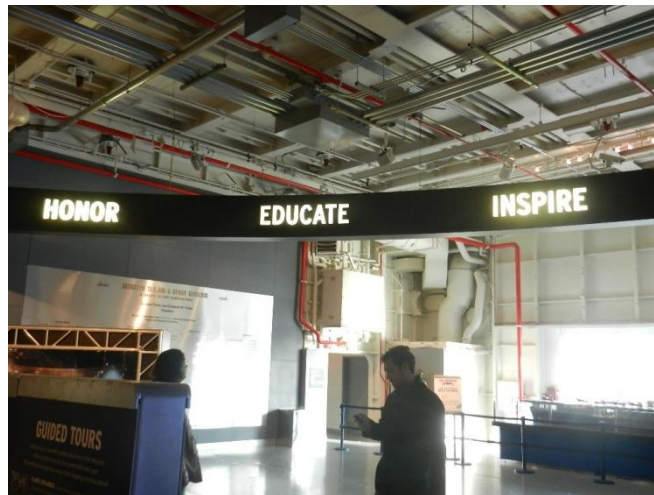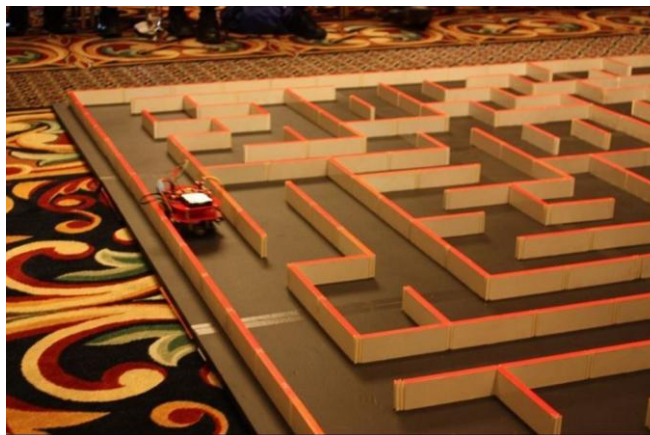**RegiOne, the quarterly newsletter of the IEEE Region 1**

May 2015, vol. 2, No. 1

Flight deck of USS Intrepid

**A micromouse in action: Competition
at the Region 1 Conference of Students, YP and WIE**
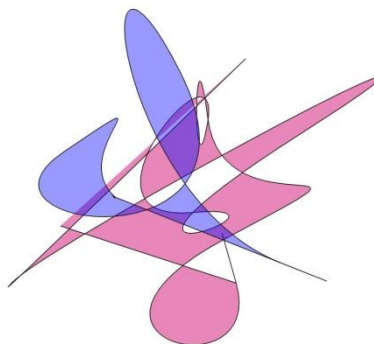
Principal Region 1 officers for 2014 −'15

Chairman of BoG and Director: Vincent Socci, SM

Vice chair and director-elect: Ronald A. Tabroff, SM

Secretary: Charles P. Rubenstein, LSM

Treasurer: Bala S. Prasanna, SM

Past Director: Peter A. Eckstein, LSM

CONTENTS

his edition of the RegiOne was put on hold until the content reached a threshold mass of articles and news that we could offer to our discerning readers. The successive arrivals of the reports on Region 1 Conference of Students, Young Professionals and Women in Engineering held at Burlington, Vermont on 10-11 April, 2015 triggered the timing for going online.

On the cover page you must have seen the photo of a sign that says: "**Honor, Educate Inspire**." The sign is prominently visible as one enters the flight deck of the USS Intrepid, permanently berthed at a NYC pier. Those three words well resonate with our motto at the IEEE to justify their inclusion in RegiOne. *We will honor our peers, we will help in educating the young and we will inspire all engineers wherever they may be.*

Next, I have included a few words on the top IEEE awardees of 2015. Most of the names appeared elsewhere in the IEEE's publications that were perhaps e-mailed to you by other sources. However, since you might have been busy with your principal life-sustaining work or perhaps were inundated with e-mails, you could have missed them. However, only three of names have been included here along with a link to the complete list on the IEEE servers. (Confession: one of those three names is resurrected from my own memory lane.)

The members of the WIE may notice that this year's IEEE Medal of Honor was given to Prof Mildred Dresselhaus professor of physics and engineering at MIT. It was the first time a woman was given that honor. You may remember that last year Prof Shirley Tilghman, President Emeritus and a professor of molecular biology at Princeton University, NJ was made an honorary member of the IEEE. I am happy and proud that the gender-neutral IEEE has given the topmost honor to these two ladies and, in a very old-fashioned way I tilt my hat to them.

I have also included the names of the 2015 IEEE Fellows and the recipients of IEEE awards. I very much wanted to include the names of our members who received other awards, especially those bestowed by the 22 Sections. But it has been difficult to obtain them. I suggest the Region 1 leaders designate one individual to keep track of *all* awardees in the Region 1. That gesture would tell the awardees that we will make every effort to honor them for their dedication to the IEEE. Additionally, it would make the job of the future editor of the Region 1 that bit easier.

In the meantime, if you know of any other awardee please let me know and we will update our list in the next posting of RegiOne.

Now to continue with our posting, earlier in the year I came to know of a successful conference on cyber security organized by the Coastal NJ Section. I asked for and received (from Dr Amruthur Narasimhan, he conference chair) a copy of a report on that conference. However, it would make no sense to upload an edition of the RegiOne just with one report. We had not yet received the critical mass of contributions.

You will notice that the reports are posted in a chronological order with steadfast neutrality. I thank Amruthur Narasimhan, Babak Beheshti, Gim Soon Wan and Denise Griffen for not only organizing the important events in Region 1 but also for taking the time to write about them.

Only by reminding our esteemed members and telling others about about identities as members of the IEEE, our

mission, what we do for our own peers and for our immediate neighborhood community (and the whole world) we can continue to move steadily forward to our goals for "advancing technology for humanity." It is indeed a heavy responsibility that all of us must share.

The last piece in this posting briefly narrates my personal visit to the USS Intrepid, berthed permanently at a NYC pier. One day in late April I received an e-mail forwarded by our southern area chair Robert Pellegrino that the IEEE members were invited to a special panel discussion to commemorate the 25th anniversary of launching the Hubble telescope into the unknown realm of space, dark energy and whatever else you can imagine. I have lately been reading a lot about such things and wanted to know more. The invitation was tempting because the IEEE members would get a 50% discount reducing the entrance fee to $10. Without a bat of the eyelid I reserved my space in the theater on the flight deck of the USS Intrepid. For the rest of the story see the appropriate pages below.

As a life-long engineer, as a curious individual and as an editor of 2 newsletters and and as a contributing editor of

the Proceedings of the IEEE I go to all sorts of meetings and seminars. I feel good about keeping myself abreast of what is happening in our profession. There is always something to learn and something to share. Also, at these events I try to look for experts who would be able to contribute an article or two to our newsletters. I spread the news albeit in my own small way about the IEEE. Last week, for example, I was able to make a good connection with the NY Chapter of the Internet Society. I was promised their calendar of events and I promised ours. In these days of globalization I am a strong believer of cooperation and collaboration. If any of you is interested in joining me in this "crusade for visibility" please write to me. I already have decades under my belt but ain't dead yet. Austrian novelist Marie von Ebner Eschenbach ((1830-1916) wrote: "In youth we learn and in age we understand." Happy reading! —Amitava Dutta-Roy, PhD, Life Fellow

DID YOU NOTICE THE NAMES OF THE IEEE'S HIGHEST AWARDEES IN 2015? WE MENTION SOME OF THEM BELOW

IEEE Medal of Honor

MILDRED S. DRESSELHAUS, MIT:"For leadership and contributions across many fields of science and engineering."

(WIE members: You can read about Prof Dresselhaus, the "Queen of Carbon" as the first female recipient of the IEEE Medal of Honor, mother of four and a grandmother of five in the Spectrum magazine http://goo.gl/jJJCfl)

Honorary membership:

Elon Musk, Chairman, CoFounder, PayPal, Space-X and Tesla, Motors, Palo Alto, California: "For leadership in and innovative contributions to space exploration technology, combating global warming and promoting science education, pediatric health, and clean energy."

IEEE ERIC E SUMNER AWARD

Sponsor: Bell Labs. Alcatel-Lucent

Sanjoy Mitter, MIT: "For contributions to the unification of communications and control"

(Note: I am especially pleased to see Prof Mitter (Region 1) get this honor. He and I did our undergraduate and graduate studies together in the EE Department, Imperial College, London, England during the same years. We even worked together on a two-person project under Prof E Colin Cherry, a pioneer of the then-nascent information theory and a contemporary of the other giant, Claude Shannon. I was pretty good with my soldering iron (pre-IC era) and Sanjoy was fast with matrix algebra and statistics. We thus fitted well. Nostalgia!)

For names of other awardees please visit: http://theinstitute.ieee.org/people/achievements/recipients-of-the-2015-medals-and-awards The IEEE honorees have made (and continue to make) me light up torches for our profession and our society not only this year but every year. We salute and congratulate all of them for their remarkable achievements. They make us proud as electrical and electronics engineers.

The Fellow grade is the highest in the IEEE membership. "The total number of Fellow recommendations in any one year must not exceed one-tenth of one percent of the IEEE voting membership on record as of 31 December of the year" —IEEE.org Web site

In the following list the 2015 Fellows are listed by their business addresses and under their preferred sections as noted in the IEEE membership database.

Boston Section

Dara Entekhabi
Massachusetts Institute of Technology
48-216G, MIT
Cambridge, MA, 02139, USA
darae@mit.edu

for contributions to microwave remote sensing of soil moisture

Robert Gresham
Anokiwave
296 Concord Rd, Ste 300
Billerica, MA, 01821, USA
ian.gresham@gmail.com

for technical leadership in commercial automotive radar sensors

James Jodice
J. A. Jodice & Associates
15 Woodcrest Road
Post Office Box 616
Manchester by the Sea, MA, 01944, USA
jajodice@ieee.org

for contributions to the testing of protective relays

James Shields
Draper Laboratory
555 Technology Square
Cambridge, MA, 02139-3569, USA
jshields@draper.com

for leadership in advanced guidance, navigation and information systems

William Song
MIT Lincoln Laboratory
244 Wood St. Rm. S2-259
Lexington, MA, 02420, USA
song@ll.mit.edu

for contributions in high-performance low-power embedded processors

Ithaca Section

Kenneth Birman
Cornell University
Dept. of Computer Science
Gates Hall
Ithaca, NY, 14853, USA
ken@cs.cornell.edu

for leadership in distributed computing and management of distributed systems

Maine Section

Yong Liu
Fairchild Semiconductor Corp.
82 Running Hill Road
Ms 35-2e
South Portland, ME, 04106, USA
yong.liu@fairchildsemi.com

for contributions in power electronics packaging

Mid-Hudson Section

Wiren Becker
IBM Corporation
2455 South Rd, Ms P310
Poughkeepsie, NY, 12601-5463, USA
wbecker@us.ibm.com

for contributions to power distribution and signal integrity in high-speed interconnects for computing systems

Keqin Li
State University of New York
Department of Computer Science
1 Hawk Drive
New Paltz, NY, 12561, USA
lik@newpaltz.edu

for contributions to parallel and distributed comput

Mohawk Valley Section

S. Gunasekaran
AFRL-Information Directorate
AFRL/RIEA
525 Brooks Rd
Rome, NY, 13441, USA
guna@ieee.org

for contributions to high-performance computer vision algorithms for airborne applications

---

New Jersey Coast Section

Frank Effenberger
Huawei Technologies, Inc.
400 Crossings Blvd., Suite 102
Bridgewater, NJ, 07722, USA
frank.effenberger@huawei.com

for contributions to passive optical networking standards and technology

---

New York Section

Francisco De Leon
NYU Polytechnic School of Engineering
Six Metrotech Center
Brooklyn, NY, 11201, USA
fdeleon@poly.edu

for contributions to transformer modeling for electromagnetic transient studies

---

Ernest Feleppa
Riverside Research Inst / Biomed
156 William Street, 9th floor
New York, NY, 10038, USA
efeleppa@riversideresearch.org

for contributions to ultrasound imaging medical applications

Monisha Ghosh
Interdigital Communications, Inc.
2 Huntington Quadrangle
4th Floor, South Wing
Mellville, NY, 10514, USA
mghosh43@gmail.com

for contributions to cognitive radio and signal processing for communication systems

---

Moti Yung
Google Inc.
111, 8th Avenue
New York, NY, 10011, USA
motiyung@gmail.com

for contributions to cryptography

_____

North Jersey Section

Daniel Andrews
Alcatel-Lucent Bell Labs
600 Mountain Avenue
Room 2A-432
Murray Hill, NJ, 07974, USA
andrews@research.bell-labs.com

for contributions to network design and wireless resource allocation

Gary Hoffman
Advanced Power Technologies, LLC
215 State Route 10
Building 2, Unit 6
Randolph, NJ, 07869, USA
grhoffman@advpowertech.com

for leadership in the advancement of monitoring systems for power transformers and power line protection

Howard Huang
Alcatel-Lucent, Bell Labs
Howard C Huang, Room MH 2B-224
600 Mountain Avenue
Murray Hill, NJ, 07974, USA
howard.huang@alcatel-lucent.com

for contributions to multiple antenna techniques in wireless cellular networks

Unnikrishna Pillai
NYU Polytechnic School of Engineering
6 Metrotech Center
Brooklyn, NY, 07640, USA
pillai@poly.edu

for contributions to adaptive signal processing and radar systems

Robert Safranek
Benevue, Inc.
513 Warrenville Rd Ste 2
Warren, NJ, 07059, USA
rjs@benevue.com

for contributions to perceptual image and video compression and quality

Princeton/Central Jersey Section

David August
Princeton University
Department of Computer Science
35 Olden Street
Princeton, NJ, 08544, USA
august@princeton.edu

for contributions to compilers and architectures for multicore and parallel processing systems

---

Ricardo Bianchini
Microsoft Corporation
Civica Office Building
205 108th Ave. NE, Suite 400
Bellevue, WA, 98004, USA
ricardob@microsoft.com

for contributions to server and data center energy management

---

Providence Section

Kenneth Foote
Woods Hole Oceanographic Institution
WHOI AOPE Dept. MS 10
98 Water St.
Woods Hole, MA, 02543, USA
kfoote@whoi.edu

for contributions to quantification of underwater sound scattering

---

Rochester Section

Paul Lee
Exelis Geospatial Systems
1500 New Horizons Blvd
Amityville, NY, 11701, USA
ppklee@ieee.org

for contributions to the development of CMOS image sensor technology and the pinned photo-diode active pixel sensor

---

Ming-Jun Li
Corning Incorporated
SP-AR-02-5
Corning, NY, 14831, USA
lim@corning.com

for contributions to optical fiber technology

Schenectady Section

Qiang Ji
Rensselaer Polytechnic Institute
Dept. of ECSE, JEC 6033
110 8th street
Troy, NY, 12180, USA
jiq@rpi.edu

for contributions to automatic facial image processing and affective computing

---

Jian Sun
Rensselaer Polytechnic Institute (RPI)
CII 8015 CFES, 110 8th Street
Troy, NY, 12180, USA
jsun@rpi.edu

for contributions to modeling and control of power electronic circuits and systems

---

Bulent Yener
Rensselaer Polytechnic Institute (RPI)
Department of Computer Science
Troy, NY, 12180-3590, USA
yener@cs.rpi.edu

for contributions to network design optimization and security

---

Syracuse Section

Biao Chen
Syracuse University
Department of EECS
4-206 SciTech Center
Syracuse, NY, 13244, USA
bichen@syr.edu

for contributions to decentralized signal processing in sensor networks and interference management of wireless networks

---

Tappan Zee Subsection

Murthy Devarakonda
IBM Watson Research Center
1101 Kitchawan Road
Yorktown Heights, NY, 10598, USA
mdev@us.ibm.com

for contributions to measurement-based analytics of distributed systems for data center optimization

---

Deepnarayan Gupta
HYPRES Inc
175 Clearbrook Road
Elmsford, NY, 10523, USA
gupta@hypres.com

for contributions to superconductor digital radio-frequency receivers

Jianying Hu
IBM
IBM T. J. Watson Research Center
1101 Kitchawan Road
Yorktown Heights, NY, 10598, USA
jyhu@us.ibm.com

for contributions to pattern recognition in business and health analytics, and document analysis

Mahesh Viswanathan
IBM Corporation
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1101 Kitchawan Road
Yorktown Heights, NY, 10598, USA
mahesh.maheshv@gmail.com
for contributions to ubiquitous access to cloud computing and to vehicular speech communications

Yurii Vlasov
IBM Corporation
IBM T. J. Watson Research Center
1101 Kitchawan Road
Yorktown Heights, NY, 10598, USA
yvlasov@us.ibm.com

for contributions of silicon-integrated nanophotonics

Worcester County Section

Michael Demetriou
Worcester Polytechnic Institute
Dept. of Mechanical Engineering
Room 243, Higgins Labs
Worcester, MA, 01609, USA
mdemetri@wpi.edu

for contributions to estimation and optimization of distributed parameter systems

Yehia Massoud
Worcester Polytechnic Institute
Dept. of Electrical and Computer Eng.
100 Institute Road, AK 203
Worcester, MA, 01609, USA
massoud@wpi.edu

for contributions to the modeling and design of nanoscale interconnects

WE CONGRATULATE THE FOLLOWING AWARDEES FOR THEIR DEDICATION TO ADVANCEMENT OF TECHNOLOGY FOR HUMANITY
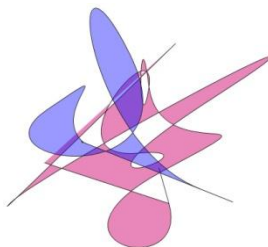
Nita Patel

MGA Larry K. Wilson Transnational Award

For distinguished contributions to IEEE global activities through the creation, development, and implementation of the inaugural IEEE Women in Engineering International Leadership Conference, a comprehensive, multi-year strategic business plan, and for expanding the global reach of the IEEE Women in Engineering mission to inspire, engage, and advance women in technology.
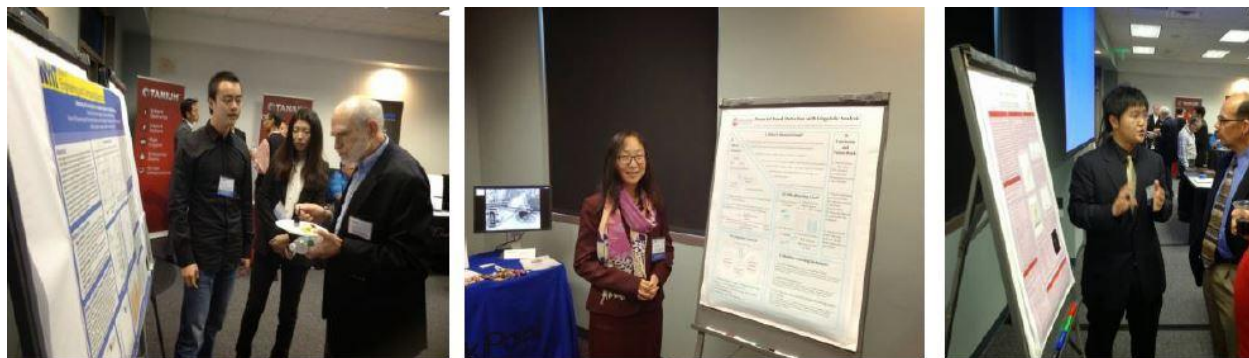
Donald Sherwood

IEEE-USA Regional Professional Leadership Award

For his efforts in promoting K-12 Science, Technology, Engineering, and Mathematics (STEM) activities and creation of grant and award programs honoring schools, organizations, and educators in Region 1

Amruthur Narasimhan, PhD, CISSP, Conference Chair

Students' poster competition

The IEEE New Jersey Coast Section successfully conducted its first Conference on Information Security/Cyber Security and Privacy on November 12, 2014 at the IEEE Operations Center (OC) in Piscataway, NJ.

For the Section (and the entire IEEE) the most encouraging outcome from the conference was the strong student participation. The students enthusiastically highlighted their research projects and displayed them in their respective posters and their teams received awards for their accomplishments. The keynote speakers and other experts gave their presentations that were informative and invigorating. That consumed almost an entire day. The industry representatives exhibited their cutting-edge technology products and demonstrated their advantages. Overall, we had 100 registrants that filled the conference hall at the OC to its capacity. (The conference generated positive revenue for the IEEE.) Networking and interactions between experienced colleagues, industry representatives and students were very good. We have received positive feedbacks from a large number of attendees with a request to hold a similar conference in 2015.

MORE ON THE CONFERENCE

The Conference Chair opened the conference with a warm welcome to all attendees, industrial sponsors and volunteers. He emphasized the challenges of information security, cyber security and privacy as they are moving targets. While it may be interesting from the point of view of research, more the vulnerability the industry fixes after hacking incidents, smarter the hackers become. Hacking incidents are reminiscent of the problem of a mousetrap: the mouse very quickly comes to understand the mechanism well enough to render it useless. Then the knowledge, skills, and precautions must evolve to combat the security breaches. Hackers are persistent in their pursuits to break into the systems. Although once it was an

Dr Peter Fonash, CTO, Cyber Security and Communications, Homeland Security

intellectual challenge or fun for the hackers to hack, now they do it for financial or political gains some of which may be state-sponsored. These criminal activities extort large amount of monies, extract private information, commit industrial espionage, or even bring down systems creating a cyber-terror.

How strong an authentication or a multifactor authentication then needs to be in place? Would the wider use of social websites such as Facebook, Twitter and others create new challenges in security? How will regulations and deception need to be addressed and balanced? All entities, large, medium or small need some sort of security policies.

DATA DESTRUCTION

The Sony hack opened our eyes to another kind of threat that we have not hitherto seen much in this country: the threat of data destruction. Criminal activities of this nature could become more common in 2015. The attackers behind the breach of Sony Pictures Entertainment didn't just steal data from the company; they also deleted it. It's a tactic that had been used before in attacks against computers in South Korea, Saudi Arabia and Iran—in South Korea against banks and media companies and in Saudi Arabia and Iran against companies and government agencies involved in the oil industry. Those attacks took the form of malware that wipes data and master boot records to render target systems inoperable. Good data backups can prevent

Data destruction is a new form of cyber attack

an attack like this from being a major disaster. But rebuilding systems that are criminally wiped out is still time-consuming and expensive, and you have to make sure that the backups you restore are thoroughly disinfected so that lingering malware will not re-wipe systems once they are restored.

With the advent of cloud computing, enterprises of all sizes have begun storing large amounts of data in the cloud. But what is the level of security that is currently provided by the cloud providers? Where is your data stored and in which country? How do you ensure privacy of the consumer data? While the cloud providers offer security up to the network level of OSI, is it the

responsibility of enterprises to ensure end-to-end security?

Forensics has now become a forefront technology with the resurgence of the kind of security attacks that we see today to help the law enforcers to charge perpetrators. How much information do we need to store to capture these perpetrators? Is it the complete history of transactions or only particular related events?

In summary, information security is an ever-changing field that all persons, whether they are security professionals, or regular people–users of computers or mobile devices—need to be aware of because every day life gets increasingly

dependent on safe, private, accurate and accessible information. People should know how to use everyday devices and avail themselves of appropriate and available security protections including simple backups for the ordinary data loss events that are part of any overall data and system security policy. With the safeguards available in the market it should not be difficult to stay secure. Are the bad guys still ahead of the good guys—and getting smarter? Are the bad guys targeting regular citizens as well as high profile targets? And for reasons we do not yet understand? While we have a long road ahead to improve information security, there is also new hope for the future.

KEYNOTE SPEECHES

The first keynote speaker Dr Gus de los Reyes, Executive Director of Technology Security AT&T, in his talk "Wanted: A Revolution in Security Research," described an approach that is needed in security research for leaping ahead of attackers and enable businesses to flourish in the networked, mobile, and cloud-enabled world. He added that the effort requires nothing short of a security revolution.

The conference chair then introduced the second keynote speaker, Dr Peter Fonash, CTO, Office of Cybersecurity and Communications Department of

Homeland Security. R. Fonash spoke on "Strengthening the Cyber Ecosystem" describing his effort in leading DHS in automating security of the cyber ecosystem to combat advanced cyber threats.

The title of the of the third keynote speech by Jimmy Tsang, Director of Product with IBM, was an interesting one: "The Quest for Nirvana: Balancing Mobile Security with User Productivity " Mr. Tsang spoke about how the IBM data and analytics engine can be used to leverage modern mobile security and mitigate these threats while enhancing productivity.

Dr Gus de los Reys, Exec Director
Technology Security

Jimmy Tsang, IBM

ACADEMIA

Three academics expounded their points of view. Dr. Manu Malek, a former Industry Professor of Computer Science and Director of the Cyber-security Certificate Program at Stevens Institute of Technology, Hoboken, NJ (2001 to 2009), spoke on "Tracking cyber-attackers—An overview of IT Security Forensics." He explained that Security Forensics is a discipline for identifying the attackers and document their activity with sufficient reliability that would justify appropriate technical, business, and legal responses.
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.

As part of her research activity to build a *deception detection* engine, Prof K.P. Subbalakshmi, Stevens Institute of Technology spoke on "Detecting Lies on the Internet.".

Dick Wilkins, Associate Professor, Comp. Science at Thomas College, Waterville, Maine spoke on "UEFI system firmware, secure boot and the current attack landscape in the pre-OS environment

Prof·Manu·Malek,·formerly·of·¶
Stevens·Institute·of·Technology¶

Prof K P Subbalakshmi,
Stevens Inst of Technology

Prof Dick Wilkins, Thomas College

INDUSTRY-SPONSORED SPEAKERS

Several speakers were sponsored by their respective companies. Lee Gitzes of Comm Solutions, Malvern, Penn, spoke on "The Invisible Threat of Modern Malware." Scott N. Schober, Berkeley Varitronics Systems, Inc.; Metuchen, NJ gave a talk on "Mobile Devices—The Insider Threat to Cyber Security in Secure Facilities;" Barracuda Networks & Promedia Technology Services, Inc., Little Falls, NJ was

represented by Sean McCarthy who spoke on "Critical Considerations in Choosing a Network Firewall;" Dominic Genzano, CEO Stig.net, Allendale, Pa. spoke about "Risk Assessment of 3rd Party Service Providers;" and Jeff Schwartz, Checkpoint Software Solutions, Mississauga, Ontario, Canada spoke on "Threat Prevention Solutions."

CLOSING REMARKS BY THE CONFERENCE CHAIR

What should the cyber security industry plan in 2015 and beyond to combat known and unknown vulnerabilities? How can privacy be restored to the people affected by security break-ins? What is in store for this industry in 2015 and beyond?

ACKNOWLEDGEMENTS

Conference volunteers
Dr Ashutosh Dutta, Dr. Newman Wilson, Irman Lateef,
Dr Amruthur Narasimhan, Prasad Alturi, Dr K Raghunandan and Frank Laslo

Industry sponsors

Exhibitors

IEEE REGION 1 ANNUAL
STUDENT AND WOMEN IN ENGINEERING (WIE) CONFERENCE,
UNIVERSITY OF VERMONT, BURLINGTON

Dr Babak D. Beheshti, Chair, IEEE R1 Student Activities

On April 11, 2015, the IEEE Region 1 Student Activities Committee held its annual Student Conference at the Sheraton, Burlington, Vermont. The IEEE Region 1 Student Conference is the premier annual event where all student branches from IEEE Region 1 (Northeast Region of the USA) meet. The objective of this annual conference is to encourage friendly competitions among students and to provide them an opportunity to network and learn from other students from across the Region 1, while applying practical engineering knowledge in the various competitions. It also provides a favorable ambiance for the student members to network with the industry professionals and the IEEE leaders.

This year, the event was hosted by the IEEE student branch at the University of Vermont (UVM). The steering committee of the conference (Babak D. Beheshti, Soon Wan, Pascal Nsame, Charles Rubenstein), Brianna Socci (R1 RSR)), and the leaders from the UVM student branch (Kaitlyn Jean Mayberry and Caitlin Bliss) organized one of the most successful events in recent history. The student leaders at UVM were involved in all aspects of the conference planning, from registration to program design. The IEEE is proud to have such energetic and enthusiastic student leaders as its core volunteers. In the following I will try to highlight some of the important features of the conference.

The annual conference enjoy financial support from the IEEE Member Benefits Portfolio Assessment Committee that sponsored the prizes for the micromouse competition, as well as the Green Mountain Section, UVM and Norwich University.

The event was attended by the IEEE leaders: Vince Socci: director, Region 1, Peter Eckstein, president-elect of the IEEE-USA, Arthur Winston, past president of the IEEE, and Ron Tabroff, director-elect of the Region 1.

The event was attended by 155 students from various student branches within the Region 1 in addition to volunteers, judges and guests that brought the total number of attendees to over 200, making it one of the largest ever. The universities represented in this conference included those from all corners of the Region, from New Jersey to Maine to Buffalo. The Region 1 subsidized the student members by providing them two nights' stay at the hotel.

In an attempt to expand the scope of engagement in this annual event, the Region 1 Women in Engineering (WIE) committee joined efforts also to organize a WIE conference with a number of speakers during the event. The simultaneous WIE conference was well received and welcome by both WIE members as well as the student attendees. Ms. Denise Griffin is the R1 Chair of the WIE at R 1. She reports below about their activities in the conference.

The student event was composed of a plenary session with its keynote speaker, "Starting & Growing a Tech Firm" by Steve Arms, President, Swarms Ventures, LLC, followed by signature student contests:

- Undergraduate Student Paper Contest
- Student Ethics Competition
- Micromouse Competition and Workshop – a detailed article on this event can be found by the Micromouse contest: coordinator Dr Soon Wan
- T-Shirt Contest

The conference concluded with a gala dinner, with another keynote speaker, Ben Kinnaman, President & CEO, GreenSea Systems, Inc. followed by the presentation of awards and certificates to the contest winners.

For a selection of photos of the event, names of winners and more details on the conference, please visit the event website at: http://sites.ieee.org/r1studentconference/ .

What about the conference in 2016? There will be a call for proposals from the interested student branches in the next couple of months. Stay tuned to submit your proposals to host next year's conference!
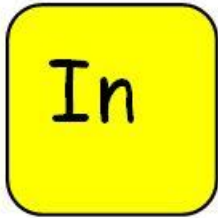

THE REGION 1 WIE CONFERENCE, BURLINGTON, VERMONT

Denise Griffin, Rgion 1 coordinator of WIE Activities

A unique aspect of this year's Region 1 Conference was the addition of the Women in Engineering track. This track consisted of four presentations given by active WIE members. It began with a presentation by Nita Patel, past Chair of the Women in Engineering Committee, who presented "The Importance of Communication in Leadership." Then Maura Moran, Patent Attorney and Vice Chair of IEEE-USA Intellectual Property Committee, presented "Trade Secrets – Now more than Ever." Denise Griffin, past

WIE Chair of Boston and WIE Region 1 Coordinator, presented "WIE Leadership and Section Vitality Strategies". Finally, Elisabetta Sassaroli, PhD from the Department of Radiology, Brigham and Women's Hospital, presented "An Introduction to Therapeutic Applications of Focused Ultrasound." The talks were well received and were filled with active discussions.

2015 IEEE Region 1 Micromouse Competition
04/12/2015

May 1977, the IEEE Spectrum magazine, introduced the concept of micromouse. A micromouse is a small robot vehicle that is able to navigate its way through an unknown maze. It is autonomous, battery-operated and self-contained, encompassing computer technology, robotics and artificial intelligence.

Two years later the IEEE Spectrum announced the first US amazing micromouse maze contest and it was held in June 1979, at the National Computer Conference in New York. Only 15 micromice competed out of 6,000 entries received. Some reported "brain failure" and others claimed mouse "blow-up". While interest was high, evidently, the design and construction of an intelligent Micromouse proved to be tougher than most had imagined.

The main challenge for the micromouse designers is to equip the Micromouse with an adaptive intelligence which enables exploration of different maze configurations, and to work out the optimum route with the shortest run time from start to destination and back. In addition, the Micromouse must reliably negotiate the maze at a very high speed, relative to its physical dimensions, without crashing into the maze walls. An outside wall encloses the entire maze.

The rules of the current Region 1 micromouse Competition were adapted from the 1986 Official Rules for the North American 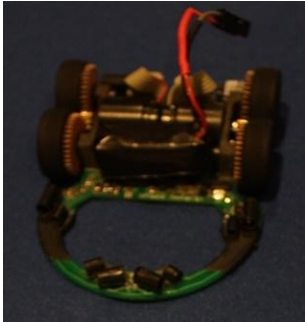Micromouse Contests. A micromouse shall not be larger either in length or in width, than 25 centimeters. There are no restrictions on the height of a micromouse. The maze is composed of multiple units of a square each measuring 18 cm x 18 cm. The entire maze comprises 16 x 16 such squares. The walls of the maze are 5 cm high and 1.2 cm thick (assuming 5% tolerance for the construction). The outside wall encloses the entire maze.

As far as I can remember IEEE Region 1 Student Conference has hosted the micromouse competition since 1997. This year, 15 micromice registered for the competition, and 12 of them checked in. The spirit at the competition was extremely high—everyone was excited, cheerful, and engaged. All of the competitors were also willingly to talk about their experiences and share their micromouse designs. We had more participants this year that broke last year's record. The number of schools represented also increased. Several students said the competition has inspired and motivated them to go back to build a micromouse, or to improve their existing micromouse for next year's competition.
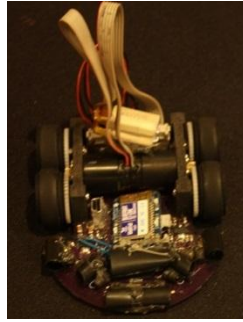
The Mercury Micromouse from University of Massachusetts at Amherst came in first with the fastest run time of 14.97 seconds. Justin Marple was the lead designer and other student designers such as Rohan Kapoor and Aaron Kucia worked in the team. MegaMouse Micromouse from University of Buffalo won the second place with a run time of 48.76 seconds. The lead designer was Kyle Thompson, and the other co-designers were Mack Ward, Joe Materski, Jimmy Mazur, and Tomasz Pietruszka. The third place went to Chester Micromouse,

also from University of Buffalo. The lead designer was Mike Szymkowski, and Matt Spitzer, Maxim Solomonyuk, Nazia Hasan, Carly Schuz, and Kevin McMahon were the other co-designers. The all deserve our sincere congratulations.

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First Place ($800)
Mercury Micromouse

Second Place ($500)
MegaMouse Micromouse

Third Place ($200)
Chester Micromouse

This year the judges (Alvin Joseph, Bala Prasanna, Bob Pellegrino, Anthony Wan, Dave Harame, and Rob Vice) recognized the 4th (Minute Micromouse from Suffolk University) and 5th (Squeak Micromouse from Roger Williams University) places, and awarded a special recognition to Grody micromouse from Monmouth University.

IEEE Member Benefits Portfolio Assessment Committee sponsored the cash prizes for the top three winning micromice. For more information about the micromouse, the competition guidelines, and the 2015 winners please visit
http://sites.ieee.org/r1studentconference/about/micromouse
For photos of 2015 event: http://goo.gl/44RyMD

Please contact Soon Wan (gimsoon@ieee.org) if you have any question, or you need any assistance to build a micromouse.

For a bit of history on the IEEE micromouse competition:

Donald Christiansen, Editor, "Announcing the Amazing Micro-Mouse Maze Contest", IEEE Spectrum, May 1977 Issue Volume 14 No. 5, p. 27 (http://goo.gl/IKZ6VJ).

Roger Allen, Associate Editor, "The amazing micromice: see how they won", IEEE Spectrum, September 1979 Volume 16 No. 9, p. 62

In the photo above (L to R):
Ira Flatow, host of Science Friday®with Public Radio International (Moderator)
Prof Priyamvada "Priya" Natarajan Departments of Astronomy and Physics, Yale University
Dr Kenneth Sembach Space Telescope Institute, Baltimore, MD
Prof Thomas J. Barber Professor in space studies at Johns Hopkins University and
Distinguished Astronomer, Space Telescope Science Institute (STScI)
Prof Sara Seager, Planetary Science and of physics at Massachusetts Institute of Technology (MIT)

On 24 April, 1990 the Hubble telescope was launched into space. To commemorate the 25th anniversary of that launch a panel discussion was organized on board the USS Intrepid that is permanently berthed at a pier on the Hudson River at 46th Street. (I still do not know who actually organized it. However, I received a forwarded e-mail from Robert Pellegrino that the IEEE members were invited to that event at a 50 percent reduction in the entry fee making it only $10.) Lately, I have been reading quite a bit about cosmology. Hence, I promptly purchased my ticket online and showed up at the event. When I looked at the names of the distinguished panelists and the moderator I immediately felt that I would not be disappointed. Though the attendees did not fill the theater on the Intrepid the group was a fair sized

one, some 60 in number. The organizers invited four physicists and a moderator.

For the first time, many of us came to know from the actual users of data from the Hubble telescope how useful it has been to the astrophysicists and astronomers. It was interesting to know that the data from the telescope are *free* and can be obtained by logging on to hubblesite.org. The questions regarding the management of Hubble operation and acceptance of proposals for its use in the sky came up. We learned how Hubble projects are selected and how the entire flight of the Hubble is managed. If you wish to participate in our quest for the celestial bodies please look up: diskdetective.org

Amitava Dutta-Roy, PhD, LF, Editor, NY Monitor

HOW TO REACH THE 22 IEEE SECTIONS OF REGION 1

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Worcester County: http://users.rcn.com/ieeeworc/ :Section chair> Vern Gaw

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The End