



THE PRINCETON-CENTRAL JERSEY SECTION  
THE INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS

*Annual Awards Dinner*

*June 13, 2007*

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**Keynote Speaker**

**Professor Alain L. Kornhauser, Ph.D**  
**Princeton University**

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**The Executive Committee would like to thank**

PRINCETON UNIVERSITY

*for their continued support of IEEE sponsored events including  
the use of the Prospect House this evening.*

*The Executive Committee would also like to thank*

PROFESSOR PETER RAMADGE  
Electrical Engineer Chair

*for his sponsorship and support*

LINEARIZER TECHNOLOGY, INC. & ANDREW ANASTASOPOULOS  
For providing us with the printed pamphlets for this evening.

## Guest Speaker



**Prof. Alain Kornhauser, Ph.D.  
Princeton University, Professor of Operations  
Research & Financial Engineering**

Dr. Kornhauser received his BS and MS in Aerospace engineering from Penn State and both an MA and a PhD in Aerospace and Mechanical Sciences from Princeton University.

He began his professional academic career at the University of Minnesota in 1971 as an Assistant Professor of Aerospace Engineering. Since 1972 Dr. Kornhauser has been a Professor of Operations Research & Financial Engineering at Princeton University where he also serves as Director of Transportation Research Program and Co-Director for the New Jersey Center for Transportation Information and Decision Engineering (NJ Tide).

Currently, Dr. Kornhauser is involved in several research interests, including optimization of Flows in Stochastic Networks: Computer Vision and Automatic Control of Vehicles and Design of Decision Support Systems for Individuals. He has been the co-editor of several books and has author of over 100 scholarly papers.

Dr. Kornhauser served as Team Leader for Princeton's entry, Prospect Eleven, in the 2005 DARPA Grand Challenge which earned a 10th seed and autonomously completed 9.5 miles, and as Team Leader for Princeton's entry in 2007 DARPA Urban Challenge.

In 1979, Dr. Kornhauser founded ALK Technologies, Inc. with wife Katherine who serves as President and CEO. Alain serves as Board Chairman. Son Michael manages its European subsidiary.

ALK designs and builds real-time customized decision systems for major transportation companies and develops, markets, maintains and supports transportation routing software and databases. It's brand products PC\*Rail, PC\*Miler and Fleet Center are leaders in the rail, motor carrier and logistics sectors. It also produces the CoPilot family of in-vehicle navigation systems for North America, Europe and Australia. CoPilot is a well recognized industry leader in portable route guidance systems winning numerous awards including the 2006 LBS (Location Based Services) Challenge Grand Prize. ALK employs over 150 professionals at its headquarters in Princeton, NJ and over 40 in its European headquarters in London with smaller offices in Paris, Munich and Taipei.

Dr. Kornhauser has finished 13 New York City Marathons.

## The Making of an Autonomous Vehicle

During the Past two years a dedicated group of Princeton Undergraduates have been modifying a standard vehicle to operate autonomously. While the ultimate goal is to have the vehicle be able to drive itself anywhere anytime, the development has been targeted to particular challenges associated with competitions organized by the Defense Advanced Research Programs Administration (DARPA). Professor Kornhauser will describe Princeton's activities with this project and its implications of cars of the future.



# THE IEEE FELLOW

By Dr. Irving Engelson, IEEE Region 1 Past Director

IEEE is the world's largest technical professional association of more than 350,000 members in 150 countries. Through its Members, the IEEE is a leading authority in technical areas ranging from computer engineering, biomedical technology and telecommunications, to electric power, aerospace and consumer electronics, among others. The grade of IEEE Fellow recognizes unusual distinction in the profession and is conferred only by invitation of the Board of Directors upon a person of outstanding and extraordinary qualifications and experience. To be invited and elected to this high honor, the prospective fellow has made important individual contributions to one more of the IEEE fields. Candidates must be Senior Members, which is the highest grade one may apply for. No more than 1/10 of one percent of the voting membership may be elected to fellow grade.

IEEE PRINCETON CENTRAL JERSEY SECTION  
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RECENTLY ELEVATED TO THE FELLOW GRADE

Dr. Naomi Ehrich Leonard

Dr. Thomas Richardson

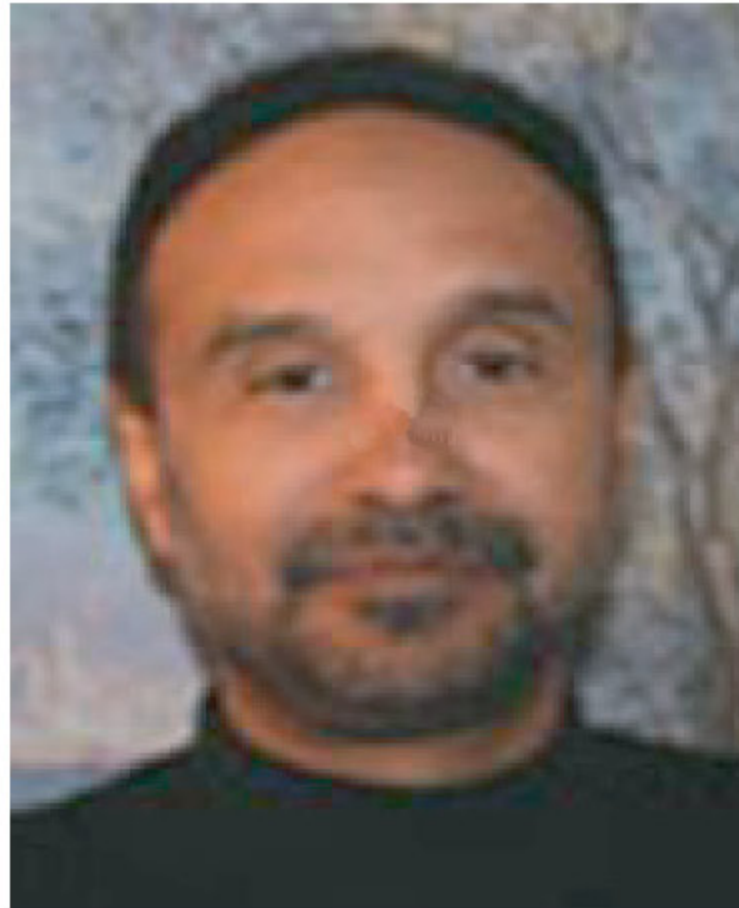
Dr. Christopher Rose

Dr. Ned Sauthoff

Dr. Venkataraman Swaminathan

## **Dr. Christopher Rose**

**For Contributions to Wireless Communication Systems**



Dr. Rose received the S.B. (1979), S.M. (1981) and Ph.D. (1985) degrees all from the Massachusetts Institute of Technology. Following graduate school, he joined AT&T Bell Laboratories in Holmdel, N.J. as a member of the Network Systems Research Dept. He is currently a Professor of Electrical & Computer Engineering at Rutgers University in New Jersey and an IEEE Fellow cited "for contributions to wireless communications systems theory. Dr. Rose has been an editor for the ACM Wireless Networks (WINET) journal, the IEEE Transactions on Vehicular Technology, and has served on numerous conference technical program committees. He was technical program co-chair for MobiCom'97, Co-chair of the WINLAB FOCUS'98 on the U-NII, the WINLAB/UC Berkeley FOCUS'99 on Radio Networks for Everything and the UC Berkeley/WINLAB Focus 2000 on Picoradio Networks. He has also served as an Associate Director of the Wireless Networks Laboratory (WINLAB) (1999-2007). A past member of the ACM SIGMobile Executive Committee, the ACM MobiCom Steering Committee, Dr. Rose has also served as General Chair of ACM SIGMobile MobiCom 2001 (Rome, July 2001). In December 1999 and 2003 he served on the international panels to evaluate engineering teaching and research in Portugal.

His current technical interests include novel mobile communications networks, applications of genetic algorithms to control problems in communications networks, and most recently, interference avoidance methods using universal radios to foster peaceful co-existence in what will be the wireless ecology of the 5GHz U-NII bands. This work, co-authored with Sennur Ulukus and Roy Yates received the 2003 IEEE Marconi Prize Paper Award in Wireless Communications. For fun, as an outgrowth of research on opportunistic communications, he is also considering the details of a problem everyone has wondered about at one time or another: how will our first extraterrestrial civilization contact occur? The interesting twist is that it can be FAR more efficient for distant "little green people" to send information bearing physical artifacts than electromagnetic signals -- seemingly at odds with current SETI wisdom. This work was featured on the cover of the September 2, 2004 issue of Nature.

## **Dr. Naomi Ehrich Leonard**

**For Contributions to the Control of Underwater Vehicles**



Naomi Ehrich Leonard is a Professor in the Department of Mechanical and Aerospace Engineering and associated faculty member of the program in applied and Computational Mathematics at Princeton University where she has been since 1994. In 2001 she was the Lise Meitner Guest Professor at Lund University, Sweden and in 2007 she is Visiting Professor at the University of Pisa, Italy. She received the B.S.E degree in mechanical engineering from Princeton University in 1985. From 1985 to 1989, she worked as an engineer in electric power industry for MPR Associates, Inc. She received the M.S and Ph.D. degrees in electrical engineering from the University of Maryland, College park, in 1991 and 1994.

Prof. Leonard's research is in nonlinear control and dynamics with current interests in cooperative control for multi-agent systems, mobile sensor networks, autonomous underwater vehicles, adaptive ocean sampling networks, and modeling and analysis of collective motion in animal aggregations such as fish schools. She received the Mohammed Dahleh Award (2005), John D. and Catherine T. MacArthur Foundation Fellowship (2004), Automatica Prize Paper Award (1999), ONR Young Investigator Award (1998) and NSF CAREER Award (1995). She has served as associate editor for Automatica and SIAM Journal on control and optimization.

## **Dr. Ned Sauthoff**

### **For Contributions to Plasma Physics and Fusion Energy**



Dr. Ned Sauthoff is a plasma physicist and project manager of the U.S. investment in ITER Project, and international partnership aimed at demonstrating the scientific and technological feasibility of fusion energy using magnetic confinement of plasmas. The U.S. contribution to this project represents \$1.1 billion dollars.

ITER - Latin for "the way" - is a large toroidal magnetic confinement device of the tokamak configuration, which is currently being built by the international partnership of China, the European Union, India, Japan, South Korea, the Russian Federation, and the United States. It will be sited in Cadarache, France. It is scheduled to become operational in 2016.

Prior to establishment of the U.S. ITER Project Office, which is hosted by Oak Ridge National Laboratory with partner labs Princeton Plasma Physics Laboratory. (PPPL) and Savannah River National Laboratory, Dr. Sauthoff led a sequence of PPPL projects in physics research, engineering management, project management, and research management.

A fellow of IEEE, the American Physical Society, and the American Association for the Advancement of Science, Dr. Sauthoff has dedicated over 22 years of his distinguished professional career to PPPL. His vast knowledge in the area of tokamak plasmas has earned him numerous positions in varied related areas of research.

In 2001, Dr. Sauthoff served as President of IEEE-USA.



## **Dr. Venkataraman Swaminathan**

**For contributions to the Field of Optic  
Electronic Materials, Devices and Systems**



Dr. Venkataraman (Swami) Swaminathan received his Ph.D. in Materials Science from The University of Southern California in 1975. After completing Post-Doctoral work at the Wright Patterson AFB, Dr. Swaminathan joined Bell Laboratories in Murray Hill, NJ. He worked at Bell Labs for 21 years and later at Agere (a Lucent spin-off) and Tri Quint Semi-conductors. During his tenure at Bells Labs, Dr. Swaminathan worked on semi-conductor lasers and systems for fiber optic communication. He held senior management positions at Lucent, Agere and TriQuint. Upon joining the Army Reserach Laboratory in May 2004 as the Chief of the IR Materials and Devices Branch, Dr.Swaminathan and his team were responsible for conducting research in the current and future needs of the US Army in infrared emitters and detectors. Since October 2006 he has worked as a Supervisory Physical Scientist at the US Army Armamnet Research and Development Center in Picatinny, NJ in the areas of Micro electronics and photonics. The author/co-author of more than 130 publications Dr. Swaminathan has been awarded five patents. He is the co-author of a popular textbook on Materials Aspect of GaAs and InP Based Structures. Dr. Swaminathan is a fellow IEEE and also the American Electrochemical Society.

## THE IEEE SENIOR MEMBER

The grade of Senior Member is the highest for which application may be made and shall require experience reflecting professional maturity. For admission or transfer to the grade of senior member, a candidate shall be an engineer, scientist, educator, technical executive, or originator in IEEE-designated Fields for a total of ten years.

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# THE IEEE LIFE MEMBER

The IEEE Life Members represent an invaluable repository of personal experiences involving the history of areas of interest to IEEE. An IEEE member must qualify for life member status. The member must have been a member of IEEE or one of its predecessor societies for such a period that the sum of his/her age and his/her years of membership equals or exceeds 100 years.

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H. E. Weinrich

## **Dr. Nirwan Ansari**

### **2007 OUTSTANDING LEADERSHIP AWARD**

**For Excellent Leadership as the  
General Co-Chair of the IEEE Sarnoff Symposium 2007**



Dr. Nirwan Ansari received the B.S.E.E. (summa cum laude) from the New Jersey Institute of Technology (NJIT), in 1982, the M.S.E.E. degree from The University of Michigan, in 1983, and the Ph.D. degree from Purdue University, in 1988.

He joined NJIT's Department of Electrical and Computer Engineering as an Assistant Professor in 1988, and has been a Full Professor since 1997. Dr. Ansari has been appointed Newark College of Engineering's Associate Dean for Research and Graduate Studies at NJIT. He authored *Computational Intelligence for Optimization* (Springer, 1997, translated into Chinese in 2000) with E.S.H. Hou, and edited *Neural Networks in Telecommunications* (Springer, 1994) with B. Yuhas. His current research focuses on various aspects of broadband networks and multimedia communications. He has also contributed to approximately 300 technical papers including over 100 refereed journal/magazine articles.

A Senior Technical Editor of the IEEE Communications Magazine, Dr. Ansari also serves on the editorial board of *Computer Communications*, the *ETRI Journal*, and the *Journal of Computing and Information Technology*. He was the founding general chair of the First IEEE International Conference on Information Technology: Research and Education (ITRE2003). During his tenure as Chapter Chair, the North Jersey Chapter of the IEEE Communications Society received the 1996 Chapter of the Year Award and a 2003 Chapter Achievement Award. Dr. Ansari has served as Chair of the IEEE North Jersey Section and in the IEEE Region 1 Board of Governors during 2001-2002, and continues to serve in various IEEE committees. His awards and recognitions include the NJIT Excellence Teaching Award in Graduate Instruction (1998), IEEE Region 1 Award (1999), and designation as an IEEE Communications Society Distinguished Lecturer.

## **Dr. Radu Balan**

### **2007 OUTSTANDING LEADERSHIP AWARD**

**For Excellent Leadership as the  
General Co-Chair of the IEEE Sarnoff Symposium 2007**



Dr. Balan received his BSEE (Control Theory) from Polytechnic Institute of Bucharest, a BS (Theoretical Physics) from the University of Bucharest in Romania and a Ph.D in applied Mathematics from Princeton University. After one year of post doctoral research at IBM T.J. Watson and IMA University of Minnesota, he joined Siemens Corporate Research in Princeton, N.J. where he currently is a Senior Research Scientist. Dr. Balan will join the University of Maryland at College Park as an Associate Professor in the Department of Mathematics beginning the Fall Semester 2007.

Dr. Balan's professional interests include: applied harmonic analysis (frames and Gabor analysis), signal processing (audio and speech, microphone array, blind source separation, sensor fusion), Classification Theory (SVM, kernel methods) and wireless networks modeling.

**Thr Princetoin Central Jersey Section  
The Institute of Electrical & Electronics Engineers  
2007 Section awards**

Radu Balan

**2007 Outstanding Excellent Leadership Award**

For excellent leadership as the General Co-Chair of the IEEE  
Sarnoff Symposium 2007

Nirwan Ansari

**2007 Outstanding Excellent Leadership Award**

For excellent leadership as the General Co-Chair of the IEEE  
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Mooi Choo Chuah

**2007 Outstanding Excellent Leadership Award**

For excellent leadership as the Program Co-Chair of the IEEE  
Sarnoff Symposium 2007

Shridhar Gollamudi

**2007 Outstanding Excellent Leadership Award**

For excellent leadership as the Program Co-Chair of the IEEE  
Sarnoff Symposium 2007

Usman Nasir

**2007 Outstanding Volunteer Award**

For excellent service as the Webmaster to  
IEEE Princeton Central Jersey Section

Teri Ulrich

**2007 Outstanding Volunteer Award**

For excellent service in the Electronic Communications  
to IEEE Princeton Central Jersey Section

Mike Kubak

**2007 Outstanding Volunteer Award**

For excellent service in the Electronic Communications  
to IEEE Princeton Central Jersey Section

Wieslaw Bury

**2007 Outstanding Volunteer Award**

For excellent leadership as the Finance Chair of  
Sarnoff Symposium 2007

Shalinee Kishore

**2007 OUTSTANDING VOLUNTEER AWARD**

For excellent leadership as Student Papers Chair Sarnoff Symposium 2007

Roberto Rojas-Cessa

**2007 OUTSTANDING VOLUNTEER AWARD**

For excellent leadership as Invited Papers Session Chair of Sarnoff Symposium 2007

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for excellent leadership as Industrial Panel Chair of The Sarnoff Symposium 2007

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**2007 OUTSTANDING VOLUNTEER AWARD**

for excellent leadership as Publicity Chair of Sarnoff Symposium 2007

Karen Patten

**2007 OUTSTANDING VOLUNTEER AWARD**

For excellent leadership as Publications Chair of Sarnoff Symposium 2007

Syed M. Ahmed

**2007 OUTSTANDING VOLUNTEER AWARD**

For excellent Leadership as Local Arrangements Chair of sarnoff Symposium 2007

Kyriakos Manousakis

**2007 OUTSTANDING VOLUNTEER AWARD**

For excellent leadership as Registration Chair of Sarnoff Symposium 2007

Dr. Iwan Santoso  
2007 IEEE Region I Award Recipient  
For Enhancement of IEEE in Industry, and Community Service



After receiving his PhD in Electrical Engineering from the Louisiana State University, Dr. Santoso has been working in R&D for more than 18 years. His experiences include technical-lead, project/program manager and R&D consultant in industrial, power and medical systems. He was with Siemens R&D prior to forming Predictive Diagnostic, LLC where he extended his many R&D roles to various companies. He is currently a faculty at DeVry University while continuing his function as lead R&D consultant. Dr. Santoso is the author/inventor of numerous papers and global patents. He is a senior member of the IEEE. He was the Power Engineering Society Chapter-Chair for many years, before joining the PCJ Section. He was the Section Chair in 2004-2005 and Exhibition Chair for IEEE Sarnoff 2007.