

Chairperson's Message

2012 has been another exciting year for the IEEE Schenectady Section. We have added the **Dielectrics and Electrical Insulation Society (DEIS)**, initiated & chaired by Professor J. Keith Nelson. This brings our section to 9 societies and one affinity group.

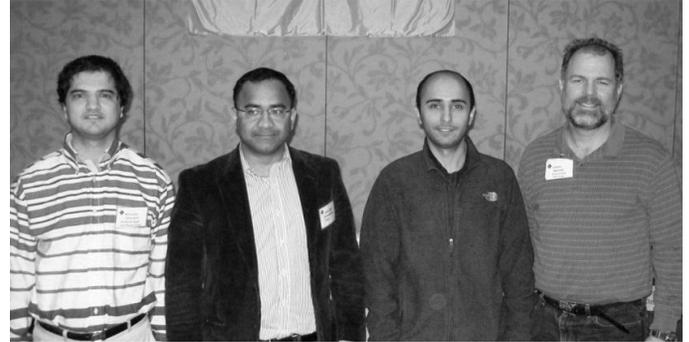
The section has already hosted twelve well-attended events up to this point so far, with additional two more coming up in November. The Industrial Application Society had joint programs with WIE & EBMS and with PES by Dr. Daniel Dotta, a visiting professor to RPI. Thanks to IAS chapter chair, Siavash Sadeghi, who made these events happen. The Signal Processing Society has brought the distinguished speakers John Apostolopoulos, HP Labs and Ton Kalker. Thanks to David Doria, SPS Chapter Chair for his continuing effort.

Many thanks to Prof. Keith Nelson for initiating the new DEIS chapter and inviting international distinguished speakers such as Dr. John Densley from Canada, and Prof Hitoshi Okubo, Nagoya University, Japan.

The 72nd Steinmetz Memorial Lecture held on May 1st featuring the renowned professor Mildred Dresselhaus from MIT. The section is thankful to Prof. Cherrice Traver, the committee chair and her team for the great and successful memorial event. Thanks to Lisa A. Shay, our Area Chair, for welcoming speech on behalf of the section.

Continuing to our tradition, the section has sponsored the Future Cities completion in January. Marc Happes & Brent Vild volunteered as event judges and we presented the award for **“EXCELLENCE IN LOW IMPACT ENERGY GENERATION AND USE”**. The Future Cities Competition is sponsored by the Professional Engineering Society, as is the National Engineers Week conference that is also supported by our section's volunteers. Jamie Barrett reported a significant number of IEEE member's attendance.

The section also acknowledges Judy Kilday for continuing efforts to set up successful rapid networking programs targeting students and young professionals. Also thanks to



Aboozar Ghavami, Loken Bam, Ali Mohammadpour and Jamie Barrett attend the Region 1 meeting in March

Judy for establishing joint events with ASME (American Society of Mechanical Engineers).

The section also attended to IEEE Region 1 winter meeting held in Hartford, CT, during 9 to 11 March. Myself, Jamie Barrett (PES Chair), Maja Harfman (MD Chair), Aboozar Ghavami, Ali Mohammadpour and Keith Nelson, IEEE Director, attended the meeting events. Thanks to those students from HVCC who also participated in the student conference.

We have prepared the nominations for the 2012 Executive Committee. and Society Chapter leadership and welcome all of you to engage us, volunteer, and help us to serve the community. Special thanks to Kristin Short and Lou Tomaino for their committed service for the section. Also thanks to David Doria for giving a new look to the section website (<http://sites.ieee.org/schenectady/>). As usual, the nominated individuals will be elected by acclamation at our holiday luncheon in early December. Keep checking our section's website and your email for the luncheon announcement.

Finally, I would like to thank all the volunteers for their dedication and making our section again one of the most active sections in the Region.

All the best,
Loken Bam
Chair, IEEE Schenectady Section

72nd Steinmetz Lecture

On May 1, 2012: the Schenectady Section and Union College jointly hosted the 72nd Steinmetz Memorial Lecture. The venerable Professor Mildred S. Dresselhaus, Institute Professor of MIT, presented "The Promise of Nanomaterials for Thermoelectric Applications". Prof. Dresselhaus gave an overview of the world energy outlook and the need for sustainability with respect to the growing global energy needs. Thermoelectricity has played a small role on the energy scene in the past, but with an increase in the thermoelectric conversion efficiency, she forecasted that the thermoelectric materials are likely to play an increasing role in the future. She also discussed broad challenges facing the material physics field and within this context, a discussion of the promise of nanomaterials in addressing those challenges. Finally, she also highlighted the promise of nanostructures for wider practical applications and for achieving further enhancement in the future based on present knowledge and on advances in current scientific understanding.



Loken Bam, Schenectady Section Chair, Professor Mildred S. Dresselhaus, speaker, and Lisa Shay, Area Chair after the Steinmetz Lecture.

Tesla Award Facts: The Tesla award is a prestigious award given by the IEEE Board of Directors to individuals who make an outstanding contribution to the generation or utilization of electric power. In 2012 Manoj Shah joined the ranks of other Schenectady Section honorees Chuck Holley (1978), Dean Harrington (1981), MVK Chari (1993), and Sheppard Salon (2004). If allowed, we would also lay claim to James Kirtley of MIT (2002) who started his career in the Schenectady Section. Of 37 total award winners, 22 are from the USA and five are from Schenectady Section. Wisconsin edges out New York as the most-awarded state with six awards.

IEEE Notice

The IEEE Transactions on Nanotechnology (TNANO) publishes novel and important results in science and engineering at the nanoscale. It focuses on nanoscale devices, materials, systems, and applications, and on their underlying science. It is an interdisciplinary journal that covers all areas of nanotechnology. The hardcopy version is published bi-monthly, but accepted papers are published on the web as soon as they are submitted in final form.

TNANO publishes Research Letters, Regular Papers, and Correspondence Items. Research Letters must not exceed three printed pages. They are subject to the same thorough review process as Regular Papers, but receive priority treatment. A Research Letter that is accepted without major revisions is expected to be published on the web within 4 to 6 weeks of its initial submission.

Areas covered by TNANO include, but are not limited to:

- * Nano and Molecular Electronics
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- * Circuits and Architectures
- * Nanomechanics and Nanoelectromechanical Systems
- * Nanorobotics and Nanoassembly
- * Nanobiotechnology and Nanomedicine
- * Nanofabrication and Nanolithography
- * Nanometrology and Characterization
- * Computational Nanotechnology

The IEEE Transactions on Nanotechnology is actively soliciting paper submissions. To submit your manuscript to TNANO, please visit

<http://mc.manuscriptcentral.com/tnano>.

For further information on TNANO you may visit us at <http://tnano.org/>.

2013 Section & Chapter Nominations

Executive Committee

Chandra Reis, Section Chair

[creis \(at\) ieee.org](mailto:creis@ieee.org)

Maja Harfman Todorovic,

Vice Chair - Membership

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James Barrett, Vice Chair Treasurer

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Marc Happes, Vice Chair – Secretary

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Signal Processing Society

Fred Wheeler, Vice Chair

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Volunteers welcome!

Dielectrics and Electrical Insulation Society

Clive W. Reed, Chair

[reedcw \(at\) nycap.rr.com](mailto:reedcw@nycap.rr.com)

Yang Cao, Vice Chair

[yang.cao \(at\) ieee.org](mailto:yang.cao@ieee.org)

Women in Engineering Affinity Group

OPEN Volunteers welcome!

Education Society

Jonathan Ashdown, Chair

[jonashdown \(at\) ieee.org](mailto:jonashdown@ieee.org)

RPI Student Chapter

Partha Panwala, Chair

[panwap \(at\) rpi.edu](mailto:panwap@rpi.edu)

Richard Radke, Faculty Advisor

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Union College Student Chapter

Matthew Marchesani, Chair

[marchesani.m \(at\) ieee.org](mailto:marchesani.m@ieee.org)

John Spinelli, Faculty Advisor

[spinellj \(at\) ecse.rpi.edu](mailto:spinellj@ecse.rpi.edu)

We're on the web at:

<http://sites.ieee.org/schenectady>

**NOTE OPEN POSITIONS!
PLEASE CONSIDER
VOLUNTEERING! YOU WILL
GET MORE OUT OF YOUR IEEE
MEMBERSHIP AS AN ACTIVE
VOLUNTEER!!!**

Power Engineering Chapter

Bo Yang, Vice Chair - Secretary

[bo2.yang \(at\) ge.com](mailto:bo2.yang@ge.com)

Holden Tseeng, Vice Chair - Programs

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Ali Mohammadpour, Vice Chair –

Membership

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Computer Society

JC Kelleher, Chair

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Frank Wickham, Vice Chair

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Howard Halstead, Vice Chair

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Mehrdad Khalem, Vice Chair

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Industry Applications Society

Aboozar Ghavami, Chair

[aboozar_ghavami@yahoo](mailto:aboozar_ghavami@yahoo.com)

Brent Vild, Vice Chair, Secretary

[BrentVild \(at\) eaton.com](mailto:BrentVild@eaton.com)

Kumar Modepalli, Vice Chair

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Computational Intelligence Society

Xue Ya, Chair

[xueya \(at\) research.ge.com](mailto:xueya@research.ge.com)

Rui Xu, Vice Chair

[xur \(at\) ge.com](mailto:xur@ge.com)

Volunteers welcome!

Electron Device Society (EDS)

OPEN - Volunteers welcome!!

Engineering in Medicine and Biology Society (EMBS)

Milos Todorovic, Chair

[milos.todorovic \(at\) ge.com](mailto:milos.todorovic@ge.com)

Judy Kilday, Chair

[jkday \(at\) ieee.org](mailto:jkday@ieee.org)

Nominations

This newsletter communicates the Executive and Chapter officer nominations to the Schenectady Section Membership. Officers in uncontested elections will be elected by acclamation at the December-Holiday lunch meeting. Volunteers are always welcome and are usually offered an open or appointed position until the next election year. Additional 2012 nominations may be communicated to the Section Chair, however, contested elections will precipitate a mailed ballot.

We are considering an all-electronic e-mailed newsletter for next year! The paper newsletter costs as much as 3 free-lunch events! If you value your PAPER newsletter, please call or email Rebecca Nold (385-3883, r.nold@ieee.org).

MORE ON VOLUNTEERS

Appointed positions are not on the Executive Committee or any Chapter. They are not elected, but are appointed by the Section Chair, often with the help of the Nominating Committee. Your appointed volunteers are as follows.

Kristin Short, Consulting Treasurer
[k.short \(at\) ieee.org](mailto:k.short@ieee.org)

Rebecca Nold, Newsletter Editor
[r.nold \(at\) ieee.org](mailto:r.nold@ieee.org)

Cherrice Traver, Chair, Steinmetz Committee
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Lokendra Bam, Past Section Chair
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Lou Tomaino, Membership Chair, Meeting Coordinator
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Sina Afshari, PACE Chair
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Aisha Yousuf, Student Activities Chair
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Ali-Shervin Shahsavari, GOLD Chair
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Louie Powell, Section Liaison to Prof. Eng. Society
[Louie.powell \(at\) ieee.org](mailto:Louie.powell@ieee.org)

Karim Younsi., Awards Chair
[Younsi \(at\) research.ge.com](mailto:Younsi@research.ge.com)

Mehrdad Khalem, Webmaster
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Saber Azizi, Nominating Comm. Chair
[saber.azizi \(at\) ge.com](mailto:saber.azizi@ge.com)

OPEN, Industry Liaison

Neal Taylor, Section Historian
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2013-2014 IEEE-USA Government Fellowships

Each year, IEEE-USA sponsors three qualified IEEE members to serve as government fellows: one Engineering & Diplomacy Fellow and two Congressional fellows. The fellows spend a year in Washington – from September to August each year – serving as advisers to the U.S. Congress or key U.S. Department of State decision-makers. IEEE-USA's Government Fellowships link engineers with government, providing a mechanism for IEEE-USA members to learn firsthand about the public policy process through personal involvement.

The congressional fellowship consists of an appointment to the personal staff of a U.S. Senator or Congressman, or to the professional staff of a Congressional Committee. For an application Kit for the 2013-2014 Congressional Fellowship Program, visit:

<http://ieeusa.org/policy/govfel/congfel.asp>

The State Department fellowship offers an opportunity for an engineer to provide technical expertise to the State Department, and help raise awareness of the value of engineering input while learning about and contributing to the foreign policy process. For an application Kit for the 2013-2014 Engineering & Diplomacy (State Department) Fellowship Program, visit:

<http://ieeusa.org/policy/govfel/state.asp>

The postmark application deadline for 2013-2014 Fellowships is 8 February 2013.

Call for Contributions

The Current Source is always open for contributions for future newsletters. Do you have an article about a historical moment, a future event, or a notable discovery that might be of interest to the local IEEE community? How about a picture of some momentous occasion? Please contribute! We do however have to reserve the right to refuse any material of a commercial nature. *The Current Source* is published by the Schenectady Section of the IEEE. If you are interested in volunteering for *The Current Source* or wish to submit material for consideration, please contact the editor.

Selected 2012 Section Events

Developments in Technology for Manufacture and Repair of HV Rotating Machines	Electric Stimulation for the Repair of Long-Gap Peripheral Nerve Injury
Thinking Like An Inventor	Dimesimeter and Circadian Disruption in Persons with ADRD
A Social Mixer dedicated to Networking with a Purpose	Applications of Graphene in Energy Storage
Wide Area Measurement System in the Brazilian Interconnected Power System	Advances in Visual Capture, Client/Cloud Computing, and Immersive Environments
High Voltage DC Electrical Insulation Techniques	Social and Technical Aspects of Media Security

Lunch events are held on average once per month. Most members are receiving notices electronically for every event. If you are not, please [update your profile on the IEEE website](http://sites.ieee.org/schenectady/upcoming-events/). Events are also advertised on the local Section website at <http://sites.ieee.org/schenectady/upcoming-events/>. Please check often! Reservations are required due to the cost of the lunch (as paid by the Section). All lunch events are free for IEEE members who RSVP by the deadline,

EMBS - Schenectady Chapter

By Judy Kilday. Are you curious about interactions of light and health? Andrew Biermen of the Lighting Research Center at RPI definitely was interested in this topic. The focus of his work revolves around the need to understand how the visual and circadian systems work. The goal of improving health starts with learning how light affects your health. Today we cannot always prevent sickness so we still seek medical advice; in the future we may have find simple answers to solving or preventing our health problems.

The College of Nanoscale Science and Engineering (CNSE) at UAlbany is working on projects in biomedicine. The field of bioelectronics combines knowledge of biology, life sciences and electrical engineering. The research is laying the groundwork for the future of medicine. Guest speaker James Castracane is heading the work at the nanobioscience constellation at UAlbany. We were fortunate to learn about preventive healthcare and the future of biomedicine from Sarah Brenner, MD of CNSE in September 2011.

The IEEE EMBS chapter (Engineering Medicine and Biology Society) would like to hear more about inventions that help with long term health issues. The local chapter of the IEEE EMBS is a great place to present ideas and inventions that can improve and extend the quality of our lives. We would like to encourage more participation and community building in our EMBS chapter. If members are interested, contact enetschdy@gmail.com about planning events. I am interested in having regular meetings to discuss topics of interest in EMBS.

THE EMPLOYMENT NETWORK

By Judy Kilday. The busy lives of engineers require that we master survival skills including time management and scheduling. Our success often is determined by our ability to prioritize tasks so we can meet deadlines. How much time do we spend on career development and planning for our future? Is the networking we are doing at the IEEE monthly noontime meetings enough to sustain lifelong employability? Anne Sailes was a guest speaker at our December 2011 membership meeting, where she spoke about 'Networking with Purpose'. Her book reviewed the basics of professional networking, and was founded on the statement 'It is not what you know it is who you know.' This is not a new concept or an earthshattering idea. The statistics show that job search without networking does not work as well. The numbers are: that 75% of all jobs are found through networking and the hidden job market. The trend towards information gathering and knowledge building may not be all it takes to land a new job or get a promotion. The new online job boards are deceptive and lead a job seeker into thinking a hiring manager will read their resume. Only 10% of all job seekers find jobs using job boards.

If you are interested in sharing information about building relationships through networking, or learning more about career products and services offered by the IEEE, attend our meetings on Saturdays at the Edison Tech Center in Schenectady. Send an email to enetschdy@gmail.com for more information.

Engineers Week Preview

Louie Powell lpowell1@nycap.rr.com is the Section liaison to the Society of Professional Engineers and is participating in the Capital District E-Week conference steering committee. Louie reports that E-Week will be Thursday and Friday, 14/15 February 2013 at the Marriott on Wolf Road. The conference seeks to promote the engineering profession to the public. It also offers professional development for all engineers and formal PDH credits that professional engineers need for certification. NYSSPE, an active sponsor of e-Week, will be evaluating presentations for approval of PDH credits.

Several of the sessions are on electrical engineering topics, and Louie would like to have ten electrical presentations so that there is a full two-day program for those of the electrical persuasion. **Section members are asked to consider presenting a topic at the conference.** Louie is also looking for moderators for the electrical sessions. **We will need two moderators for each day**, so there is an opportunity for up to four people to get involved in e-Week on this basis. Please contact Louie Powell for information on volunteering.

NYSED now requires that Professional Engineers seeking renewal of their registration have at least one PDH in engineering ethics. The plan is to try to offer more than one ethics presentation in 2013 (and in fact, Louie has already submitted a presentation on ethical considerations in engineering documentation).

See <http://www.capitaldistrictweek.org> for more information on the event. All proceeds of the conference are used to support the Capital District Future Cities Competition and NYS Mathcounts program.



**Dr. John Densley (Speaker) and
Keith Nelson (Chapter Chair)**

New DEIS Chapter approved in Section

The IEEE Member and Geographic Activities (MGA) organization have recently approved a new DEIS (**Dielectrics and Electrical Insulation Society**) Chapter in the Schenectady Section. The Chapter was formed in June 2012 with the recognition of the plurality of electrical insulation interests in the area. Not only does General Electric have a group at the nearby Global Research Center, but The Knolls laboratory, National Grid, Philips, Siemens, vonRoll, and several other industrial groups are local stakeholders in the dielectrics business. Three local universities also have ongoing work in dielectrics. Drs. Keith Nelson and Clive Reed are currently the Chair and Vice-Chair of the new

Chapter.

An inaugural meeting was held on September 7th 2012, when Dr. John Densley (Arborlec Solutions in Canada) who is on the DEIS Distinguished Lecturer list, gave a talk on "Aging and Diagnostics of Extruded High Voltage Cables". The event was held at lunchtime (with lunch served) and was attended by between 50 and 60 IEEE members and guests. Dr. Densley's talk was aimed at engineering practitioners and reflected his lifelong experience in the insulation business with the National Research Council and at Kinectrics. The new Chapter is already making plans for 2013.



The Current Source

Newsletter of the Schenectady Section of the IEEE

*Be sure to attend the Holiday Luncheon and Introduction of Officers on
December 14! Watch for the email announcement!*

*We are considering an all-electronic e-mailed newsletter for next year! If you value
your PAPER newsletter, please call or email Becky Nold (385-3883, r.nold@ieee.org).*