	3I-6, P1-B6-3
Kurashina, Yuta	P2B3-3			Lin, Haoming	2K-3, P1-C6-3
Kuribara, Hiroshi	P1-C1-6			Lin, Hsiang-Ching	P1-A3-3
Kurz, Nicolas	7I-4			Lin, Julien	1F-5
Kuscer, Danjela	P5-C3-3			Lin, Shang-Ching Lin	P1-A2-2
				Lin, Shengtao	3K-5, 4F-5, 4G-5, P1-C3-4
				Lin, Weijun	P3-B1-8

Lin, Yi-Tim	P1-B2-5
Lin, Yu-Chun.....	P1-C11-5
Lin, Zhengrong.....	1J-4, 2D-5
Lindsey, Brooks D.....	3G-3, 6J-2, 7G-6
Lines, David	5H-2, 5H-4
Lippe, Boris	4J-3
Littmann, Francois	P2C2-8
Liu, Chang-Jun	P2B2-2
Liu, Cheng	P1-A7-9
Liu, Chih-Hao.....	P1-C6-12
Liu, Dalong.....	2D-6
Liu, Gang.....	P1-B2-3
Liu, Hongwei.....	P2C1-2
Liu, Hsiao-Chuan	P3-C1-5
Liu, Huajun.....	P2C1-2
Liu, Ji-Bin.....	4G-1, P1-C10-7, P1-C4-8
Liu, Jinfeng.....	P5-C3-1
Liu, Jing	4K-4, P1-C1-4
Liu, Pengbo	P5-A1-4, P5-B1-1
Liu, Rong.....	1E-6
Liu, Runna	3B-3
Liu, Sihao	P1-A6-7
Liu, Wei-Wen.....	P1-C6-6
Liu, Xiaoguang.....	7C-3
Liu, Xinlu	P4-B3-7
Liu, Xiufang	1K-6
Liu, Yangminghao.....	7G-4
Liu, Yanshan	P1-A11-5, P1-A11-6
Liu, Yingxia	P1-C6-3
Liu, Yingxiang	P3-A4-1
Liu, Yu.....	1I-1
Liu, Yufei	P5-B2-11
Liu, Yuhao.....	7C-3
Liu, Zhengyou	6H-3
Liu, Zhi	P1-A5-4, P1-B5-8
Llimós Muntal, Pere.....	7F-5
Lofqvist, Torbjorn	5A-3
Lok, U Wai	P1-A8-2
Lomello, Marc	6B-5
Long, James	P1-B3-3
Long, Jiangying.....	P1-B2-3
Long, Nicholas J.....	1F-5, 4F-5, P1-C4-7
Long, Will.....	2J-5, P1-C1-2
Lopata, Richard ...	4B-3, 5I-6, 5J-1, P1-A4-10, P1-A4-2, P1-A4-8, P1-A7-2
Lou, Yang	P1-C1-1
Løvstakken, Lasse .	1A-6, 2C-6, 2F-4, 4A-1, 4I-1, P1-A6-8, P1-B3-4, P1-B5-3, P1-C8-1, P1-C8-3, PA-6
Lowerison, Matthew.....	P1-C4-2
Lozzi, Andrea	P4-B2-5
Lu, Hoang D	4F-1
Lu, Jian-Yu	2J-1
Lu, Ming-Chen	P1-B7-1, P1-B9-3
Lu, Mingzhu	P1-A11-4, P1-A11-5, P1-A11-6
Lu, Minhua	P1-A1-1
Lu, Shukuan... 3B-3, P1-A11-4, P1-C7-8, P3-C1-4	
Lu, Xiangning.....	P2A3-3
Lu, Yufeng.....	P2A3-2
Lubner, Meghan	P1-B5-7, P1-C6-1, P1-C6-7
Lucas, Margaret.....	7K-1
Luchies, Adam	2C-3, 2C-5
Lum, Jordan.....	3I-3
Luo, Jianwen 2C-2, 2F-2, 2G-2, 4H-3, 4K-4, 5J-3, 5J-5, P1-A4-11, P1-A5-4, P1-B11-2, P1-B5-8, P1-C1-4, P1-C1-9	
Luo, Wei	3B-4
Lux, Francois.....	P1-C10-4
Luzanov, Valery	P3-B1-15
Lv, Zhen	2K-3
Lyer, Stefan	P1-B7-2
Lyng, Oddveig.....	P1-A6-8

M

M. J. Cowell, David	4D-2, P1-A1-7
M. Porter, Tyrone.....	P3-A3-1
Ma, Bo.....	P5-C1-5
Ma, Congyun.....	P2C1-6
Ma, Hongtao.....	P5-A1-6
Ma, Lucai	P1-A8-5
Ma, Luyang	P1-B11-4
Ma, Teng	2K-2, P1-A4-15, P1-C7-1
Ma, Yixin	P4-C2-5
Maadi, Mohammad	6J-1, 7E-3
MacConaghy, Brian	3A-2
MacDonald, Michael P	5E-3
Machado, João Carlos.....	P1-C6-14
Machado, Priscilla.....	P1-A3-8, P1-C4-11
Machi, Junji.....	P1-B10-1
Machida, Shuntaro	7E-2, 7E-4, 7E-5
Macleod, Charles	5B-1
Macoskey, Jonathan.....	3B-2
Madiena, Craig.....	4H-2
Madore, Max	P3-B1-14
Magat, Julie	1C-4
Magenes, Giovanni	2A-1
Magnin, Remi.....	1K-4
Mahakian, Lisa M.	1G-2, 1I-1, 3C-2
Mahalingam, Neeraja.....	1C-5
Mahmud, Marzana M.....	P5-A1-3
Maia, Joaquim.....	P1-A9-2
Maiolo, Luca	P5-B2-1
Majdi, Joseph	P1-C8-4
Majschak, Jens-Peter.....	5G-5
Maksuti, Elira	P1-A4-7, P1-A4-9
Maldonado, Kiersten.....	4E-4, P1-A7-3
Mallidi, Srivalleesha	P1-B7-7
Malocha, Svetlana.....	7H-3
Malyarenko, Eugene	P1-B8-5
Mamou, Jonathan 5K-1, P1-A10-4, P1-B10-1, P1-C9-3	
Manaspon, Chawan.....	P1-C10-9
Manduca, Armando.. 3D-3, 3K-4, 4H-5, P1-B3-6	
Maneas, Efthymios	P1-B8-2
Mangadiao, Joey	P1-B4-2
Mangan, Robert.....	5J-5
Mangin, Stéphane	6B-5
Maniadis, Panagiotis	5D-6, 5F-4
Mann, Ritse	P1-B10-3
Mannaerts, Christophe K	P1-B10-5
Mano, Isao.....	2H-1
Mansour, Omar	P1-B3-9
Marcheteau, Germain.....	P1-C6-8
Maresca, David	P1-B4-1, P1-C2-5
Maret, Georg	1E-3, PA-5
Marhenke, Torben.....	P2B2-3
Marquardt, April	4E-3
Marquet, Fabrice	1C-4
Marras, Simone	6A-5
Martinez, Florian.....	P1-A9-1
Martins, Paolo	6H-2
Maruyama, Hitoshi	P1-A10-7, P1-C9-3
Maruyama, Kazuo.....	P3-C1-2
Marzani, Alessandro	6G-5
Marzo, Alberto	P1-C2-3
Maskay, Anin	6E-3
Mast, T. Douglas.....	1C-5, P1-B11-3
Mastik, Frits	2E-5
Masuda, Kohji.....	P1-C7-7
Matam, Mahesh.....	1C-2
Mateo, Philippe	1D-6, 2F-3
Matéo, Tony	7B-2, P5-C1-1
Matera, Riccardo.....	4H-1
Mateu, Jordi	P4-B1-5
Matheny, Mathew	6A-3
Matrone, Giulia	2A-1, 2D-2, P1-A1-3, P5-B2-6

Matsuda, Satoru	P4-A2-1
Matsukawa, Mami ...	2H-1, 5E-1, 5E-5, 7I-5, P1-C9-11, P1-C9-8, P3-A1-3, P3-A5-2, PA-12
Matsumoto, Takuya.....	P1-B5-2
Matsunaga, Terry.....	3K-5, 4F-5
Matsuzaki, Hironobu	P3-C1-2
Mattrey, Robert.. 4C-1, P1-B6-4, P1-C4-1, P1-C4-11	
Matula, Thomas	4F-2, 4F-3
Mauldin Jr., F. William	3I-2
Mauldin, Will.....	7A-6
Mauti, Barbara	P5-B2-1, P5-B2-6, P5-C1-6
Maxwell, Adam	3A-2, 6I-5, P1-B2-8
Mayer, Andreas	5D-2, 6A-2, P4-B1-1, PA-13
Mayer, Elena.....	5D-2, P4-B1-1, PA-13
Mayer, Markus.....	5D-2, P4-B1-1, PA-13
Maznev, Alexei A.....	6C-1
McAlevey, Stephen A.....	P1-B5-5, P1-C5-3
McDannold, Nathan.....	1K-2
McGough, Robert	6A-5, P1-A10-1
McHugh, Sean	P3-A2-2, P4-A1-3, P4-A2-4
McLaughlan, James	1C-3, 3I-5, 4D-2
McLeish, Colin	4C-6
McMahon, Dallan	1G-5
McMurtry, Stefan	7J-4, PA-15
McNally, Patricia.....	2J-5
McPhillips, Rachael.....	7D-2, P5-A1-1, P5-B2-7
McSweeney, Morgan D.....	4G-3
Meacci, Valentino	5H-6
Meel-Van Den Abeelen, Aisha	4C-3, P1-B10-3
Mehdizadeh, Emad	6K-4
Mehrmohammadi, Mohammad	4E-6, P1-B8-5
Melandsø, Frank	P2C2-4, P5-B1-8
Melandsø, Terje	P2C2-4
Melki, Lea	2F-5, P1-A5-1, P1-A6-2, PA-1
Mellema, Daniel	3D-3
Melodelima, David	1C-1, 1C-6
Melot-Dusseau, Sandrine	1C-4
Memon, Farah	7D-1
Mendes, Vanda	P1-C4-10
Mendez, Simon	4I-4
Meng, Long.. 1J-4, 2D-5, 5E-4, P1-B2-11, P1-B2-6, P3-C1-8	
Meng, Rui	1E-6
Meng, Ruoyan.....	P1-B2-11, P1-B2-6
Menigot, Sebastien	P1-A9-12, P1-A9-13
Menssen, Jan	P1-A4-1
Mercado-Shekar, Karla.....	P1-C11-2
Mériaux, Sébastien	1F-6, 1K-4, P1-C10-4
Merricks, Elizabeth.....	3E-6, 3F-5
Mertens, Luc	1A-4
Mertin, Stefan	7I-1, 7I-4
Merugu, Srinivas	P4-C2-7
Meshram, Nirvedh.....	P1-A4-5, P1-A4-6, P1-B9-4
Messas, Emmanuel	3A-4, 3B-1, 5J-2
Mestas, Jean-Louis	1J-3
Meyer, Diane	3F-1
Meynier, Cyril	3D-4, P5-C1-1
Mihara, Tsuyoshi.....	P2C2-6, P2C2-7
Milkowski, Andy	P1-A10-5
Millán-Blasco, Oliver	P2A4-1, P2A4-2, P2A4-3
Miller, Jordan.....	P1-B3-3
Miller, Rita	4C-4, P1-C9-9
Millioz, Fabien.....	4K-6
Mills, David	7A-1
Mimura, Masakazu	7H-1
Min, Zheng	P5-C3-9
Mincigrucci, Riccardo	6C-1
Mineo, Carmelo	5B-1
Minonzio, Jean-Gabriel	P1-C9-1
Minotti, Antonio	P5-B2-1
Miralles Ricós, Ramón	P2C1-1
Mirault, Tristan	3A-4, 5J-2

Mirbozorgi, SeyedabdollahP5-A1-7
 Mirea, OanaP1-C8-5
 Mischi, Massimo 3D-5, 3H-2, P1-A6-1, P1-B10-5,
 P1-B9-1, P1-C4-12, P1-C4-6
 Mishin, Sergey6B-2
 Mishra, Harshad7J-1, 7J-4, PA-15
 Mitchell, Carol3G-1, P1-A4-5, P1-A4-6
 Mitroova, ZuzanaP3-B1-16
 Mitrovic, JovanP1-A1-9
 Mitton, David2H-3
 Miura, HikaruP2C2-5
 Mizuno, JunP4-C1-1
 Mochizuki, TakashiP1-C7-7
 Mohamad, Medhat6G-6
 Mohamadi, AminP1-C9-10, P1-C9-6
 Mohamed Moubark, AsrafP1-A1-7
 Mohammadabadi, Ali1F-3
 Mohanty, Kaustav3G-2
 Moini, Azadeh7G-1
 Molchanov, Vladimir6C-3
 Mølgaard, MathiasP4-B3-2
 Monaco, Giulio6C-1
 Monaghan, MarkP1-C3-7
 Moon, Byeong-UiP1-B4-4
 Moon, Ju-YoungP5-A2-1
 Moore, Christopher3F-1, 3F-3, P1-C6-11
 Moore, CooperP1-C6-16
 Moore, Michael J.4D-4 , P1-B8-6, P1-B8-8
 Moran, CarmelP1-C9-2
 Morgan, Matthew R.2E-3, P1-B9-8, P1-C1-2
 Moriya, Tadashi5H-5, P1-A8-3
 Morris, Adam1C-2
 Morris, D. CodyP1-C5-1
 Morris, Jay1C-2
 Morse, Sophie V1F-5
 Mosegaard, Jesper2D-3
 Moshavegh, Ramin4I-5
 Moutaouekkil, Mohammed...7C-1, 7J-1, 7J-4, P4-
 C1-3, PA-15
 Mozhaev, VladimirP3-A5-1
 Mozie, Kenneth NonsoP2C2-2
 Mozumi, Michiya2B-3
 Mu, PeitianP1-A8-7, P1-B9-7
 Mukaddim, Rashid AlP1-A4-17
 Muleki-Seya, PaulineP1-C9-5
 Mulholland, AnthonyP5-A3-2, P5-B2-8
 Muller, Marie3G-2, 3G-3, P1-C9-4
 Munoz, Nina4E-4, P1-A7-3
 Munsterman, Isabelle4C-3
 Murakoshi, JunP2C1-4
 Muralidharan, Aswin4A-2
 Murali, Paul6B-3, 7I-1 , 7I-4 , P4-A1-4
 Murase, Tomohiko7H-1
 Murata, YuyaP1-A7-6
 Murray, Drew6A-5
 Murray, PaulP1-A8-6
 Murray, Todd3I-3, 5G-2
 Myhre, Ola Finneng2B-1
 Mylvaganam, SabaP2C2-2

N

Na, Jeong5C-4
 Nabae, Hiroyuki7K-4
 Nabavizadehraftsanjani, Alireza3E-5
 Nadig, Sachin7K-6
 Nagakubo, AkiraP4-A2-1
 Nagamune, TeruyukiP1-C10-2
 Nagaoka, Ryo3I-4, 4D-3
 Nagata, Hajime5A-2
 Nagel, Eike2J-3
 Nakagawa, Ryo5D-5, P4-B1-2
 Nakamura, Kentaro5E-1 , 7K-3 , PA-12
 Nakamura, Nobutomo7I-3 , P4-A2-1

Nakamura, TakuyaP1-B2-7
 Nakanishi, ShokoP1-C9-8
 Nakao, Takeshi5F-2
 Nakatsuma, Kei5A-5
 Nam, Kibo3J-5
 Namihira, TakaoP5-C3-7
 Namita, TakeshiP1-A7-6, P1-B5-2, P1-C6-4
 Narata, Ana PaulaP1-C2-3
 Nardiello, DonatellaP2A1-1
 Naser, Mohamed4E-4, P1-A7-3
 Näthke, Inke1I-2, 7G-4, P3-B1-2
 Nauber, Richard5H-1, 5H-3, PA-9
 Nauleau, Pierre2F-5, 5K-6, P1-A6-2, PA-1
 Naumenko, Natalya.5F-1, 6C-3 , P4-A1-1, P4-B3-
 3
 Nayak, Rohit2G-3, 2G-5, P1-A4-4
 N'Djin, W.Apoutou1J-3, 2E-2, 7G-3, P5-C2-1
 Nedospasov, IlyaP3-A5-1
 Negreira, Carlos3F-2, 5J-4
 Nelson, Keith A.6C-1
 Nemade, Harsha BP4-C2-9
 Nety, Suchita PP1-B4-1
 Newbloom, Greg5E-2
 Newsome, Isabel G.6J-2 , P1-B6-3
 Newton, Ian P1I-2, 7G-4
 Nguyen, ManP1-A8-1
 Nguyen, Thuy Thu2B-4
 Nguyen, Trong4C-4
 Nguyen, Vu-HieuP1-A9-3
 Nguyen-Dinh, An3D-4, 7B-2
 Ni, Jun4B-1
 Nichols, Timothy3E-6, 3F-5
 Nicolas, Barbara4J-1, P1-A1-3, P1-A9-4
 Nicolay, Pascal7I-4 , P4-B3-3
 Nicoud, Franck4I-4
 Nie, Luzhen1C-3, 3I-5
 Nielsen, Michael Bachmann4I-5, P1-B3-8
 Nieves, LenitzaP1-B4-2, P1-C3-1
 Nightingale, Kathryn R...2J-6, P1-B5-9, P1-C5-1,
 P1-C5-4, P3-A3-5
 Nikoozadeh, Amin6E-4, 7G-1
 Nillesen, MaartjeP1-A2-5, P1-A4-1, P1-B7-4
 Nilsson, Per1F-1
 Ning, Bo2I-3
 Nio, AmandaP1-C3-7
 Nirupama, SabnisP1-C10-8
 Nishimura, FutoshiP3-B1-13
 Niu, Lili.1J-4, 2D-5, P1-B2-11, P1-B2-6, P3-C1-8
 Noble, J. Alison2I-1
 Noimark, SachaP1-B8-2, P2A2-5, P5-C3-2
 Noothout, Emile6J-4 , 7F-1 , 7F-4 , PA-17
 Norli, PetterP2C1-5
 Novell, AnthonyP1-A9-8, P1-B6-3, P1-C11-9,
 P1-C4-10, P1-C9-7
 Nowicki, AndrzejP1-B10-4, P3-A3-3 , P3-B1-5
 Nyankima, A. Gloria1H-4, 4G-3
 Nyrnes, Siri Ann4I-1

O

O'Donnell, Matthew . 2E-4, 4F-2, 4F-3, 5E-2 , P1-
 B5-1
 O'Brien, Jr., William D.P1-C9-5, P1-C9-9
 O'Brien, Parker2D-6
 O'Connell, Graeme2D-4, P1-B9-6, P1-C4-9
 O'Dell, MichaelP1-C6-10
 O'Donnell, Matthew1D-5, 3D-2
 Oeffinger, Brian4G-1
 Oehm, Lukas5G-5
 Oelze, Michael3G-4, 4C-4
 Offerdahl, KatelynP1-C5-3
 Ofuji, Shoki7K-4
 Ogi, Hirotugu7I-3 , P4-A2-1, P4-B3-6
 Oguz, Huseyin KaganP5-C1-5

Ohara, YoshikazuP2C2-6, P2C2-7
 Ohdaira, Takeyuki6F-1
 Ojeda-Fournier, HaydeeP1-C4-11
 O'Kane, Patrick4G-1
 Okumura, ShigeakiP1-A9-3
 Olcott, Eric7D-1
 O'Leary, RichardP5-A3-2
 Olesen, Jacob Bjerring4I-5
 Olive, Kenneth P3E-5, P1-C6-5
 Oliver, Bryan7C-2
 Olivier, Cécile2H-3
 Olumolade, OluyemiP1-C10-5
 Ommen, MartinP5-B2-10
 Omori, Tatsuya5F-3, 7H-4, P4-A1-2, P4-A2-3,
 P4-B1-2, PA-14
 Ono, Yuu4C-2
 Onogi, ShinyaP1-C7-7
 Oodaira, TakeyukiP2A3-5
 Opacic, Tatjana3C-4
 Oppenheim, Irving5A-4, 6D-2
 Oralkan, Ömer .. 7A-3 , 7E-6, 7F-2 , 7F-3 , 7G-1,
 P1-B6-3, P5-A1-3, PA-16, PA-18
 O'Reilly, Meaghan1G-5, 3H-5
 Oruklu, Erdal6F-2, P2B1-1, P2B1-2
 Osaki, Hayato7K-4
 Osaki, TaichiP3-C1-2
 Osborn, Thomas2K-6, P1-C6-15
 Oshmyansky, Yury6B-2
 Osman, Ahmad6G-1, P2B1-5
 Osman, Hafiz7K-1
 Ossant, FredericP1-B11-9
 Østvik, AndreasP1-C8-1, P1-C8-3
 Osumi, AyumuP2C1-7, P3-B1-7
 Ottesteanu, CorinP1-C5-8
 Otis, Brian7C-5
 Otsuki, YutaP1-B4-7
 Otuska, Tomohiro5E-5
 Ouzir, Nora2I-4
 OvaciKli, Aziz KubilayP2B1-8
 Owen, Kevin7A-6
 Ozaki, Etsuko2H-1
 Ozaki, MasayukiP4-C2-6
 Ozgun, KathrynP1-B3-2
 Ozum, Huseyin EmreP5-C2-4

P

P. Parkin, IvanP2A2-5
 P.Y. Desmulliez, Marc7D-2
 Pääjärvi, PatrikP2B1-8
 Pacella, John JP1-A3-2
 Palermo, CarmineP1-C6-5
 Palmeri, Mark L. 1B-1, 2J-6, 2K-4, P1-A4-16, P1-
 B5-9, P1-C5-1, P1-C5-4, P1-C6-9
 Pamidi, Taraka Rama Krishna5A-3
 Pan, JingP1-A7-8
 Pan, ShutingP3-C1-3
 Pandey, Aditya3A-1
 Panfilova, AnastasiiaP1-C4-12
 Pang, GuofengP3-B1-11
 Pang, Kuin3K-5
 Pang, Wei7C-6, P3-C1-3
 Pang, XiangnanP4-B1-4
 Papadacci, Clement2F-3, 3G-6
 Papadopolou, Virginie2D-4, 3G-3, P1-A11-1,
 P1-A3-1, P1-B6-3, P1-C10-5, P1-C11-3,
 P1-C2-4, P1-C4-9
 Papakonstantinou, IoannisP2A2-5
 Parcerio, Guilherme CrossettiP1-C6-14
 Park, Chun DuckP1-A8-4
 Park, DongheeP1-C10-3
 Park, HyeonP1-C10-3
 Park, Jin SooP5-C1-4
 Park, Jongwoong6F-3

Park, Jung Ho	P5-C1-4	Pinto, Joseph	P1-B10-7	Ramamurthy, Gopalakrishnan	3J-3
Park, Junil	P5-A2-4	Pinton, Gianmarco	2K-5, 3G-3, 3I-6, P1-C6-13, P3-A3-5	Ramasawmy, Danny	6E-2, PA-8
Park, Kwan Kyu	7J-3, P5-B2-3, P5-B2-4	Piotrzkowska-Wróblewska, Hanna	P1-B10-4	Ramirez, Ana B.	P3-A3-2
Park, Kyungjin	P1-B8-1	Pipa, Daniel	P1-A9-2	Ramos, Ana Paula	P1-B4-9
Park, Suhyun	2K-1	Piras, Daniele	5B-5	Ranger, Bryan	P1-A5-6
Park, Sungjo	P1-B8-1	Pirouz, Amirabbas	7F-6, P5-A1-7, P5-B2-5	Rashtian, Hooman	7C-3
Park, Yujin	P1-C10-3	Plessky, Victor	5D-6, 5F-4	Rasmussen, Morten Fischer	7D-1, 7G-1
Parker, Kevin	2B-5, 4C-1, P1-A9-10, P3-B1-3	Podkowa, Anthony	4C-4	Rattunde, Oliver	7I-1
Parkin, Ivan P.	P1-B8-2, P5-C3-2	Poduval, Radhika	P2A2-5	Rau, Richard	1E-3, PA-5
Parks, Rob	P1-B9-9	Poepping, Tamie L.	P1-B3-9	Raum, Kay	2H-5, P1-C4-4, P1-C9-1, P1-C9-4
Parra, Jaime	5A-4	Pogue, Brian	3E-4	Raymer, Robin	3F-5
Parsapour Kolour, Mohammad Fazel ..	7I-1, 7I-4, P4-A1-4	Pohlman, Robert	P1-B5-7	Raymond, Jason	P1-C3-7
Partanen, Ari	P1-B2-9	Polewczyk, Vincent	7J-1	Redington, Andrew	P1-C11-2
Pashchenko, Vladimir	7I-1, 7I-4, P4-A1-4	Polichetti, Maxime	P1-A1-3	Reeves, Gordon	P1-A3-8
Pasquet, Ludovic	P5-C1-1	Polzikova, Natalia	P3-B1-15	Reichel, Erwin K.	6D-5
Passi, Stefano	P5-A2-2	Popovics, John	5C-1, 6F-3	Reinhardt, Alexandre	P4-C2-4
Pasternak, Maurice	4F-6	Porée, Jonathan	4I-6, 5I-3	Reiter, Austin	P1-C8-7
Patat, Frédéric	P1-C6-8	Pottier, Geraldine	1F-2	Rekhi, Angad	7E-1
Pätzold, Olf	5H-1, PA-9	Pouget, Pierre	1E-1	Remenieras, Jean-Pierre	3F-4, P1-C6-8
Paulsen, Samantha	P1-B3-3	Pouliopoulos, Antonios N.	1F-5	Remme, Espen W.	2B-4
Paulus, Yannis	1I-4	Power, Nicholas	P1-C4-2	Rémond, Mathieu	3B-1
Pauly, Kim Butts	7G-1	Pozzo, Lilo	4F-2, 4F-3, 5E-2	Rental, Carlos	P2A1-4
Pavan, Theo Z.	P1-A10-2, P1-B4-9, P1-B7-3, P1-B8-7	Prentice, Paul	5G-4, 5G-6	Ribeiro, Leticia	P1-A10-2
Payá Bernabeu, Jorge Juan	5C-2, P2C1-1	Presto, Jenny	1F-1	Ricci, Marco	P2B1-6
Payen, Thomas	2H-4, 3E-5, P1-C6-5	Preston, Chet	1D-4	Ricci, Stefano	2E-1, 4H-1, 4I-3, 5H-6, P1-A2-1
Peakall, Jeff	P2B3-2	Prevot, Claude	6H-2	Rickel, J.M. Robert	4G-2
Pecora, Alessandro	P5-B2-1	Prieur, Fabrice	1H-5, 2A-3, P2C1-5	Riise, Jonathan	5B-1
Pedersoli, Emanuele	6C-1	Prinzen, Frits	5I-6	Rindal, Ole Marius Hoel	2B-2, P1-A1-4, P1-B1-7
Pedrosa, João	2A-4, 2J-3, P1-A5-2, P1-B1-5, P1-C1-7	Provost, Jean	1D-6, 2F-3, 3C-1, 3G-6, P1-C2-5	Rivera, Judith N.	P1-C11-3
Peiyang, Li	P3-C1-9	Prud'Homme, Robert K.	4F-1	Rivoire, Michel	1C-6
Pelivanov, Ivan	3D-2, 4F-2, P1-B5-1	Ptasznik, Stanislaw	P3-B1-9	Rjelka, Marek	6A-2
Pelled, Gadi	1I-6	Pupyrrev, Pavel	6A-2	Robert, Jean-Luc	4K-1
Peng, Hanmin	P2B2-5	Pyataikin, Ivan	P3-B1-15	Robin, Justine	1I-3, 3B-1
Peng, Jue	P1-A8-5, P5-A1-2	Pye, Steve	P1-C9-2	Robini, Marc	7A-5
Peng, Jun	P1-B6-4			Robins, Thomas	P1-B6-1
Peng, Qin	1H-2			Rochus, Veronique	6C-5
Peng, Xiaojian	P5-A1-2			Rodgers, Allison	P1-A4-17
Peng, Y.M.	P1-B11-8			Rodríguez-Molares, Alfonso	1A-6, 2C-6, 4A-1, P1-A1-4, P1-A6-8, P1-B1-7
Peralta, Laura	2H-3, 2H-6, P1-C9-1	Qi, Luchao	P1-B2-1	Roemer, Florian	P2B1-5
Perdios, Dimitris	2I-2, P1-A9-1	Qian, Ming	P1-B2-1	Roh, Yongrae	7G-2, P2A3-7, P2B3-1
Perdomo, Jonathan	2D-4, P1-B9-6, P1-C4-9	Qian, Xuejun	2K-2, P1-A4-15	Rohling, Robert	P1-A1-5
Pereira Da Cunha, Mauricio	6E-3	Qiang, Bo	P1-B3-6	Rohrbach, Daniel	5K-1
Pernod, Philippe	P4-C1-3	Qin, Bin	P1-C10-6	Rojas, Juan D.	1H-4, 2D-4, P1-B4-3, P1-B6-3, P1-C4-5
Pernot, Mathieu	1A-4, 1C-4, 1D-1, 1D-6, 1I-3, 2F-1, 2F-3, 3A-4, 3B-1, 3C-1, 3G-6, 4I-6, 5J-2, 7B-2, P1-A4-3, P1-C2-5, P1-C2-6, PA-4	Qin, Dui	6C-6, P1-B2-10	Römer, Florian	6G-1
Perrault, Cecile	P1-C2-3	Qin, Peng	P1-B2-12, P4-C2-5	Roncin, Pierre	7G-4
Perrot, Vincent	P1-C7-5	Qin, Yexian	1D-4, 1D-5, 2E-4, P1-B7-8	Roquette, Lucien	P1-A9-6
Perrotin, Franck	P1-C4-10, P1-C6-8	Qin, Yu	P1-A7-8	Rosa, Bruno M. G.	P1-B9-2
Pertjys, Michiel A.P.	4J-3, 6J-4, 7F-1, 7F-4, P5-A3-4, PA-17	Qiu, Weibao ..	1E-6, 1F-4, P1-A8-7, P1-B9-7, P1-C11-10, P5-B1-2, P5-B1-5, P5-B1-6	Rosado-Mendez, Ivan M.	2H-2, 2K-4, 4C-5, P1-C6-9
Petrosyan, Tigran	4D-5	Qiu, Yongqiang	7B-4, P5-A1-1	Rosenberg, Jarrett	2J-2, 3J-4, P1-B10-2
Petrusca, Lorena	2E-2, 4A-4, 4J-1, 7A-5, P1-A10-3, P1-B1-2, P1-B1-3, P1-B1-6, P1-C7-5	Qiu, Zhen	P5-A3-2	Rosinski, Bogdan	7B-2, P1-C2-6
Petterson, Niels	5J-1, P1-A4-8	Qiu, Zhihai	P1-B2-2	Rosnitskiy, Pavel	6I-5
Peyrin, Françoise	2H-3	Qu, Jiangyue	P5-C3-6	Rossi, Sandro	P5-A2-2
Pflieger, Hannah	1C-6	Quaglia, Fabio	P5-B2-6	Rostocki, Aleksander	P3-B1-9
Pham Thi, Mai	6H-2, P5-C3-4	Quan, Qiquan	6K-5, P5-A3-1	Roth, Richard	P5-A2-3
Phoon, Colin K.L.	P1-A2-8	Queirós, Sandro	2J-3	Rottenberg, Xavier	6C-5
Piastra, Marco	P5-B2-6	Quesson, Bruno	1C-4	Rouffaud, Rémi	3F-4, P5-C3-4
Piazza, Gianluca ..	6B-2, 6K-4, P4-B2-1, P4-B2-2, P4-B2-6, P4-C1-4, P4-C2-7			Roukes, Michael Lee	6A-3
Picaud, Serge	1E-5			Roux, Emmanuel	4K-6, 7A-5, P1-B1-2
Pichardo, Samuel	P5-C2-3			Roux, Philippe	P3-B1-4
Pieczonka, Lukasz	P2A3-8			Rouyer, Julien	P1-B10-7
Piepenbrock, Marion	3C-4			Rouze, Ned C.	2J-6, P1-C5-1, P1-C5-4
Pierce, Gareth	5B-1			Rozbicki, Jakub	P5-A2-6
Pierre, Guillaume	P5-B1-9			Rubel, Oleg	P5-C2-3
Pigeat, Philippe	7J-4, PA-15			Rubin, Daniel	3G-5
Pileggi, Larry	P4-C2-7			Rubin, Jonathan	4B-1
				Ruby, Richard	7C-5
				Ruile, Werner	5D-2, P4-B1-1, PA-13
				Ruiter, Nicole V.	5B-3
				Rutsch, Matthias	6K-1
				Rutten, Marcel	4B-3, P1-A7-2
				Ruyack, Alexander	6B-4

Q

R

Ryspayeva, Assel..... 7D-3
 Ryuzaki, Daisuke..... 7E-4, 7E-5
 Ryzy, Martin..... 5C-3

S

Sabatini, James 7A-1
 Sabbadini, A. P1-A4-13
 Sabeti, Soroosh 6G-4
 Sabra, Karim 7A-4
 Sadeghian Marnani, Hamed 5B-5
 Sadhu, Jyothi 6B-1
 Saegusa-Beecroft, Emi P1-B10-1
 Sagreiya, Hersh 3G-5
 Saha, Ratan K. P1-B8-8
 Saharkhiz, Niloufar 1D-2, P1-C6-5
 Sahel, José-Alain 1E-5
 Saijo, Yoshifumi 3I-4, 4D-3
 Sainsbury, Toby 5B-6
 Sakai, Yoshimasa 7K-3
 Sakuma, Ichiro P1-C10-2
 Salamat, Shahriar 3G-1
 Salazar, Claudia P1-B10-7
 Salazar, Jordi P2A4-1, P2A4-2, P2A4-3
 Saldanha, Nancy P4-C2-2
 Saldarriaga, Jorge 5J-4
 Salles, Sebastien 1A-6, 5I-5, P1-B5-3
 Saloux, Eric P1-A5-1
 Salut, Roland 6H-1
 Samimi, Kayvan 3G-1, P1-A4-17
 Sammali, Federica P1-A6-1
 Sampaio, Diego P1-B4-9, P1-B8-7
 Sampson, Richard P1-B1-4
 Samset, Eigil 2F-4, PA-6
 Samson, Christopher 6J-6
 Sanabria, Sergio J. P1-A10-6
 Sanders, Jean L. 7A-3, 7F-3, P5-A1-3
 Sandu, Cosmin S. 7I-1, 7I-4
 Sanghvi, Narendra 1C-2
 Saniie, Jafar P2A3-1, P2A3-2, P2B1-3, P2B1-4
 Sankaragomathi, Kannan 7C-5
 Sano, Ko-Hei 6D-4, 7I-2, PA-11
 Santiesteban, Daniela 3H-6
 Santos, Marc 1K-5
 Santos, Pedro 2A-4, 2F-4, P1-C1-5, P1-C1-7, PA-6
 Santoso, Andrew P. 2H-2, 2K-4, 4C-5, P1-C6-9
 Sapozhnikov, Oleg 3A-2, 6I-5, P1-B2-8, P1-B7-9
 Saris, Anne P1-A2-5, P1-A4-1
 Sarvazyan, Armen 4C-6
 Sasaki, Yohei P1-B2-7
 Sastra, Steve P1-C6-5
 Sathyanarayana, Sushanth 2I-3, 4K-2
 Sato, Masakazu P1-A8-3
 Sato, Takahiro P4-A2-4
 Sato, Tomo 1J-2
 Sato, Toru P1-A9-3
 Sauvage, Jack P1-C2-6
 Savoia, Alessandro Stuart ... 2D-2, 5K-4, P1-A1-3, P5-B2-1, P5-B2-6, P5-C1-6
 Saxhaug, Lars 4A-3
 Sayseng, Vincent 5I-4
 Sbeity, Fatima P1-A9-12
 Scaringella, Monica 2D-2
 Schade, George P1-B2-8
 Schäfers, Michael 4D-1
 Schalk, Stefan G. P1-B10-5
 Scheffer, Wolfgang 1E-3, PA-5
 Schiffner, Martin 4K-5
 Schifitto, Giovanni 2G-3, 2G-5, P1-A4-4
 Schirmer, Markus P1-C8-6
 Schlunk, Siegfried P1-A1-6
 Schmidt, Hagen P4-A1-6, P4-A2-2
 Schmidt, Samuel P1-C6-16

Schmitt, Lars P1-B9-1
 Schmitz, Georg 3C-4, 4D-1, 4K-5, 5K-3, P1-A1-8, P1-C6-17
 Schneider, Fábio P1-A9-2
 Schoot, Dick P1-A6-1
 Schou, Mikkel P1-C1-3
 Schultz, Susan 4G-6
 Schwab, Hans-Martin 4D-1
 Secomski, Wojciech P3-B1-5
 Seetohul, Vipin P5-A1-1
 Segal, David J. 1G-2
 Segers, Patrick 1A-4, P1-A4-3, P1-B3-4
 Segovia Fernandez, Jeronimo 7C-3
 Sehgal, Chandra 4G-6
 Seip, Ralf 1C-2, P1-B9-9
 Selingue, Erwan 1F-6
 Selles, Ruud W. P1-A5-3
 Sénégond, Nicolas 7G-3, P5-C1-1, P5-C2-1
 Senni, Luca P2B1-6
 Sennoga, Charles P1-C2-3
 Seno, Norihisa 7K-4
 Seo, Anna 5K-2
 Seo, Jongbum P1-C10-3
 Seok, Chunkyun 7F-2, PA-18
 Seshia, Ashwin A. 5C-6
 Seung Jin, Lee P3-A1-1
 Sevrukov, Alexander P1-C4-11
 Shabanimotlagh, Maysam 7F-4, P5-A3-4
 Shah, Anant 4F-5
 Shah, Jay 3F-6
 Shahraini, Sarah P4-B2-4
 Shamdasani, Vijay P1-A8-1
 Shamimi-Noori, Susan 4G-6
 Shams, Sadegh 5B-2
 Shang, Shaoqiang P1-A6-7
 Shanmugavelandy, Sriram P3-A1-2
 Shao, Minghui P2A3-3
 Shao, Weiwei P3-C1-1, P5-A1-6, P5-B1-1
 Shapiro, Galina 1I-6
 Shapiro, Mikhail G. 1J-2, P1-B4-1
 Sharples, Steve P2C1-3
 Shaul, Philip P1-B6-4
 Shaw, Anurupa P3-A2-3
 Shaw, Colette 3J-5, 4G-6
 Shcherbakova, Darya 1A-4, P1-A4-3
 Shelton, Sarah 3G-3, 6J-2, P1-C4-12
 Shen, Tueng T. 3D-2
 Shen, Xuelian P1-B2-11
 Sheyn, Dmitriy 1I-6
 Shi, Aiwei 3A-6, P3-C1-4
 Shi, Ruchuan P4-C2-5
 Shi, Shengjun P3-A4-1
 Shiba, Yasunari P4-C2-1
 Shibagaki, Yoshiaki P1-C9-11, P3-A1-3
 Shibasaki, Yoshikazu P1-C10-2
 Shibata, Koki P4-C2-6
 Shieh, Bernard 7A-4
 Shih, Cho-Chiang P1-A4-15
 Shiina, Tsuyoshi P1-A7-6, P1-B5-2, P1-C6-4
 Shikhabudinov, Alexander P2A2-1
 Shim, Dong 5D-1
 Shimidzu, Takahiro P4-C1-2
 Shimizu, Yuki 5E-1, PA-12
 Shin, Eui-Ji 7B-3
 Shin, Jun Seob 4K-1, P1-C1-1
 Shin, Namho P2A3-7
 Shindo, Yasuhiro P1-A6-3
 Shisler, Joanna P1-C9-9
 Shoudy, David 7A-1
 Shraim, Rawan 4G-1
 Shrout, Thomas 6I-1
 Shuai, Z.H. P1-B11-8
 Shubert, Joshua P1-B8-4
 Shum, Cheuk Fan 1C-2

Shung, K.Kirk. 1H-2, 2K-2, 6K-2, P1-A4-15, P1-C7-1, P3-C1-5, P5-B1-3, P5-B1-4, P5-B1-7, P5-C3-5
 Siddiqui, Ali P1-C4-8
 Sidhu, Paul S. 3H-3
 Sierra, Carlos 1F-1
 Sigrist, Rosa 3J-4, P1-B10-2, P1-B6-2
 Sikdar, Siddhartha 3F-6, P1-B7-6, P1-C8-4
 Silipigni, Giuseppe P2B1-6
 Silva De Moura, Fernando P1-C2-3
 Silva, Glauber P3-B1-1
 Silverman, Ronald H. P1-A2-8
 Silvestre, Chantal P5-B2-10
 Silvestrini, Matthew T. 1I-1
 Sim, Minseop P2C2-3
 Simeoni, Matthieu P1-A9-6
 Simon, Emmanuel P1-C6-8
 Simon, Julianna C. 3A-5, P1-B7-9
 Simoncig, Alberto 6C-1
 Simopoulos, Costas P5-B2-2
 Sinden, David P3-B1-11
 Singh, Aparna P1-C5-6
 Singh, Manmohan P1-C6-12
 Singh, Navab P4-C2-7
 Singh, Tania 1I-5, 1J-5
 Sirsi, Shashank P1-B6-4, P1-C10-8, P1-C4-1
 Smistad, Erik P1-C8-1, P1-C8-3
 Smith, Jennifer 1C-2
 Smith, Scott 7A-1
 Snyder, Brian P1-C9-10, P1-C9-6
 Solal, Marc 7H-3, 7H-5
 Solberg, Stian 2B-1, P1-C3-6
 Solomon, Oren 3H-2, 3K-2
 Somphone, Oudom P1-A2-7, P1-A5-1
 Son, Jungik (Jay) 7B-5
 Song, Homin 6F-3
 Song, Ilseob P1-A6-5, P5-A2-4
 Song, Jae Hee 5G-4, 5G-6
 Song, Pengfei 1A-5, 2C-1, 3D-3, 3K-4, 4H-5, P1-B3-6, P1-C3-2, P1-C3-8
 Song, Shaozhen 3D-2, P1-B5-1
 Song, Xuan P5-C3-5
 Soozande, Mehdi 4J-3
 Sorensen, Mathew D. 3A-5
 Sotnikov, Andrei P4-A1-6, P4-A2-2
 Souchon, Remi 2E-2, P1-B5-11, P3-B1-4
 Soulen, Michael 4G-6
 Soulioti, Danai 3I-6
 Soumann, Valérie 6H-1
 Sowers, Timothy 4B-2, P1-A7-1
 Spalding, Gabriel 5E-3
 Speicher, Daniel 6K-6
 Spicer, James 5C-5
 Sprengers, André P1-B7-4
 Springeling, Geert 2E-5
 Spytek, Jakub P2A3-8
 Sridharan, Anush 3J-6, P1-B9-6, P1-C4-11
 Stanczak, Maria ... 3J-5, 4G-1, 4G-6, P1-A3-8, P1-C10-7, P1-C4-11
 Stanzola, Antonio 3H-4, 4F-5
 Starr, Frank 3A-5
 Stedman, Quintin 7J-3
 Stefan, Wolfgang P1-B3-3
 Steffel, Catherine 3G-1
 Steifer, Tomasz P5-A2-6
 Steiner, Kurt 7H-3
 Steiner, Till 5B-3
 Stensæth, Knut Håkon 4A-1
 Stephanou, Philip P4-B1-3
 Stephens, Douglas N. 7A-2, 7G-1
 Stewart, Fraser 1I-2, 7G-4, P3-B1-2
 Stewart, Phoebe P1-A3-5
 Stobbe, David 3I-3, 5G-2
 Støylen, Asbjørn 1A-6

127

Vanderlaan, Don.....4B-2, P1-A7-1
 Varghese, Tomy3G-1, P1-A4-17, P1-A4-5, P1-A4-6, P1-B5-7, P1-B9-4, P1-C6-1, P1-C6-2, P1-C6-7
 Varray, Francois2E-2, 4J-1, 5K-4, 7A-5 , P1-A10-3, P1-A1-3, P1-A9-5, P1-A9-8, P1-B11-5, P1-B1-2, P1-B1-3
 Vasseur, Clement..... 6H-2
 Vasseur, Jérôme..... 6H-2
 Vastmans, Julie.....P1-A4-3
 Vega-Flick, Alejandro.....6C-1
 Velds, Hunter.....P1-A11-1, P1-A3-1, P1-C11-3
 Venâncio, Rui..... P1-B10-1
 Verdonschot, Nico.....P1-B7-4
 Verdu, Jordi.....7H-2, P4-C2-3
 Veres, Istvan.....5C-3
 Verhaegen, Frank.....P1-A6-4
 Verweij, Martin D.4J-3, 6J-4 , 7F-1 , 7F-4 , P1-A4-13, PA-17
 Veverick, Marek.....P3-B1-16
 Viallon, Magalie.....2E-2, P1-A10-3
 Vidal-Álvarez, Gabriel P4-B2-1, P4-C1-4
 Vignon, Francois 4K-1, P1-A2-7, P1-A5-1
 Vilain Thomsen, Erik 7F-5 , P5-C1-7
 Villagómez Hoyos, Carlos Armando.....2D-3, 4I-5, P1-A2-6, P1-B3-8
 Villanueva, Flordeliza S. 1H-3, P1-A3-2, P1-C10-6
 Villanueva, Luis Guillermo.....6A-3 , P4-B2-5
 Villemain, Olivier.....3B-1
 Vincenot, Jeremy.....1C-6
 Vinnicombe, Sarah 7D-2
 Vion, Jérémy1J-3
 Virupakshappa, Kushal 6F-2, P2B1-1, P2B1-2
 Viumdal, Håkon P2C2-2
 Vlaisavljevich, Eli 3A-3
 Vodovar, Dominique..... 1F-2
 Voigt, Jens-Uwe.....P1-C8-5
 Volatier, Alexandre 5D-4
 Volker, Arno.....P1-A9-11
 Von Ramm, Olaf T.....P1-C6-16
 Voorneveld, Jason 4A-2
 Vos, Hendrik J. 4A-2, 4J-3, 7F-1 , 7F-4 , P1-A4-13, P1-A9-11, PA-17
 Vray, Didier.....4J-1, P1-C7-5
 Vullings, RikP1-B9-1

W

Wada, Keiji.....P4-C2-8
 Wagle, Sanat.....P2C2-4
 Wagner, Karl 5D-2, 7H-2, P4-B1-1, P4-C2-3, PA-13
 Walker, AlanP5-B2-8
 Wallace, Kirk.....4G-6, P1-C4-11
 Wallace, Margeaux.....7B-4
 Wallaschek, Jörg P2B2-3
 Wallig, MatthewP1-C9-9
 Wan, Elaine.....5I-1, P1-A6-2
 Wan, Mingxi.....3B-3, 6C-6 , P1-A11-4, P1-A11-5, P1-A11-6, P1-A6-7, P1-B11-4, P1-B2-10, P1-B2-3, P1-C7-8, P3-C1-4
 Wan, Shanshan 3A-3
 Wang, BoyangP2A3-1, P2B1-3
 Wang, Chen.....5E-4
 Wang, Congzhi.....P1-A8-7
 Wang, Dafang5I-1
 Wang, Daniel..... 2F-5, PA-1
 Wang, Diya.....5I-3
 Wang, Han5H-2, 5H-4, 6K-1
 Wang, Hexuan3E-4
 Wang, Huaijun 3G-5, 3J-4
 Wang, James H.C.P4-B3-1
 Wang, JingyaoP1-B2-2

Wang, Junyi7D-1
 Wang, Kaiyue.....P1-B2-11, P1-B2-6
 Wang, L.J.P1-B11-8
 Wang, Max.....7D-4
 Wang, Pengzhi1H-2
 Wang, QiP5-C1-3
 Wang, Qing-Ming 2K-3, P2A3-6, P2B2-4, P4-B3-1, P5-C3-6, P5-C3-9
 Wang, Rui P1-A11-5, P1-A11-6
 Wang, Ruikang.....3D-2, P1-B5-1
 Wang, Shiyang.....3I-2, P1-A2-7, P1-A5-1
 Wang, Shutao1G-4, 2H-4, P1-C11-8
 Wang, Supin.....3B-3, P1-A11-4
 Wang, Tianfu2K-3, P1-C6-3
 Wang, Wen.....P4-B3-7
 Wang, Xiaobing.....1K-6
 Wang, XinP1-A11-4
 Wang, Xingyin P1-A8-7, P1-B9-7
 Wang, Xueding 1I-4, 4B-1, 4E-2, 4E-3, 5K-5, P1-A7-8
 Wang, Xueqiao.....P5-B1-7
 Wang, YahuaP1-A4-12
 Wang, Yak-Nam3A-5
 Wang, Yanjie 4F-6
 Wang, Yi-An.....P1-A8-2
 Wang, Yinchao.....6K-5 , P5-A3-1
 Wang, Yingxiao1H-2
 Wang, Youdong4D-4
 Wang, Yuchen.....P1-B2-11, P1-B2-6
 Wang, YuxiangP2A3-6, P2B2-4
 Wang, Yuxin5K-5
 Wang, ZhanP3-C1-3
 Wasa, KiyotakaP4-C1-2
 Watanabe, TomonoriP5-A2-3
 Watanabe, YoshiakiP1-B4-7
 Watkins, Ronald D7G-1
 Watkins, Simon.....1H-3
 Watson, David.....7D-2 , P5-B2-7
 Wattiez, Nicolas 1E-1
 Wear, Keith7D-5
 Webb, Jeremy.....3E-1, P1-C5-6
 Weber, Marcus7D-4
 Weber, MartinP1-B2-4
 Webersen, ManuelP2B2-1
 Wei, SiyuanP1-B1-4
 Wei, WeiP5-B1-4
 Wei, Zhong-HangP1-B7-1
 Weidling, Adam7C-2
 Weigel, RobertP4-A2-5, P4-B1-1, PA-13
 Weihnacht, ManfredP4-A1-6, P4-A2-2
 Weijers, Gert4C-3, P1-B10-3
 Weiwei, ShaoP3-C1-9
 Welling, Theodore3A-3
 Wells, Shane.....P1-C6-1, P1-C6-7
 Welsh, Aaron7B-4
 Wen, HuiyingP1-C6-3
 Wen, Xiao-Yan4D-4
 Wen, YumeiP4-B3-5, P4-C2-5
 Wenisch, Thomas F.P1-B1-4
 Wergin, Kelly.....P1-B5-7, P1-C6-1, P1-C6-7
 Westafer, Ryan.....P4-C2-2
 Whaley, Dana3E-1
 Wheatley, Margaret.....4G-1, P1-C10-7
 Whimsey, Lauren3F-5
 Whitehurst, DanielP1-C10-6
 Whitford, Margaret3F-5
 Wiaux, Yves.....P1-A9-1
 Wieja, KrzysztofP3-B1-6 , P3-B1-9
 Wigen, Morten4A-1
 Wijkstra, Hessel3D-5, 3H-2, P1-B10-5, P1-C4-12, P1-C4-6
 Wiklund, Johan5H-6
 Wilbrand, Stephanie.....3G-1, P1-A4-5, P1-A4-6
 Wilcox, Paul.....6C-2

Wildeboer, Rogier R..... 3D-5, P1-B10-5
 Wilke, Bernd..... 5G-5
 Wilkens, VolkerP1-B2-4
 Wilkes, AnninaP1-C4-11
 Willemsen, Balam 5D-6, 5F-4, P4-A2-4
 Willey, CarsonP2A1-4
 Willmann, Juergen..... 3G-5, 3J-1, 3J-4, P1-B10-2, P1-B6-2
 Willmann, Juergen K..... 2C-4, 3B-6
 Wilson, Brian C. 7B-5
 Windmill, JamesP2B1-7, P5-B2-8
 Winkles, Jeffrey1F-3
 Wirtzfeld, Lauren A.P1-A7-4
 Wise, Elliott5G-3
 Witek, BeataP5-A2-6
 Witte, Russell S. 1D-4, 1D-5, 2E-4, P1-B7-8
 Wodnicki, Robert..... 7A-2
 Wójcik, Janusz.....P3-A3-3 , P3-B1-10 , P3-B1-5
 Won, JonghoP1-C10-3
 Wong, Andrew W.....1I-1
 Wong, Dean4B-4
 Woo, Jeongdong7G-2
 Woo, Kaitlin M.2K-4
 Wood, CaylaP3-A1-2
 Woodacre, JeffreyP5-C2-2
 Woodworth, Graeme1F-3
 Worlikar, Tejaswi3A-3, 3A-6
 Wright, AlexP1-A3-4
 Wrobel, Matthias6F-6
 Wu, BinP3-A2-4
 Wu, ChenP1-C6-12
 Wu, Cheng-Han1K-3
 Wu, DaweiP2B2-5
 Wu, Denglong.....P1-A7-8
 Wu, Huaqing.....P1-A11-7
 Wu, Huaiyu.....6J-3 , 7G-5
 Wu, Huiyan.....P4-B3-1
 Wu, Jibing.....P5-A1-4, P5-A1-6
 Wu, Jing5D-1
 Wu, Sheng-Kai1K-5
 Wu, Shih-Ying.....P1-C10-5
 Wu, XiangP1-A1-1
 Wu, Xun7A-3 , 7F-2 , 7F-3 , PA-18

X

Xi, Yuyin5E-2
 Xia, Hansheng.....3J-3
 Xia, Jingjing1E-6, P1-A8-7
 Xia, Wenfeng.....P1-B8-2
 Xia, Xiangxiang6H-3
 Xiang, YanxunP2B2-2, P2C1-6
 Xiao, YangP1-A8-7
 Xie, HuaP1-A8-1
 Xiong, Fangyuan4C-1, P1-C10-8, P1-C4-1
 Xiong, MounaP1-C10-8
 Xu, Changting6B-2, P4-B2-2, P4-B2-6
 Xu, Di6H-3
 Xu, Guan.....4B-1, 4E-3, P1-A7-8
 Xu, Guisheng.....P5-C3-1
 Xu, Guo-Qiang5J-5
 Xu, JinglinP4-C2-7
 Xu, KeP2A2-4
 Xu, LinP1-A6-1, P1-B2-12
 Xu, RanxiangP1-A6-7
 Xu, Shanshan3B-3
 Xu, Yong.....6B-5
 Xu, Zhen 2E-4, 3A-1, 3A-3, 3A-6, 3B-2
 Xuan, Fu-ZhenP2B2-2, P2C1-6
 Xue, BoP3-B1-8
 Xue, ChenyangP5-C1-8

Y

129

Z

- Zacharias Millward, NikiP3-A1-2
 Zaitsev, Boris..... P2A2-1, P2A2-2
 Zderic, Vesna..... 1I-5, 1J-5, P1-C10-1, P1-C11-4
 Zemp, Roger6J-1 , 6J-6 , 7E-3, P1-A7-5, P1-C1-8, P5-B2-9
 Zemp, Roger J.P1-B7-5
 Zemzemi, ChadiP1-B5-11
 Zeng, Fan5C-5
 Zhang, Benfeng 5F-3, 7H-4, P4-A1-2, PA-14
 Zhang, BinzhenP5-C1-8
 Zhang, BofengP3-A3-5
 Zhang, ChenruiP4-B3-5
 Zhang, Daihua7C-6
 Zhang, EdwardP1-B8-2
 Zhang, Ge3K-5 , 4G-5
 Zhang, GuojunP5-C1-8
 Zhang, Haichong4B-4, 4E-5
 Zhang, HaiyanP2B2-2, P2C1-6
 Zhang, Hao7C-6
 Zhang, Haonan1I-4
 Zhang, HongxiangP3-C1-3
 Zhang, Hua1G-2, 3C-2
 Zhang, Jingchuan.....P3-B1-8
 Zhang, Jun2K-2, 6K-2
 Zhang, Lei.... 6C-6 , P1-A6-7, P1-B2-10, P1-B2-3, P2C1-2, P3-C1-4
 Zhang, LingluP1-A11-5
 Zhang, Lining P5-B1-2, P5-B1-5, P5-B1-6
 Zhang, Menglun7C-6
 Zhang, Miaomiao P1-A9-5, P1-B1-3
 Zhang, Pengpeng 2K-3
 Zhang, QiP1-B2-1
 Zhang, Rui7A-2 , P1-B2-2
 Zhang, Shengqi.....P3-B1-12
 Zhang, Shujun6I-1
 Zhang, Siyuan.....P1-A6-7, P1-B11-4
 Zhang, TianfuP5-B1-7
 Zhang, WendongP5-C1-8
 Zhang, Xiao 7A-3 , 7E-6, 7F-3 , P1-A1-1, P5-A1-3, PA-16
 Zhang, Xiaoming.....2K-6, P1-C6-15
 Zhang, Xinyu.....2K-3, P1-C6-3
 Zhang, YangP1-C5-7
 Zhang, Yiting.....P1-A3-6
 Zhang, Zhiqiang P5-B1-2, P5-B1-5, P5-B1-7
 Zhang, Zitian 5A-4
 Zhangjian, LiP3-C1-9
 Zhao, DanhuaP5-B2-2
 Zhao, Feifei2C-2
 Zhao, GuangyiP4-B3-1
 Zhao, Huixia 1F-4 , P1-C11-10
 Zhao, LuP3-C1-4
 Zhao, ShuoP4-B2-2
 Zhao, Xiaofeng 6A-5 , P1-A10-1
 Zhao, XupengP4-C2-5
 Zhen, Zhe.....5I-2
 Zheng, Hairong1E-6, 1F-4 , 1J-4, 1K-6, 2D-5, 5E-4, 6H-3 , P1-A8-7, P1-B2-1, P1-B2-11, P1-B2-6, P1-B9-7, P1-C11-10, P3-C1-8 , P5-B1-2, P5-B1-5, P5-B1-6
 Zheng, MingxinP1-C9-10, P1-C9-6
 Zheng, Shijun7C-6
 Zheng, WenlanP1-C10-5
 Zheng, Yingqiao 5K-5
 Zhgoon, Serguei7C-1
 Zhong, HuiP1-C7-8
 Zhou, Boran.....2K-6, P1-C6-15
 Zhou, Di.....P1-B2-3
 Zhou, JianP1-B1-4
 Zhou, Jianhua 3G-5
 Zhou, Qifa 2K-2, 6K-2 , 7A-2 , P1-A4-15, P1-C11-10, P1-C7-1, P5-B1-3, P5-B1-4, P5-B1-7, P5-C3-5
 Zhou, Wei1J-4, 2D-5, P1-B2-11, P1-B2-6, P3-C1-8
 Zhou, Xinhuan P1-C2-4
 Zhu, BenpengP5-B1-4
 Zhu, BotongP5-B2-8
 Zhu, JiaqiP1-C3-4
 Zhu, JiejunP1-B2-2
 Zhu, LifeiP1-B2-9
 Zhu, WujunP2B2-2, P2C1-6
 Zhu, XiuP5-C3-1
 Zhu, Yunhao.....4B-1, 5K-5
 Zhuang, BoP1-A1-5
 Zhuang, Steve.....P5-B2-2
 Ziemlewicz, TimothyP1-C6-1, P1-C6-7
 Ziemlewicz, Timothy JP1-B5-7
 Zimbico, AcácioP1-A9-2
 Zolek, NorbertP3-B1-10
 Zong, Richard.....P1-A3-7
 Zong, Yujin ..6C-6 , P1-B2-10, P1-B2-3, P1-C7-8, P3-C1-4
 Zorgani, Ali 1C-4, P1-B5-11
 Zou, Jie 7J-5, 7J-6
 Zu, HongfeiP4-B3-1
 Zurakhov, GrigoriyP1-C1-10

2017 IEEE INTERNATIONAL ULTRASONICS SYMPOSIUM

WASHINGTON DC, USA

SEPTEMBER 6-9, 2017



**IEEE ULTRASONICS, FERROELECTRICS,
AND FREQUENCY CONTROL SOCIETY**



Verasonics®