



Tariq Durrani,  
President IEEE EMS

## President's Corner

Tariq S. Durrani, President, IEEE EMS

Hello colleagues

Some interesting developments have taken place since I last penned this column. The Board of Governors of the IEEE Engineering Management Society met in Philadelphia on the last weekend of July; the Society's flagship event – the IEEE International Engineering Management Conference was held in Salvador, Brazil in September and the International Conference on Management Science and Engineering, technically cosponsored by EMS was held in Lille France.

The Board of Governors meeting was its usual mix of new and old business items. In addition to reports from the Society Vice-Presidents on their portfolios and on the activities undertaken in their areas, an item for discussion and debate was the 'transitioning' from a Society into an IEEE Council.

Over the last several years discussions have taken place within EMS on its role and on ways of how best it can serve the subject area and the wider community of IEEE Membership. While the society has served its members well in the last several decades, there is a growing realisation that the Society needs to pursue wider avenues for meeting the needs of the discipline and to serve the community of engineers, technologists, and engineering and technology managers. This was brought to a sharper focus when a recent survey of IEEE members identified that if funds were no object, they would like to pursue activities related to engineering management as their highest priority, after their technical requirements were met in the areas of Computers, Communications and

Circuits & Systems – I recall that I had mentioned this survey in my last message.

The Society leadership felt that the most obvious way in which this pent up demand could be met, and at the same time effective service could be provided for the growth and success of the subject area – was to consider converting the Society into a Management Council. The benefits of such a transition range from offering access to all IEEE members, the services of the Society currently enjoyed exclusively by the society members; to the ready availability of society publications to a wider community of engineers and technologists.

As the world business and management environment continues to change, and as global technological competition intensifies, proffering new challenges; to respond to these, technology professionals or managers are required to develop new skill sets. There is an ever growing need for the replenishment of our core competencies, and the nurturing of our management potential and capabilities. To this effect new vehicles are required to meet these emerging demands. It is the view of your Board of Governors that a Management Council represents such a vehicle that would open up new perspectives and services to IEEE members.

At present the proposal for transitioning into a Management Council is going through the various committees of the IEEE Technical Activities Board, and once this journey has been progressed, and further information will be available for members in due course.

The Board of Governors was particularly pleased to receive the Report on Conferences, and to learn of plans to hold the 2007 International Engineering Management Conference – IEMC 2007 - in the Hyatt Regency resort of Los Pines in Austin Texas; while IEMC-2008 is set for Adelaide Australia.



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Charles Rubenstein, Vice-President for Conferences also informed the Board of a proposal to organise an Engineering Management track in the IEEE Communications Society's flagship Conference – International Conference on Communications ICC-2008 which will be held in Beijing, China in May 2008.

Charles Rubenstein also presented the updated EMS governance documents. In view of the work on transitioning to a Management Council, the documents would require further revision, and would be presented to the membership in due course.

Celia Desmond, VP for Membership brought the attention of the Governors the work of her adhoc Membership Committee that has identified a number of items for Membership Development. These will be prioritised and strategies developed to progress matters.

The passing of that great and good man – Peter Drucker- was marked by a recent issue of the Engineering Management Review- aptly titled 'Salute to Peter Drucker', which is well worth

reading. Wade Shaw, the Editor of the Review, has put together personal vignettes that provide an insight into Drucker's work and its impact.

In September I attended the Society's keynote conference in Salvador Bahia in Brazil – a most exotic location. The conference was enjoyed by all-through technical interaction and the social ambience. More information on the event is available in articles included in this issue of the Newsletter. I would like to take this opportunity to express the Society's appreciation of the effort put in by Antonio Bastos the General Chair of IEMC-2006, ably assisted by his enthusiastic local Organising Committee. We owe all these volunteers an immense depth of gratitude for their hard work and selfless devotion in ensuring a very successful Conference.

In early October, Past President Irv Engelson and I attended the International Conference on Management Science and Engineering (ICMSE) organised by the Harbin Institute of Technology, China, and hosted by the University of Lille, France, in the chique French town

of Lille. EMS is a technical co-sponsor of the event. It was good to observe a sizeable delegation from Harbin attending the conference, and presenting an impressive collection of papers. We were particularly impressed by the quality of the conference proceedings, and the highly advanced level of papers included there. The Proceedings were printed in three hard-bound volumes, meticulously produced and immaculately presented. It was particularly noteworthy that the papers were included in the proceedings, after a rigorous review process where only one in four was accepted – a remarkable ratio.

## Congratulations

Past EMS President Dr. Irving Engelson was honored by the IEEE Systems, Man, and Cybernetics Society (SMC) with their "Outstanding Contribution Award." The award was presented on 10 October 2006 at a Banquet in Taipei, Taiwan and has the citation: "For outstanding contributions to and leadership of the 2004-2005 SMC Strategic Planning Task Force"

## Smile, You're in Bahia, Brazil! - Impressions From IEMC 2006

*Sheila Forbes  
University of Strathclyde, Glasgow*

On arrival at Salvador Airport in Bahia, one senses the happiness and warmth of the Bahian people. 'Smile, you're in Bahia!' the motto of Bahia, and Salvador - 'the land of happiness' rings true. From September 17-19 2006, Salvador played host to IEMC 2006, the IEEE International Engineering Management Conference - the first occasion that IEMC has been hosted by the IEEE Latin America Region 9.

The overall Conference theme was "The Human-Technology Interface", and the technical programme included three keynote presentations, five invit-

ed lectures, over one hundred technical papers, as well as four pre-conference tutorial sessions. The attendees, from twenty-three countries, were all active members of the profession with a strong interest in Engineering Management.

Sunday 17 September was Conference Registration and Tutorial Day. The latter included a one-day tutorial on "Beyond the Project Manager - High Performing Teams" (D Hancock, Halcrow Group Limited), as well as half-day sessions on the topics "Re-engineering the Technology Acquisition Process for Product and Process Del-

opment" (T S Durrani and S Forbes, University of Strathclyde), "Building an Effective Organization" (L Martinich, Competitive Focus), and "Maintaining and Motivating Yourself: a Strategy for Enjoying Self-Development" (A Bainbridge, UK Institute for Engineering and Technology).

The Conference proceedings began that evening with a Welcome Reception. The General Chair, Dr Antonio Carlos Bastos, gave a brief Welcome Address on behalf of the Local Organising Committee. This was followed by the EMS Awards Ceremony, where awards were presented to the great and

the good. This year was no exception, and the awards presented at the event included the 2005 Engineering Manager of the Year, the Best Paper Award, and the Best Article in IEEE-TEM.

Dr Bastos then introduced Professor Francisco Senna, a local historian, who gave an engaging and informative presentation on 'Salvador, the Capital of Portuguese America' - the history and heritage of Salvador and its people, which was enjoyed by all. The evening concluded with a very pleasant outdoor drinks reception by the hotel swimming pool.

The Opening Ceremony on Monday 18 September included presentations by Antonio Bastos, and other dignitaries. The programme got off to a lively start with a Keynote Presentation by Celia Desmond, the IEEE Vice President, Technical Activities, on "Trends in the Telecommunications Industry", where Celia covered the emergence of the industry after the set back in earlier years of the Century, gave a wide ranging review of the current state of telecommunications technology and industry, and identified new directions and future opportunities.

The afternoon session commenced with a selection of invited speakers, including Leslie Martinich, David Hancock, and Ketan Karanjape, who spoke on issues in human resource management. The invited talks covered projects and project environments in different areas of engineering, include power and communications. These led to many interesting discussions out with the technical sessions.

After an interesting and invigorating day, attendees had a free evening to explore Salvador and sample Brazilian cuisine and local refreshments at their leisure.

The first keynote presentation on Tuesday 19 September was by Joao Paulo Aguiar, CHESF Engineer, and Coordinator for Hydro Resources and Social Responsibility, who spoke on the Sao



*From left to right - Moacyr Tres de Costa Dora, Publication Chair; Anthony Bainridge, Program co-chair; Luis Pilotto, Region 9 Director, Antonio Bastos, Conference General Chair; Tariq Durrani, EMS President, Charles Rubenstein, EMS Vice-President Conferences*

Francisco River – Water Transposition, Revitalization Project. This presentation was given in Portuguese, and introduced the non-Portuguese speakers to simultaneous translation – a first for IEMC. The presentation covered developments over the last several years, and addressed the challenges - technical, managerial and political - that had to be addressed to revitalise the river and its environs.

The afternoon session offered a choice of invited speakers including Anthony Bainbridge of the UK Institute for Engineering and Technology, and Durval Olivieri, the Environment and Hydro Resources Secretary for the Government of Bahia State.

The final keynote presentation of the day was given by Dr Haroldo Borges Rodrigues Lima, General Director, Petroleum National Agency - ANP on Self Sufficiency and Basic Indexes of the Oil Sector in Brazil. This talk, again presented in Portuguese, gave a detailed and objective picture of the thriving oil sector within Brazil and the future plans for the energy sector, including issues of renewables, use of alcohol and bio-diesels, all aimed at self sufficiency. The talk was followed by an extensive and informative question and answer

session. A most fitting end to a successful Conference.

Each day covered three parallel sessions that addressed a range of topics including: aspects of organizational development and high performance teams, knowledge management and knowledge transfer, sustainability and globalization, leadership development, human machine interfaces, quality management indicators, project/process management, risk management, and educational issues and curricular development. This list is not exhaustive, and is aimed at giving a flavour of the Conference.

The social programme concluded with the Conference Banquet, which offered an opportunity for networking, and for meeting friends and making new acquaintances. The audience were entertained by Brazilian music and authentic Brazilian dancing - the capoeira and the samba - a marvelous show that had most of the participants up and dancing with the amazing performers.

The overall conference venue, which was a beautiful coastal hotel, was excellent. During breaks, it was a delight to

look out across the Atlantic Ocean while having powwow sessions over coffee. Lunch offered typical Brazilian cuisine, served in a restaurant again overlooking the Ocean. The fairly compact location in which the sessions and meals were held, allowed everyone who attended an opportunity to meet almost every other attendee, and time to discuss management issues.

The IEEE Engineering Management Society booth attracted great interest from IEEE members and non-members alike. There was much interest in the technical publications displayed, as

there was in the IEEE candies and ball-point pens! Hopefully non-members were enlightened to the benefits of IEEE membership.

Special thanks are due to Antonio Bastos for his leadership and oversight, Leizer Schnitman and Anthony Bainbridge for putting together a comprehensive conference programme, as well as Dr Luiz Pilotto, Regional Director of IEEE Latin America Region 9, and Dr Moacyr Tres de Costa Doria, Chair of IEEE Bahia Section, who in collaboration with the Engineering Management Chapter Chair, Dr Antonio Bas-

tos, the EMS VP-Conferences, Professor Charles Rubenstein, and the Local Organising Committee, worked industriously to make IEMC 2006 a memorable Conference, and visiting Salvador an exciting overall experience.

Finally, please watch the EMC website for some photographs taken at IEMC 2006, as well as for links to information about up and coming conferences. Next year IEMC 2007 will be held in Austin, Texas, USA, from July 15-18 2007, followed by IEMC 2008 in Adelaide, South Australia, in the Fall of 2008.

## IEMC 2006 - Participation

*Antonio C. Bastos, IEMC 2006 Conference Chair*

Prof. Leizer Schnitman, 2006 EMS International Engineering Management Conference is pleased to report that 174 papers were submitted by April 18th, from authors in 26 countries. Considering that full paper review was required, the 50 international IEMC 2006 reviewers did an excellent job; finishing the entire review process by May 30. The reviewers agreed to accept 141 (81%) articles for presentation and to reject 33 papers (19%). The table following this article shows the paper distribution by country.

With the 141 accepted papers some authors, regrettably we not able to attend. Submission followed by acceptance and unfortunately with no registration and/or attendance presents considerable difficulty to conference organizers. In addition, presenters who submitted, and for whom space did not permit presentation could have been given the opportunity to share their information with their engineering management colleagues. As a consequence adjustments had to be made at the last minute to the scheduled program. The Program Committee decided to reorganize the technical program so that the previously scheduled sessions 6 and 7 were canceled. Their

respective papers were rescheduled for Monday afternoon or Tuesday.

At the closing session of the 2006 IEMC, on September 19, speaking on behalf of the Program Committee, Anthony Bainbridge, the UK IET representative and IEMC 2006 Program

### Papers Statistics by Country

N	Country	Papers Received	Papers accepted	Registered
1	China	94	78	50
2	Brazil	18	14	11
3	USA	17	13	11
4	South Africa	6	5	5
5	India	5	3	2
6	Thailand	4	2	1
7	Unit Kingdom	4	4	4
8	Australia	3	3	3
9	Mexico	3	3	3
10	Italy	2	2	0
11	Japan	2	2	1
12	Switzerland	2	1	1
13	Argentina	1	0	0
14	Belgium	1	1	1
15	Canada	1	1	1
16	Chile	1	0	0
17	Finland	1	1	1
18	Germany	1	1	1
19	Greece	1	1	1
20	Malaysia	1	0	0
21	Netherlands	1	1	1
22	Pakistan	1	1	0
23	Portugal	1	1	1
24	Saudi Arabia	1	1	0
25	Sweden	1	1	1
26	Venezuela	1	1	1
	TOTAL	174	141	101

Committee co-Chair stated:

“We have had, I think you will agree, a good conference this year. We had a wide range of papers in three categories: reporting the outcome of research, or surveying a sector of business, or presenting new and useful tools for managers in many different contexts. As I have moved around between sessions I have listened to a range of excellent presentations and absorbing discussions. Chairs have controlled their sessions well, and speakers have been in command of their material.”

The conference facilitated networking and professional growth which was been valued and appreciated by all. Participation in IEEE conferences is an important and necessary factor for career success in today's business world.

The cultural diversity shown by the range of countries represented this year is a real strength from which we all benefit. I have been approached by many delegates to say that they appreciated the excellence and the mood at this year's conference. Congratulations to all involved in another successful Engineering Management Society IEMC event.

# The IEEE Engineering Management Society Announces 19th Annual IEMC 2007

July 29 to August 1, 2007

Managing Creativity

## CALL FOR PAPERS

Come to Central Texas where the stars are bright ---to hear the latest about leadership for human creativity that drives technological change and economic development—and see the beautiful Texas Hill Country. The IEEE Engineering Management Society will hold its prestigious International Engineering Management Conference in Austin, Texas USA.

Please email your proposal or letter of intent to participate as soon as possible to: [ProgramChair@iemc07.org](mailto:ProgramChair@iemc07.org)

### Conference Website:

<http://www.iemc07.org>

**Location:** Hyatt Lost Pines Resort and Spa, Bastrop (Austin), Texas USA  
<http://lostpines.hyatt.com/hyatt/hotels/index.jsp>

CEUs and PDUs will be provided for attendees and speakers

**General Chair:** Professor Anthony Ambler

### Important Dates:

**January 31 2007:** Proposals for papers, panels, special sessions, poster sessions and

workshops (with topic designations).

**February 28:** Feedback on Proposals will be provided.

**April 16:** Submission of completed papers.

**May 15:** Acceptance/rejection notification.

**June 15:** Deadline for camera ready papers and author pre-registration.

### CoSponsors

IEEE Central Texas Section  
IEEE Region V

### Technical Co-Sponsors

IET  
The University of Texas at Austin

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## International Conference on Management Science and Engineering 2007

Call for Papers

August, 20-22, 2007 - Harbin Institute of Technology, China

Organized by the Harbin Institute of Technology, P.R. China and with the engineering Management Society of the IEEE as Technical Co-Sponsor.

Paper Submission Deadline April 10, 2007

Notification of Acceptance June 10, 2007

Visit the ICSME-2007 Website at <http://ICMSE.hit.edu.cn> for full instructions and additional information.

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## Networking: The Sine Qua Non of Job Search Success

Debra Feldman

Without a doubt networking is indispensable for positive campaign results. Networking is the sine qua non of job search success. In fact, research confirms that the vast majority of new executive hires, over 80% still result from personal connections.

We're human. We can't resist the temptation of a big pay off. We enjoy a calculat-

ed risk. We like going for good odds. Thus, when it comes to our livelihood, financial security and future careers, networking purposefully to find a new challenge should be the favored method, even if it takes more personal effort than clicks (online jobsites) and licks (direct mail.)

Although submitting resumes online, notifying recruiters via fax resume blasts and direct mail campaigns

including broadcast emails can generate employer interest, it is personal networking that produces the most viable job leads and the lifelong relationships that make investing the time to nurture the right connections pay off. Just look back through your own career history or ask colleagues how they got their last position. Playing the odds in the job hunter's favor means emphasizing networking activities

over all other, even easier, job search methods. Expand your network, work those contacts harder and the odds are you'll produce a new opportunity faster than using any other approach.

Despite the volume being far greater through blasts and mailings and online clicks, personal connections generate more offers. Direct mail campaigns distributing your marketing documents produce minimal results, at best. Calculate the cost of paper, stamps and labor involved plus the loss for returns and it gets pricey. Then, there's the added uncertainty of not knowing whether anyone actually bothered to evaluate your materials, if they got into the right hands to make a personal connection. And only such interactions between individuals produce job offers.

Contrast this to establishing a warm personal relationship with someone you target as a good networking resource and the likelihood of getting additional referrals and/or an immediate job lead dramatically favors purposeful networking as the job search method of choice, especially for senior level professionals. Using purposeful networking, it's possible to achieve over 100% responses from each networking encounter. That's more than one referral for each and every contact since many of the individuals you meet or speak with or email will offer to help personally as well as give you the names of additional networking contacts. Very quickly, your network builds exponentially increasing the number of people aware of your qualifications and connected by one or more degrees of separation. At the executive level, hiring managers are much more comfortable hiring a friend of a friend than selecting their next leader from a bunch of resumes representing unknown prospects.

How to start a networking-driven job search? First identify with whom to connect (your target employers) and then define how best to command attention and get the desirable response (invitation to meet.) Purposefully networking that focuses on a few highly selected contacts with potential provides

a greater probability for uncovering new career opportunities that match the candidate's requirements. If you keep expanding your network while maintaining existing relationships, then when it comes time to seek a new opportunity, you'll already have many appropriate and valuable connections to insider tips, leads and information.

Follow these purposeful networking strategies for the Sine Qua Non of job search success.

Establish a specific reason or focus for each networking interaction. Know what this contact can do to further your campaign progress and politely ask for help. Sure doctors, lawyers, Indian chiefs and barbers might all know someone, but the membership chair of the local chamber of commerce knows even more people who might be helpful.

Strategically focus networking activity to concentrate on individuals positioned to bring more connections or get you closer to the individual(s) you want to know about your qualifications. If someone works at your target employer or is the roommate of someone who is employed there, these are both excellent ways to get inside an organization.

Target networking to get connected to individuals (network purposefully) that are well connected because this will exponentially increase your networking depth and reach. Certain people have a knack for attracting others (They are hubs.) and have a robust network in place. There are also individuals who are key contacts to engage because their status makes them extremely well connected and able to open doors for you.

Be persistent. If you believe a contact is beneficial and are having difficulty reaching them, don't easily give up trying to get their attention. Identify someone who might be able to arrange an introduction rather than cold calling. Keep a tickler file and periodically make contact. Do something outrageous, but professional, to capture their attention and start

a dialogue. (Find something to compliment- always a good way to break the ice and start a friendly exchange.)

List everyone you have ever known that you admire and respect. Seek them out and let them know what your career objectives are at this time. If they ever liked you, chances are they will be happy to help, offer advice and provide support.

Do something that provides the opportunity for you to promote yourself in a way that doesn't shout, "I need a job! Hire me!" For example, publish an article that you can circulate. This put you in front of others without having to send a message saying outright that you are job hunting and need their help. When they contact you to congratulate you is the time to make them aware that you are open to new opportunities.

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*Debra Feldman is a nationally-recognized expert who designs and personally implements swift, strategic, and customized senior level executive job search campaigns, banishing barriers that prevent immediate success. Her gift for cold calling - executed with high energy and savvy panache - connects candidates directly to decision makers, not HR. Network Purposefully™ with the JobWhiz, and compress your job search into mere weeks, using groundbreaking techniques profiled in Forbes magazine.*

*In addition to writing columns and conducting workshops for the AICPA, IEEE, Financial Executives International (FEI), Marketing Executives Networking Group (MENG), Financial Executives Networking Group (FENG), Technology Executives Networking Group (TENG), and Harvard Business School alumni, Debra is endorsed by NetShare, BlueSteps and ConstructionExecutive. The career officers at several top tier colleges and universities also recommend her. Contact Debra at [www.JobWhiz.com](http://www.JobWhiz.com) to expedite your executive ascent!*

# Sally Ride Science

by Sue Dorward

In early October, I had the privilege of hearing former US astronaut Sally Ride speak at the Grace Hopper Celebration of Women in Computing Conference. This conference was co-presented by the Anita Borg Institute for Women and Technology and the ACM, and was sponsored by leading technology companies, universities, and the National Science Foundation. After showing us the obligatory, breathtaking photos taken on her two space shuttle flights in the 1980s, Ride focused on the gloomy statistics surrounding the future of engineering: young people today are increasingly choosing not to study engineering, and we are facing a significant talent shortage.

Ride, who has a PhD in Physics from Stanford, is currently on leave from University of California San Diego. In 2001, she founded Sally Ride Science, an organization that works to increase girls' interest and involvement in the sciences. They run Saturday science events on campuses across the US, where they provide hands-on activities and informational booklets about science careers for girls and their parents. The events often attract over 1,000 girls.

## Encouraging Girls in Science

Given Ride's experience as the first female US astronaut, it is hardly surprising that she has chosen to encourage girls in science. In her talk and on her web site ([sallyridescience.com](http://sallyridescience.com)), she gives some startling US-centric statistics that support the need for her work:

- In 2000, 8 of the 10 fastest growing occupations were in science, math, or technology.
- A 2000 US national commission report stated that colleges needed to produce four times the number of computer science graduates to meet demand. (The bubble has burst since then, but certainly this has not reduced demand by a factor of

four.) Meanwhile the supply of graduates dropped 40% between 2000 and 2004.

- A 2000 US Congressional report stated that if the number of women in IT were equal to that of men, this would take care of the shortage of IT professionals.
- In 2004, 11% of engineers were women, up from less than 1% in 1970. 20% of IT professionals were women. 20% of engineering PhDs and 25% of computer science and math PhDs went to women. This represents enormous progress since 1970, but there is still a lot of room to get more women into these fields.
- The only field to lose ground is computer science, which has a lower percentage of women earning bachelor degrees now than twenty years ago (22% in 2005, down from a peak of 37%). Signs point to a continuation of this downward trend, with only 17% of the 2005 computer science A Advanced Placement test-takers being girls. The gender gap for the harder computer science AB exam was the largest of all disciplines, with only 10% girl test-takers. (For comparison, the next-largest gender gap was for the electricity and magnetism physics exam, which had 23% girl test-takers.)

Ride noted that little kids love science, but somewhere along the line, "we beat it out of them." The impact is greater on girls than boys.

- A 1996 US Department of Education study examined children's attitudes towards science, and found that while 68% of boys and 66% of girls like science in 4th grade, these numbers decrease to 56% and 48% respectively by 12th grade. The study also found that 49% of boys and 41% of girls say that they are good at science in 4th grade, and

these numbers decrease to 45% and 33% respectively by 12th grade.

- The same study examined children's attitudes towards math, and found that while 69% of boys and 70% of girls like math in 4th grade, these numbers decrease to 56% and 48% respectively by 12th grade. The study also found that 70% of boys and 61% of girls say that they are good at math in 4th grade, and these numbers decrease to 59% and 47% respectively by 12th grade.
- Children start losing interest in math and science in middle school (5th to 8th grades). A 2000 US Congressional report states that 8th grade girls and boys perform the same in math. Nonetheless, 8th grade boys are more likely than 8th grade girls to like math (58% versus 53%) and say that they are good at math (68% versus 59%), according to the 1996 study mentioned above.
- Girls who are well prepared in math and science nonetheless choose careers in those fields in disproportionately lower numbers than boys do.
- The gender discrepancy is due to a variety of factors, including image, role models, and parental support.

## Another Sputnik?

Ride recalled the early days of the space program, particularly 1957 when Sputnik launched. Space travel captured the world's imagination, and international competition fostered a sense of urgency and national pride. Today we need another Sputnik, she said, something to galvanize us and revitalize our interest in science and engineering. Ideally, that something would interest girls as well as boys.

Ride spoke briefly about the future of space exploration. NASA will be retiring the space shuttle in 2010. By 2018, their focus will return to going back to the moon. This will require a lot of design, simulation, and communication

work. We will need larger data streams to support space probes and Mars rovers, something she referred to as an "interplanetary Internet." Will one of these initiatives be the next Sputnik that she is hoping will make science and engineering "cool" again?

### A Global Talent Shortage

Ride mentioned that the US is producing fewer scientists and engineers than other countries, particularly China and India. That is perhaps cause for alarm, but according to a special report in *The Economist*, ("The search for talent: Why it's getting harder to find", 15 pages, October 7, 2006.) finding enough qualified talent is a global problem. China and India's IT sectors are experiencing double-digit

wage inflation, turnover reaching 40%, and a dearth of qualified managers. The Chinese also face the additional hurdles of language and cultural skills. According to the report, "China may have twice as many engineering graduates as America, but only 10% of them are equipped to work for a Western multinational." With China's one child policy, and baby boomer retirements having a larger impact on Europe and Japan than the US, the talent shortage is expected to worsen globally.

So if we look at the talent race like the race to the moon — which countries will win, which will lose — the US is not out of it yet. However, in today's global business environment, does it make sense to focus on one country

versus another? As *The Economist* report points out, "America does not become less competitive because China invests more in science: indeed, outside highly proprietary areas, Chinese investment in science will help to advance scientific knowledge in general."

Which leads me to wonder, is Sally Ride Science planning any events outside the US? We need as many bright and talented engineers as we can get!

Sue Dorward, a tech management coach who coaches high-potential employees, spoke about "Coaching Geeks" at the Grace Hopper conference, immediately after Sally Ride's keynote. She is based in New Jersey and can be reached at [sue@sudocoaching.com](mailto:sue@sudocoaching.com).

## Training for New Engineering Managers

Leslie Martinich

VP Publications, Engineering Management Society

Over the last year, Professor Anthony Ambler (an IEEE Fellow and member of EMS) and I conducted several focus groups to understand the needs of engineering companies with respect to their new engineering managers. Their message was clear. Recently appointed engineering managers lack the business skills and interpersonal skills necessary to successfully deliver their engineering projects. They are well-trained as engineers, but they are not receiving the training they need to succeed as managers.

In my own work, I have seen this to be true on a global scale. I have seen the problems that result in China, India, Australia, Canada, Europe and the United States. Projects fail, not because of engineering challenges, but because engineering managers lack communication, collaboration, negotiation and business alignment skills.

To address this need, we have created

the Engineering Leadership Institute (ELI), through the Center for Lifelong Engineering Education at the University of Texas at Austin. The Engineering Leadership Institute provides training anywhere in the world to build the skills of people on track to become managers or those who have already become managers.

Participation in ELI is determined by recommendation from an individual's manager. It is an honor to be chosen to attend this program, which includes an initial week-long intensive training, followed by three follow up programs over a two year period, to hone leaders' skills as they advance in their careers. Companies that choose to send individuals to ELI recognize that they are making an investment in their engineering managers; those who have attended this program report that it provides immediate returns on that investment, with skills that the participants use as soon as they are back at work.

Among the competencies mentioned by the focus group participants were:

- Managing collaborative relationships across the organization
- Gaining support for your ideas and projects
- Improving communication skills
- Building high performance teams
- Improving your outcomes through the use of practical negotiation skills
- Managing conflict
- Managing risk
- Acquiring tools for strategic planning and building a roadmap for your department
- Understanding the dynamics of managing innovative projects

The ELI program provides training in each of these skills. We are encouraged by the results and hope to see measurable improvements in the success of those who complete the program.

# Our EMS Case Study Project: Taking on the Mantle of Professional Leadership

Gus Gaynor, EMS Executive Vice President  
Terrance Malkinson, Chairman EMS Case Study Project

We've all heard the comment at one time or another about a colleague being referred to as a real pro. Pursuing an MBA or advanced degrees in Engineering Management or Technology Management won't necessarily give you the distinction of becoming that real pro. These educational activities may help but there's more. You won't find what it takes to be a real pro by taking a course.

Becoming a real pro comes to those who have somehow integrated many different qualities and characteristics. Chances are that the real pro may have had some excellent mentors along the way. These mentors could have come from all walks of life and from many different associations.

Taking on the mantle of professional leadership should be a goal of every technical professional as well as those managing their activities. Wasn't that really your aspiration? Technical competency alone no longer provides a clear path to lifetime career satisfaction.

Much of what it takes to provide professional leadership can come from the classic case study approach. What can we learn both good and bad from other's experiences? And, here's where you come into the act. We need your help and at the same time this effort may help you achieve your personal career aspirations.

About a year ago EMS began a project of collecting case studies that deal with both the technology professionals and their managers. Just think, every EMS member has had experiences that can help others develop their careers. So, here's what it takes to look back at your career and think about an incident that created either a positive or negative result.

## Writing the Case?

Select an experience that provided you

with some insight, as a manager or technology professional. And just tell us about it. Write it as though you were reporting the situation as it occurred. If your case is accepted, we'll provide a professional case-study writer to develop your case proposal as a teaching tool. What did you learn from this situation that you describe? What was the impact on your organizational unit? What did you do as a result of this experience? I think you get the idea of what's involved. Take a look at the following guide and scan your memory for those lessons learned.

## Guide to Writing Case Studies

Here are few points to consider in reporting on a particular situation. There are no mysteries in developing the basic narrative. Just think about that past experience as a technology professional or as a manager and tell the story.

- 1) Think of a situation which you observed or were a part of, that had an impact on the organizational unit or team goals \_ negative or positive impact on your performance and / or the group
- 2) What were the conditions that led to the situation? Who were the people involved (do not use organizational or names of participants)? What caused them to respond as they did? Did any one take a leadership role and try to resolve the issue? How did the participants communicate? What role did you play in resolving the situation?
- 3) What did you learn from being involved in or having witnessed this situation? Identify both the positive and negative learning that will be of value to other managers of discipline professionals.
- 4) Consider what might have been done differently? What path did this group take to resolve the issue?

- 5) How would you have responded at the time this situation occurred if you had more experience as a manager?

A further source of information to assist you can be found at the following website:

<http://college.hmco.com/business/resources/casestudies/students/swif.pdf>

Your Case Study Leadership Team welcomes any questions that you might have and invites you to participate as a provider of a case. We are here to help you in any way that you might need.

A selection of titles of titles received include:

- A Case Study of Crisis Project Management on a Space Shuttle Technology Demonstration Project.
- Learning Objectives for Meeting New Challenges
- Encouraging Collaboration in Emerging/Transitioning Opportunities
- 3rd Generation Command and Control Communications Systems
- Innovation And Entrepreneurship
- Collaborative Process Reengineering for Reverse Logistics
- Virtual Manufacturing – New Business Strategy For Manufacturing Companies of The Twenty-First Century
- How Effective Communication Saved Many Months of Wasted Efforts
- Evolutionary Acquisition in Submarine Combat System: A Software Management Victory
- Long-Term University-Industry Alliance/ Technology Strategy
- Innovation in a University Environment

Please take the time to consider creating a case to share with your colleagues. Participation is good for your career and good for the profession. Please do not be held back because you are not an experienced writer or do not feel that your

experiences are important. Everyone has a wealth of experience that they wish to share with others. The

case study team is here to support and help you with your idea. You are also welcome to join the case

study leadership team. We are a friendly group and would welcome your participation.

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## Call for Award Nominations

For nearly a century, the IEEE Awards program has paid tribute to technical professionals whose exceptional achievements and outstanding contributions have made a lasting impact on technology, society and the engineering profession. The Awards program honors achievements in education, industry, research and service. Each award has a unique mission and criteria, and offers the opportunity to honor distinguished colleagues, inspiring teachers and corporate leaders. Check out the IEEE awards home page for comprehensive information on the awards program. <http://www.ieee.org/portal/pages/about/awards/index.html> Nominations are initiated by members and the public, then reviewed by a panel of peers - professionals who are especially knowledgeable in a particular field. Their recommendations are submitted to the IEEE Awards Board prior to ultimate approval by the IEEE Board of Directors.

Other IEEE organizations also recognize specific technical and professional achievement through other awards programs. Many sections and chapters similarly have awards programs that provide recognition to deserving individuals.

### IEEE Leon K. Kirchmayer Graduate Teaching Award Sponsored by: Leon K. Kirchmayer Memorial Fund Nomination Deadline - January 31

The IEEE Graduate Teaching Award is a Technical Field Award established by the Board of Directors in 1990 and renamed in honor of Leon K. Kirchmayer in 2002. Dr. Kirchmayer was well known and revered throughout the world for his commitment to students and education.

This award honors teachers of electrical and electronics engineering and the related disciplines, 'for inspirational teaching of graduate students in the IEEE fields of interest.'

A primary goal of the IEEE is to ensure that the Institute Awards Program provides due recognition for superior achievement in the engineering profession. To that end, and in response to the desire of the membership, the Awards Board, and Board of Directors that the field of education be more broadly recognized, this award for graduate teaching was added to the Awards Program. Selection criteria include such contributions as curriculum development, authorship of course materials, involvement with students and faculty in advisory capacities, as well as 'attracting students to engineering and scientific professions, and preparing them for effective careers in engineering and the sciences.'

Recipient selection is administered by the IEEE Awards Board through the Technical Field Awards Council. It is awarded to an individual only.

In the evaluation process, the following criteria are considered: excellence in teaching graduate students, curriculum development with the inclusion of current research and development knowledge that reflects the state of the art in courses, authorship of course material for graduate students; and involvement with and direction of students to prepare them for effective careers in engineering and the sciences, and the quality of the nomination. The award consists of a bronze medal, certificate and honorarium. The nomination form is available at:

<http://www.ieee.org/portal/pages/about/awards/noms/gradnom.html>

### IEEE Undergraduate Teaching Award Sponsored by: IEEE Foundation, Inc. Nomination Deadline - January 31

The IEEE Undergraduate Teaching Award is a Technical Field Award of the Institute established by the Board of Directors in 1990 to honor teachers of electrical and electronics engineering and the related disciplines, 'for inspirational teaching of undergraduate students in the fields of interest of the IEEE.'

A primary goal of the IEEE is to ensure that the Institute Awards Program provides due recognition for superior achievement in the engineering profession. To that end, and in response to the desire of the membership, the Awards Board, and Board of Directors that the field of education be more broadly recognized, this award for undergraduate teaching was added to the Awards Program.

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<http://www.ieee.org/portal/pages/about/awards/noms/ugradnom.html>

# Sleep Deficit

Terrance Malkinson

*"Companies today glorify the executive who logs 100-hour workweeks, the road warrior who lives out of a suitcase in multiple time zones.....this kind of corporate behavior is the antithesis of high performance, In fact it endangers employees and puts their companies at risk"*

\_ Sleep Deficit: The Performance Killer- Executive Summary; Harvard Business Review 84(10):148, 2006.

Sleep deprivation results when the needed amount of quality sleep is not achieved. Sleeplessness, whether it's the result of a sleep disorder or lifestyle, will inevitably diminish your quality of life, affect your career, and deteriorate your health. Sleep is vital for the proper functioning of our bodies. When we sleep well, we wake up refreshed, alert and ready to face the day. When we don't get the sleep we need, we are less alert and attentive, our judgment suffers, and our ability to perform even simple tasks declines. Mental fatigue has been identified as a major occupational health and safety risk.

Newsweek Health recently reported that as many as 50-60 million Americans suffer from frequent or chronic insomnia. [www.msnbc.msn.com/id/7077587/site/newsweek](http://www.msnbc.msn.com/id/7077587/site/newsweek) A clinical review of the epidemiology of insomnia is provided by Maurice Ohayon in *Sleep Medicine Reviews*; 6(2): 97-111, 2002.

The effects of inadequate sleep have important implications that engineering managers should be aware of particularly with its effect on cognitive activities. We are more inclined to be irritable and experience problems that can make relationships with family, friends and co-workers difficult. In a recent article in *Harvard Business Review*; ("Sleep Deficit: The Performance Killer" Har-

vard Business Review; 84(10): 53-59, 2006) the interviewee Charles Czeisler recommends that companies institute corporate sleep policies. There are specific legal obligations for an individual with a sleep disorder, their employer and health care practitioners associated with the individual. The medico-legal aspects are discussed by Elizabeth Ellis and Ronald Grunstein ("Medico-legal Aspects of Sleep Disorders: Sleepiness and Civil Liability" (*Sleep Medicine Reviews*; 5(1): 33-46, 2001.)

Difficulty falling or staying asleep is a common problem. It affects both men and women of all ages and individuals from all socioeconomic groups. According to the National Sleep Foundation (NSF), (<http://www.sleepfoundation.org> /) 60 percent of adults report having sleep problems, and more than 40 percent of adults experience daytime sleepiness severe enough to interfere with their daily activities for at least a few days each month. Established in 1990 The National Sleep Foundation is an independent nonprofit organization dedicated to improving public health and safety by achieving understanding of sleep and sleep disorders, and by supporting sleep-related education, research, and advocacy. The NSF website provides a wealth of information on sleep.

Insomnia lasting only a few nights is usually brought on by stress, excitement, or a change in sleep timing or environment. Insomnia lasting more than a month may be a sign of an underlying medical, behavioral or psychiatric problem. If you have disturbed or poor sleep for more than a few weeks, see a medical professional.

Changing a few bad habits can do wonders for troubled sleep. Here are some guidelines:

- Vary your bedtime until you discover the amount of sleep that is the most restorative for you.
- Establish a regular bedtime and schedule a relaxation period before going to bed.
- Get up at the same time every day, regardless of when you went to sleep.
- Avoid caffeinated beverages, alcohol and nicotine before bedtime. Caffeine is a stimulant.
- Mattress quality affects sleep, discomfort can make falling asleep more difficult and lead to restless slumber.
- Drink fewer fluids and avoid heavy meals close to bedtime.
- A slightly cool and dark and quiet room contributes to good sleep as does an appropriate humidity level.
- Exercise regularly, but not too close to bedtime.

The National Center for Sleep Disorders Research (<http://www.nhlbi.nih.gov/about/ncsdr/>) coordinates government supported sleep research, training, and education to support the health of Americans.

*Terrance Malkinson is a documentation specialist; an elected Senator of the University of Calgary; a Governor of the Engineering Management Society; international correspondent for IEEE-USA Today's Engineer Online; editor-in-chief of IEEE-USA Today's Engineer Digest; editor of IEEE Engineering Management; and associate editor of IEEE Canadian Review. The author is grateful to the Haskayne School of Business Library at the University of Calgary. He can be reached at [malkinst@telus.net](mailto:malkinst@telus.net).*

## Chapter Reports

### Hong Kong Chapter

*Stephen Kwok*

The Hong Kong EM Chapter organized a Final Year Project (FYP) Competition which was successfully completed on June 10. This competition on Engineering Management theme was the first of its kind for the Chapter. The event was co-organized with the GOLD committee. Eight teams of students from five universities (Chinese University of Hong Kong, City University of Hong Kong, University of Hong Kong, Hong Kong Polytechnic University, and Hong Kong University of Science & Technology) competed for three awards. Miss Helen LAU Mei Shan of Hong Kong Polytechnic University received the Outstanding Project Award. Mr LAW Chun Man, LEUNG Hau Lun, and LAM Shun from Hong Kong University of Science & Technology received the Innovation Award. Miss Tracy ZOU Xiaoping of Hong Kong Polytechnic University received the Best Presenta-

tion Award. Building on the success of this event, the Chapter will make this an annual activity.

### New York Chapter

*Marty Izaak*

Marty Izaak, Chairman of the Engineering Management Society New York Section of IEEE, will facilitate the last technical presentation for 2006, to be held at the Urban Engineers of NY office, on December 14, 2006. This special presentation will be on the subject of "Rehabilitating NYC Transit Subway Stations - from Design through Construction"

The presentation will illustrate the engineering techniques, and will highlight pitfalls and triumphs of performing multimillion dollar subway station rehabilitation projects in mid-town Manhattan. The presentation will illustrate the requirements of complex project work from inception of design through construction and acceptance by the end user.

Mr. Joseph Mendola, P.E., Lead Construction Manager - MTA's NYC Transit will discuss the design review process, techniques for handling constructability concerns, the bid process, and qualification hearings, leading to the award of multimillion dollar contracts.

Construction topics will include managing the submittal process, shop drawing review and approval, safety and quality concerns, working in an active subway station, schedule concerns, working with outside agencies, user acceptance and turnover. The Rehabilitation of Columbus Circle Station Complex, is a project currently in construction assigned to Mr. Mendola, and will utilize this project as an example throughout the presentation.

The invitation to this meeting will be extended to all NY Section IEEE members and the technical community in the NY metropolitan area. A large number of attendees is expected.

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## AES/EMS Chapter, Binghamton Section

*Vince Socci*

The joint chapter of AES and EMS in Binghamton, NY is co-hosting a Southern Tier Technology Symposium in Binghamton, NY on Oct 27-28, 2006. There will be several parallel tracks offering many interesting technical and professional development classes and in-depth workshops. CEUs will be offered.

The symposium begins Friday night with a keynote speech from IEEE Region 1 Director Barry L. Shoop, Ph.D. His talk, entitled "Technical Leadership: A National Need," will describe the growing need for technical talent and leadership in our environment. Throughout history, nations have mobilized to address a critical national need. On numerous occa-

sions, this has been a national call for technical specialists to address specific scientific and technical needs. In 1776, John Adams declared that "Engineers are very scarce, rare, and dear ... we want many and seem to have none." In 1802, Congress established the U.S. Military Academy at West Point to meet the nation's critical need for military and civil engineers. Graduates of West Point played key roles as the nation expanded Westward and developed the infrastructure of the nation. During World War II, the nation mobilized scientists and engineers to support the Manhattan Project to meet another critical need - bringing an end to a world war. In 2003 after the fall of the Taliban, the government of Afghanistan identified engineering

and technical competency as a critical national need to rebuild their nation, selecting the West Point model for their National Military Academy of Afghanistan to educate their future military leaders. Today, our nation again faces challenges relating to technical leadership from inspiring our next generation to pursue scientific and technical careers so that the United States can maintain a technical advantage in a global economy to defeating improvised explosive devices as weapons of strategic influence, worldwide. This keynote address will address the need for technical leadership in the current environment.

Saturday's keynote address will be "Innovation and Technology Manage-

ment,” by James Wasson, Chief Technology Officer, BAE Systems. The development of a strategic technology management capability begins with the development of a technology management future state that starts with benchmarking for gap analysis, prioritization of technical capabilities, and the development of technology management organizational concepts, processes and tools. Such an initiative addresses the following issues that are prevalent throughout many industries:

- Is most of your R&D budget is spent on subsidizing incremental product improvements instead of developing revolutionary lead-ahead technologies for future growth? Project portfolio planning using NPV is well suited for programs that you can build a business case, but it is inappropriate for determining the value of disruptive technologies that could be real game changers in the future market place because disruptive technologies are too immature to apply this technique.
- Is there duplication of your core enabling technology developments across your various Business Units? If so, you need a mechanism to provide greater horizontal integration and coordination in developing your core enabling technologies (core enabling technologies are those needed to compete in the market place but are not tied to a particular product development or business pursuit.)
- Does your organization have dedicated resources to perform advanced technology development for new product definition or do your top-notch engineers constantly get redirected to put out today's fires? Technology Interface Meetings (TIMs) with key customers can do more hard than good if you fall down on customer commitments to develop and demonstrate new capabilities because you can not perform adequately with an ad-hoc team.
- Are your Independent R&D (IRAD) projects and your Con-

tracted R&D (CRAD) programs coordinated such that they complement each other and leverage your internal investment? It is imperative that the Technology Management staff be responsible for not only IRAD project administration, but also lead the CRAD program pursuit process and manage the CRAD programs as well. Only by centralizing IRAD and CRAD management can there be a coordinated technology management strategy. Such a strategy is typically reflected in technology roadmaps that show the quickest time to market to capture market share for increased profits and a quicker return on investment.

Dr. Wasson's address will discuss how these elements fit into a strategic technology development process.

Our section welcomes and encourages the participation of all interested parties. Further information on the STTS can be found at [www.ewh.ieee.org/r1/binghamton/stts/](http://www.ewh.ieee.org/r1/binghamton/stts/).

## Uruguay Chapter

*Gustavo Giannatasio*

Last August 29th, PMI celebrated a regional congress on the south cone of America. The congress was held at Montevideo in the Radisson Hotel with more than 300 visitors. Among PMI presentations, the IEEE EMS local Chapter chair presented “Project Management in Engineering and IEEE”. This opportunity to close relationships between IEEE and PMI showed real interest among authorities of both Institutes to enhance and promote deeper under-

standing and cooperation worldwide among IEEE and PMI

IT was agreed that further actions must be taken to promote mutual benefit for PMI and IEEE members. IEEE Section Uruguay and PMI Montevideo Chapter held already joint events on Engineering Management on topics like WBS, PMO and Learned Lessons. A planned IEEE EMS event for end of September by Celia Desmond, PMP and Vice-president of Engineering

Management Society will provide a perfect ceremony to close activities for the first anniversary of IEEE EMS chapter of Uruguay, one of the youngest local EMS Chapters in Latin America.

Year 2007 joint activities under consideration include on line seminars to promote Project Management educational and professional activities for members of both Institutes in the region.

## IEEE United Kingdom and Republic of Ireland Section

Alan Pilkington

We represent the UK and Republic of Ireland membership who have an interest in engineering management and professional communications. We enjoy collaborating with sister technical chapters, student branches and other organisations to organise various technical and social activities for engineering students and professionals. The UKRI Section of the IEEE has over 8,000 members.

<http://www.ieee.org.uk/index.html>

The UKRI is very pleased to announce the promotion to Fellow for Charles Turner in recognition of his contribution to the chapter and IEEE in general over many years. On the wider front, we have traditionally operated very closely with the GOLD affinity group and held five meetings in 2006 covering a wide range of topics. The session on modelling business processes saw the launch of an influ-

ential new book by Martyn Ould whilst our session from Geoff Bell (photo) on intellectual property examined an innovative approach from Bournemouth University which very effectively supports the patenting of student projects. We also had meetings concerned with Managing Your Professional Career and several on standardisation. Plans for 2007 are already developing and we welcome ideas via our new web site: [http://ewh.ieee.org/r8/ukri/em\\_pc/](http://ewh.ieee.org/r8/ukri/em_pc/).

## IEEE EMS Chapter Central Europe

Bernd Kopacek

The chapter includes currently Croatia, Czech Republic, Hungary, Slovakia, Slovenija and Austria. The number of members is more than 100. The main task of the chapter was: improving the education in Engineering Management in Europe. In 1995 one of the 1st EM postgraduate education in EM has been installed as a cooperation between Oakland University, Rochester (MI) and Vienna University of Technology. This programme ran very successful and more than 100 Engineering Man-

agers are currently in high management positions in the European industry.

Because of the historical role of Austria in Europe the chapter started a similar EM programme in Prishtina (UNMIK, Kosovo) in cooperation with the "University for Business and Technology - UBT". Parts of this programme were transferred to Dogus University in Istanbul.

Currently a BSc programme "Mechanics Management" is in the devel-

opment stage in the framework of the EC. The curriculum was developed by specialists from Italy, Ireland, UNMIK and Austria based on a PhD work at Vienna University of Technology.

In the last years at least 4 IEEE evening lectures per year have been organised in the framework of these programmes and very well attended. Furthermore national as well as international events have been organised under the umbrella of the chapter.

## News from IEEE Computer Society

Reprinted with permission from IEEE-USA

*Two Key 60th Anniversary Computer Society Awards Events To Be Held In San Diego On 30-31 October*

WASHINGTON (26 October 2006) -- In two of the most visible events to celebrate the 60th anniversary of ENIAC, the first all-electronic computer, and the 60th anniversary of the IEEE Computer Society, the Computer Society is scheduling two key functions at the Sheraton San Diego Hotel and Marina on 30-31 October. The events are planned in connection with a joint meeting of the IEEE Computer Society's Board of

Governors and the 36th Annual Frontiers in Education Conference.

On Monday, 30 October, the IEEE Computer Society will convene a 60th anniversary reception, including a presentation of the Society's history competition award. The award will be given by IEEE Computer Society Board of Governors Member Alan Clements and Northrop Grumman Information Technology Program Manager/Technical Fellow Kathy Land to an undergraduate team from the Russian State Technological Institute in Moscow. The team will receive a first-place prize of \$10,000,

donated by Northrop Grumman, for its website on the history of the computer.

For more information on the student history competition, go to <http://www.computer.org/education/chc60/winners>

On Tuesday, 31 October, the Computer Society will hold its President's Awards Banquet. Dr. Deborah Cooper will present awards for technical achievement, standards development, excellence in distributed computing systems, and to two computer pioneers.

Two computer pioneers from the United States and Japan will be honored, respectively, for their contributions in developing an online data acquisition and recording system and a multi-access reservation system. From the United States, Arnold Spielberg will be honored for his contribution "to real-time data acquisition and recording that significantly contributed to the definition of modern feedback and control processes." In 1954, Mr. Spielberg created an online data acquisition and recording system unique for its time. He is responsible for development and design of several GE, IBM and SDS computers, and is the father of Steven Spielberg, the movie director.

The second recipient of the "Computer Pioneer Award" is Mamoru Hosaka,

who is being recognized for "pioneering activities within computing in Japan." In 1955, he developed the basic idea for seat reservations on trains, which has evolved into the multi-access reservation system. Mr. Hosaka's ideas and theories were applied by Toyota where clay models for car body style design and real master models for automotive manufacturing were replaced in the 1970s by computer internal models.

In addition, an award for exceptional contributions in distributed computing systems, the "Tsutomu Kanai Award," will be presented to Elisa Bertino. She is professor of computer science and of electrical and computer engineering at Purdue University. Her main research interests include security and privacy for

distributed systems, databases systems, object-oriented technology and multimedia systems. To prevent identity theft and other serious computer problems, Dr. Bertino is investigating secure distributed federated digital identity management systems. The "Kanai Award" is endowed by Hitachi Ltd.

For more information on the President's Awards, go to: <http://www.computer.org/awards>

The IEEE Computer Society is the world's leading association of computing professionals with 100,000 members in over 140 countries. It is also the largest society within the IEEE, which is the world's largest technical professional organization.

## Book Review

*Bernd Kopacek*

### **Managing Innovation: New Technology, New Products, and New Services in a Global Economy**

**John E. Ettl**

**Elsevier, 2006, ISBN 0-7506-7895-X**

**Reviewed by Terrance Malkinson**

This ten chapter 493-page second edition is focused on the better understanding and better management of all of the causes and consequences of change that have technological implications in organizations. Technological change is discussed from the perspective of managers and professionals who work in today's complex business environment \_ one where changes in operations and information are necessary for most new products and services. The

author discusses how technological change can be effectively managed in modern organizations. Useful conceptual frameworks and many interesting cases related to the subject are provided. Videos and additional cases that complement the book can be accessed through a website.

The book is divided into four sections; sections that follow the life-cycle of most technology innovation. The first section introduces the major issues and theories governing the innovation process. The second section discusses planning innovation, with the third section discussing implementing the plans. The fourth and concluding section is devoted to managing future technologies and reinforces the central theme of the book \_ "integration issues must be confronted and managed

in order to capture value from technological innovation in organizations."

Chapter titles include: Technological Innovation, Theories on Innovation, Strategy and Innovation, R&D Management, Economic Justification and Innovation, New products and New Services, New Processes and Information Technology, Public policy, Globalizing change, and Managing Future Technologies.

This book is designed for students at all levels of business; new and experienced. It is of interest to anyone who encounters change inducted by new technology. The author is Professor and Director of the Technology Management Center at the Rochester Institute of Technology in Rochester, New York.

## IEEE Backs New PBS Engineering Reality TV Show for Youngsters Ages 9 to 12

"The IEEE is providing major funding for a new PBS engineering reality competition television program, "Design Squad," intended to introduce students to engaging, real-life applications of engineering concepts and to present engineering as a creative, productive career. The live-action

series, aimed at 9- to 12-year-olds, borrows from the popular TV reality competition format. The brainchild of the producers of ZOOM, "Design Squad" premieres the first of its 13 episodes on PBS stations nationwide during National Engineers Week 18-24 February 2007.

To view sample programs, visit the "Design Squad" preview Web site at <http://pbskids.org/designsquad>." For more information on the program please see the November article by Pender McCarter on the IEEE-USA Today's Engineer Web site [www.todaysengineer.org](http://www.todaysengineer.org).

## Board of Governors

Your Board serves the interests of the Society and promotes Excellence in Engineering Management. The EMS Board needs your input to help determine if the Society meets your needs. Please contact any Board member for additional information, for expressing opinions, or raising issues that need to be addressed by the Society.

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### Newsletter Deadlines

Issue	Deadlines
First Quarter	15 January
Second Quarter	1 April
Third Quarter	1 July
Fourth Quarter	1 October
Terrance J. Malkinson, Editor <malkinst@telus.net> Paul Doto, IEEE Newsletter Coordinator <p.doto@ieee.org>	

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