Rochester Section Meeting – Tuesday, January 3, 2012 at 12 Noon

Bringing in the New Year is the next Rochester Section business meeting on Tuesday, January 3, 2012 at 12:00pm, at the Shanghai Restaurant, 2920 West Henrietta Road, just south of the intersection with Brighton-Henrietta Town Line Road.

Any IEEE member is welcome to attend and to participate, or just to observe. Lunch is $3 for IEEE members. No reservation or RSVP is needed, just show up.

New Section Officers for 2012

The December Rochester Section election results are in and these are our new section officers for 2012:

Chair: William Y. Fowlkes
Vice Chair: Eugene F. Saltzberg
Secretary: Jean Kendrick
Treasurer: Dennis Thompson
Awards: Andrew C. Gallagher

These represent the elective offices in the Rochester section. Other Executive Committee positions are filled by appointment of the Chair, with the approval of the Excom.

GRSS Chapter Meeting

Date: Wednesday, January 11, 2012
Time: 4 PM
Location: Carlson Auditorium, Carlson Building (Bldg 76), RIT Campus
Title: The National Ecological Observatory Network's Airborne Observation Platform - integrating hyperspectral and lidar remote sensing for vegetation assessment
Speaker: Dr. Tom Kampe, Scientist & Product Team Lead for NEON AOP

Abstract: One of the National Ecological Observatory Network's (NEON) goals is to provide detailed aerial data about regional landscapes and vegetation. This will be accomplished via the remote sensing arm of NEON, called the Airborne Observation Platform (AOP). The AOP platforms will consist of instrumentation deployed on three aircraft that fly scientist-defined and routine patterns over all NEON sites. The aircraft-mounted instrumentation includes an imaging spectrometer operating in the visible to shortwave IR spectral region, a waveform light detection and ranging (wLiDAR) instrument, and a high-resolution digital camera. The imaging spectrometer is used to create an image of the ground at narrow wavelength bands in the visible and short wave infrared parts of the light spectrum. The wLiDAR sends out a laser pulse and measures the time difference between the outgoing and returning light to determine the structure of vegetation and buildings below. The digital camera provides detailed aerial views of the regional landscape. The AOP instrument suite will provide regional observations of land use, vegetation structure, biochemical and biophysical properties of vegetation, and ecosystem responses to changes in land use, climate, and the movement of invasive species. These observations will provide a means for scaling data taken from small areas on the ground at all of the NEON sites to the continental scale. The observations of the AOP, in addition to data collected via other NEON programs, will allow scientists to study ecology at a continental scale. The talk will provide an overview of NEON and focus on the AOP's systems and algorithm development.

Biography: Tom Kampe is the Airborne Observatory Platform (AOP) Instrument Scientist responsible for the NEON imaging spectrometer and science algorithm development and validation. Prior to joining NEON, Inc., Tom was a Staff Consultant in Electro-Optics with Ball Aerospace & Technologies Corp., where he was instrumental in the design and development of earth remote sensing systems including Quickbird, CALIPSO, and conceptual designs for several ESSP missions. He served as the Principal Investigator on the NASA-funded Space-borne Infrared Atmospheric Sounder for Geosynchronous Earth orbit (SIRAS-G) Instrument Incubator Program and was the lead for IR imaging spectrometer technology development. From 1993 to 1996, he was with the Santa Barbara Research Center, where he served as Optics Lead on the MODIS instrument.
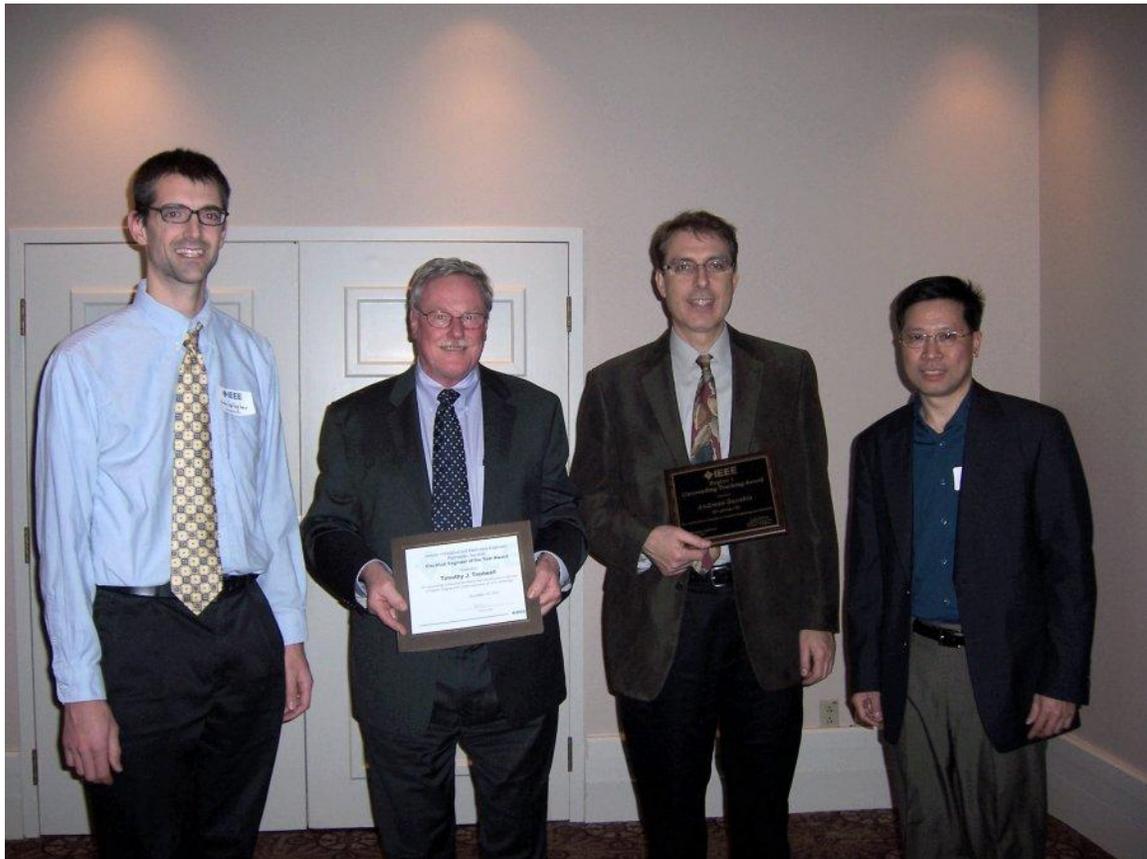Tom holds several patents on hyperspectral technology. He holds a B.S. in Physics from UCLA and M.S. and Ph.D. degrees in Atmospheric and Oceanic Sciences from the University of Colorado, Boulder.

Rochester Section Members Honored

Andreas Savakis (RIT): IEEE Region 1 Outstanding Teaching Award (for Contributions to computer engineering education and multimedia). The Rochester Section is part of Region 1, which encompasses the Northeast United States.

Tim Tredwell (Carestream Health) received the IEEE Rochester Section *Electrical Engineer of the Year Award* (also known as the Silver Dollar Award) for "Contributions to Digital Imaging and Commercialization of CCD Technology."

The purpose of the "Rochester Electrical Engineer of the Year" award is to recognize significant efforts on the part of electrical engineers who work in the Rochester area and to provide potential national recognition for deserving local people.

From left to right:, Andy Gallagher, Awards Chair, Tim Tredwell, Andreas Savakis, Alex Loui, Section Chair. (Dec. 14, 2011)

News from IEEE-USA – Free Benefits

As a special benefit of IEEE membership IEEE-USA offers a different free e-book each month.

Engineers' Guide to Lifelong Employability: What Are You Worth?, prepared by the IEEE-USA Employment and Career Services Committee, gives the reader a road map to calculate the book value of an electrical engineer. It highlights the IEEE-USA 2006 Salary Survey showing the differences in salaries according to education, years of experience with the same employer, management responsibility, those at large companies, geographical area and industry.

In *What Are You Worth?* the reader will also find tips on negotiating their compensation, negotiating bonuses, and evaluating their offer. *Engineers' Guide to Lifelong Employability: What Are You Worth?* can be downloaded for FREE through 31 December. Non-member price is US$5.99.

From 1 January to 31 January 2012, the IEEE-USA free monthly eBook for IEEE members will be, *The Best of Today's Engineer -- On Consulting (Vol. 1)*.

IEEE members can purchase other IEEE-USA E-Books at deeply discounted prices and download other free e-books.

IEEE Joint Chapters Meeting date announced

One of our major Spring events is the annual Joint Chapters Meeting. This year, it will be held on Wednesday, April 4 at the RIT Inn and Conference Center. Put it on your calendar now.

The keynote speaker will be Mark Gabriel - well known author and speaker on issues in the energy industry. His book, Visions for a sustainable Energy Future (Fairmont press) won the Indie Award for Excellence in Environmental writing. Mark is a Senior Vice President with Halcrow Inc., and consults with leading utilities and energy companies in both the water and power business. He is a frequent speaker and management consultant.

The five top ways to improve the IEEE

Here are the top recommendations for IEEE, worded exactly as they were voted upon by the 294 primary section delegates during IEEE Sections Congress, held 19 to 22 August in San Francisco.

- IEEE to develop a comprehensive long-term strategy to increase the number of next- generation youth pursuing science and engineering careers.
- As members maintain their IEEE membership over their years, IEEE must reward them for their loyalty. Rewards ought to be tangible and useful and can be done simply and inexpensively. Create Global Fidelity programs including: (a) continued membership recognition for 5-10-15-20 years of membership (b) bonus for specific benefits (e.g., reduced fee, IEEE merchandise, etc.).
- IEEE membership (including e-membership) should include a society membership as part of the basic membership fee.
- Increased support to students in technical activities with grants to attend conferences and organization of technical competitions.
- To encourage interest in pre-university students in engineering careers, IEEE to publish a subscription periodical (paper or electronic) targeted to high school students that highlights engineering activities of interest to those students. The periodical should also have articles promoting the benefits of an engineering career and what the students can do in college to get involved with IEEE.

Interested in Gaming?

IEEE.tv includes several videos produced by IEEE Spectrum that cover different aspects of gaming:

- *Surgeons Got Game* shows how video games are making surgeons better at their jobs.
- *Your Digital Clone for Games, Videos, and More* explores how Big Stage, now part of Image Metrics facial animation software, lets you create and customize a 3-D avatar from simple snapshots of a face.
- *A Gaming Glove That's Fast Enough for Pros* features the Peregrine glove, which relies on conductive strips to replace numerous hot-key commands with simple hand gestures.
- *Video Game Workout* discusses how games can help children get exercise.
- *Surround Sound Headphones for Realistic Gaming* shows how an acoustics engineer uses waveguides to implement a true directional sound field within the privacy of headphones.

New Face of Engineering College Edition

Jeremy Blum, an electrical and computer engineering major at Cornell University is the first IEEE student member to be recognized as the IEEE/IEEE-USA's "New Face of Engineering College Edition."

Administered by the National Engineers Week Foundation, "College Edition" recognizes third-, fourth- and fifth-year students enrolled in a Bachelor of Science engineering program at an ABET-accredited college or equivalent international institution with a minimum 3.0 grade-point average. Winners are honored for academic excellence, leadership within student organizations, outstanding communication skills, non-engineering related community service and participation in the engineering industry.

Blum is the founder and director of Cornell University Sustainable Design (CUSD), an interdisciplinary 150-member team that pursues environmentally inspired design-build projects. One project was a schoolhouse in South Africa. Blum also built the control system for a solar-powered house that entered the 2009 U.S. Department of Energy's Solar Decathlon. He is leading an effort to build a sustainability research facility at Cornell. He has released hundreds of videos, tutorials and projects on his YouTube channel (www.youtube.com/user/sciguy14). Between that and his blog (http://www.jeremyblum.com/blog/), the senior has tens of thousands of online followers.

Blum enjoys sharing his zeal for engineering with children. In November he and other CUSD students taught youngsters at the Brooklyn (N.Y.) Children's Museum how to re-purpose soda bottles into hanging gardens. Last summer he taught several classes at the Harlem Children's Zone about sustainable engineering and renewable energy.

"When I'm teaching young kids about engineering, I always start with this: 'engineers change the world,'" Blum said. "I then go on to explain that electrical engineers are responsible for many of the things they likely take for granted, like iPods, computers, cell phones and more. I also tell them that engineers are problem solvers. When presented with information, an engineer's job isn't just to analyze it but to take that data and do something unthinkable and innovative with it."

Blum thinks his IEEE membership has been greatly beneficial. "Being a member of IEEE has been critical for expanding my network and meeting other amazing people whom I've been able to work with on various projects," he said. "I'm consistently amazed by all the smart electrical engineering students and teachers at Cornell, and IEEE has been the ideal place to find them. I also think having access to IEEE's vast network of technical papers has been invaluable in conducting my research."

The IEEE/IEEE-USA portion of the "College Edition" contest was open to IEEE student members around the world. For more on all the winners, see www.facebook.com/CollegeEdition.

(Some new items have been reprinted, with permission, from The Institute)

Are you an Independent Consultant? Let IEEE-USA Help.

IEEE-USA continues to improve its services for IEEE members who are consultants or are considering becoming one. If you are already a consultant and are not listed in the IEEE-USA Consultants online searchable database you should join immediately. This database has a very powerful search engine that allows thousands of potential clients and employers find your profile.

Why list with IEEE-USA?
There are many other business-oriented social networks, so why list with IEEE-USA? Hiring managers have told us that they are more likely to hire IEEE members than random engineers. For over 20 years, members have asked to have their names listed in the consultants directory which is now an online searchable database. IEEE members have reported to us that inclusion in an online searchable database with other IEEE colleagues provides additional credibility to their skill, experience and background.

How much will it cost me and what do I get?
For US$79 a year, you will be able to post your professional consulting profile on the IEEE-USA Consultants Database. Also, until the end of 2011 were offering a free eBooks 2011 IEEE-USA Consultants Fee Survey Report for those who sign up in the IEEE-USA Consultants Database.

What if I only receive one job from the listing?
Members have told us that they are not sure they want to spend the money to list in the database. Other members have told us, "How can you not!" For US$79 a year, you give yourself the opportunity to be found by potential employers and clients. Just one job offer will more than cover the US$79 that you will pay for these services.

How do I sign up?
Go to www.ieeeusa.org/business/consultants/ and sign up today.

If I have more questions, who can I contact?
E-mail Daryll Griffin, of IEEE-USA, at d.r.griffin@ieee.org or call him at +1 202 530-8337.

IEEE-USA Webinars

On 19 January, IEEE-USA is partnering with the (US) Small Business Administration (SBA) to put on another webinar to showcase SBA services offered to entrepreneurs. **SBA Loan Programs: How to Obtain Financing for Your Business** will provide a review of the different kinds of SBA loan programs. IEEE-USA is following up with another exciting career-based webinar, **Presenting a Positive Image.** This interactive webinar will help you learn about the four key elements of your image:

- Physical appearance
- Actions
- Communication
- And your online persona

Please go to the [IEEE-USA webinar page](#) to register for this event.

Still more IEEE membership benefits

IEEE and Rochester Institute of Technology (RIT) have partnered to deliver online continuing education opportunities.

- ➢ Getting your credential from RIT makes a difference.
- ➢ IEEE members enjoy application fee waiver (a $50 savings)
- ➢ IEEE members receive a 10% tuition reduction (save over $300 per course for most graduate-level classes)
- ➢ Recognized by U.S. News & World Report magazine as the #1 comprehensive university in the North for academic reputation and as one of America's Best College Values
- ➢ Courses taught by same faculty who deliver campus programs

To qualify, candidates must be a current IEEE member

For more information, please go to http://www.rit.edu/emcs/ptgrad/landing/2009/ieee.php or, contact Kandice King at 585-475-2229.

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