

## Unraveling Tornadoes with Doppler Radar: Scientific Storm Chasing on the Great Plains



Date: **Friday, November 16, 2012**

Time: 1:00pm - 2:00pm

Speaker: Dr. Robin Tanamachi

Agenda: Informal networking will begin at 12:30am.  
Presentation will begin at 1:00pm.

Location: UW-Madison Engineering Centers Building  
1550 Engineering Drive, Room Number: 1025  
Madison, WI 53706

Menu: Pizza buffet provided: \$5 for IEEE members, \$10 for non-members, **free for students.**

RSVP: Deadline: Nov. 12. Go to [https://meetings.vtools.ieee.org/meeting\\_view/list\\_meeting/14157](https://meetings.vtools.ieee.org/meeting_view/list_meeting/14157)  
to register. Please send questions or difficulties to CJ Gervasi at: [cj@cgervasi.com](mailto:cj@cgervasi.com)

*Non-member guests are always welcome!*

### Abstract

Mobile Doppler radar, which allows scientists to measure the destructive winds of a tornado remotely, has proven to be a crucial tool for understanding the dynamics of tornadoes and the storms that generate them. A brief review of the use of mobile Doppler radar in tornado research will be provided, emphasizing the speaker's own experiences participating in severe weather research campaigns, including Project VORTEX2 (2009-2010). Several different mobile radar designs, with their inherent advantages and drawbacks, will be explored. Some recent scientific advances in understanding of tornadic storms resulting from analysis of mobile Doppler radar data will be enumerated.

### Biography

Dr. Robin Tanamachi is a research meteorologist specializing in the collection, analysis, and assimilation of mobile Doppler radar data collected in severe storms. After receiving her bachelor's degree in Atmospheric and Oceanic Science from the University of Wisconsin – Madison in 2001, she completed her graduate studies in Meteorology at the University of Oklahoma (M.S. 2004, Ph.D. 2011). Dr. Tanamachi is currently a National Research Council postdoctoral fellow with the National Severe Storms Laboratory (NSSL) in Norman, Oklahoma. Since 2002, she has participated in severe weather research campaigns, including VORTEX2, and has lead-authored several peer-reviewed publications. Dr. Tanamachi aspires to be a role model for women in science, and advocates dissemination of scientific advances via social media.

### Ethics Seminar!

Get credit for Wisconsin's new ethics continuing education requirement for PEs.

When: November 7th; 10:30 am to 1:00 pm

Where: Promega BioPharmaceutical Technology Center

How: Check-in starting at 10:00 am; 30 minute lunch in the middle of the seminar

Who: Laura Grossenbacher, PhD and Howard Rosen, PhD

UW-Madison, Dept. of Engineering Professional Development

**Pre-registration is strongly encouraged** -- see next page for full details.

### IEEE Entrepreneurs & Consultants Network, Madison Networking Meeting

Date: **Thursday, December 6, 2012**

Time: 12:00pm to 1:00pm

Purpose: Presentation, topic TBD.

Location: TBD

Parking: TBD

Process: Members are encouraged to make introductions, describe endeavors, and make request for: contacts in target companies, needs, resources. Bring your elevator speech and rolodex!

RSVP: Tim Chapman ([PrettyGoodGUIs@TrueNym.NET](mailto:PrettyGoodGUIs@TrueNym.NET))

## Ethics Training for PEs

Date: **Wednesday, November 7, 2012**

Time: 10:30am - 1:00pm

Speaker: Laura Grossenbacher, PhD and Howard Rosen, PhD.

Agenda: Pre-registration will begin at 10:00am.

Presentation will begin at 10:30am.

Location: Promega BioPharmaceutical Technology Center  
5445 E Cheryl Pkwy, Room Number: Auditorium  
Fitchburg, WI 53711



Menu: Pizza buffet provided: \$5 for IEEE members, \$10 for non-members, **free for students.**

RSVP: Deadline: Nov. 2. Go to [https://meetings.vtools.ieee.org/meeting\\_view/list\\_meeting/14397](https://meetings.vtools.ieee.org/meeting_view/list_meeting/14397) to register. Please send questions or difficulties to CJ Gervasi at: [cj@cgervasi.com](mailto:cj@cgervasi.com)

*Non-member guests are always welcome!*

### Certificate Information

This course is approved for 2 professional development hours and fulfills the requirements for Professional Conduct & Ethics in all states (except FL). Attendees will receive University of Wisconsin-Madison certificates of attendance to document meeting the requirement. As of 2012, Wisconsin requires 30 hours of continuing education every two years, of which 2 hours must be in the area of Professional Conduct and Ethics. The complete rules from the WI Department of Safety and Professional Services (formerly Department of Regulation and Licensing) can be found at: [https://docs.legis.wisconsin.gov/code/admin\\_code/a\\_e/13.pdf](https://docs.legis.wisconsin.gov/code/admin_code/a_e/13.pdf)

### Abstract

This course will provide two professional development hours, satisfying the ethics requirement for professional engineering licensure in Wisconsin. After completing this seminar, attendees will be more aware of the fundamental canons of a recognized Code of Ethics for Engineers (particularly the IEEE code). They will recognize when they are facing a complex ethical dilemma, and be able to identify stakeholders and potential consequences for them (long-term costs, safety concerns, violations of privacy or rights, breaches of contracts, breaches of confidentiality, conflicts of interest, etc.). They will be asked to discuss and analyze situations involving multiple conflicting personal, professional, and ethical obligations.

### Biography

Howard Rosen is a Program Director in the Department of Engineering Professional Development, College of Engineering, at the University of Wisconsin-Madison. He specializes in developing continuing education programs on issues in public works infrastructure. His academic research interest is in the dynamics of technological development and organizational change. He has written and taught extensively on these subjects. Rosen received his doctorate from the Division of Social Sciences of the University of Chicago. He was a member of the Stanford University (Program in Values, Technology & Society) and on the faculty of the Illinois Institute of Technology. While at the Illinois Institute of Technology, Rosen was a member of the Center for the Study of Ethics in the Professions. He developed and taught the Center's first class on Engineering Ethics and was co-author of A SELECTED ANNOTATED BIBLIOGRAPHY OF PROFESSIONAL ETHICS AND SOCIAL RESPONSIBILITY IN ENGINEERING. As a member of the Department of Engineering Professional Development at the University of Wisconsin-Madison, he continues to teach a course on "Ethics in Public Works".

Laura Grossenbacher is Director of the Technical Communication Program in the Department of Engineering Professional Development, College of Engineering, at the University of Wisconsin-Madison. She holds a Ph.D. in English from the University of Texas at Austin, and has been teaching courses in engineering communication at UW-Madison for sixteen years. She has done consulting work in proposal writing for private engineering firms (such as HNTB, Inc. and Affiliated Engineers, Inc.) and has taught communication and ethics as part of the UW-Madison College of Engineering study abroad programs in both Toulouse, France, and Hangzhou, China. She is an active member of the Association for Practical and Profession Ethics, serving as a judge at their National Ethics Bowl collegiate competition since 2003. Her particular interests within engineering ethics have been informed by her work abroad and by her development of case studies for a capstone course she teaches for undergraduate engineering students, Current Issues in International Engineering. She has given several professional presentations on issues in engineering ethics, most recently at the APPE Conferences in 2011 and 2012 and at the Congress for Social and Ethical Implications at Arizona State University in November 2011. In January 2012, she was invited ethics faculty for the "NNIN Winter School," a two-week intensive study-abroad program held at UNICAMP, Brazil, designed for outstanding US and Brazilian graduate students, sponsored by the NSF.

## SECTION Meetings

The third Thursday of Jan.-May and Sep.-Dec. is reserved for a meeting to provide recent research, developments, trends and/or innovations in one of our membership's technical areas.

## NETWORKING Meetings

The first Thursday of even numbered months is reserved for a meeting to provide networking opportunities for members who are consultants or entrepreneurs. Bring your elevator speech and rolodex!

## Section Meeting Schedule for 2012 (schedule subject to change)



January 19, EU e-Freight Software Initiative  
February 16, Patent Law  
March 15, Reverse Electrowetting  
April 27, Signal Processing  
May 17, Electricity Nanogenerators  
May 22, Annual Wind Farm Tour  
August 16, Why does my Design fail EMC?  
September 20, Optimal Inductor Solutions  
October 18, International Trademarks

**November 7, Ethics Training Seminar**  
by Laura Grossenbacher & Howard Rosen

**November 16, Unraveling Tornadoes with Mobile Doppler Radar** by Robin Tanamachi

**December 20, Why Reference Models are Crucial to e-Logistics** by David Marca

## Networking Meeting Schedule for 2012 (schedule subject to change)

February 2, TBD  
April 5, TBD  
June 7, TBD  
August 2, TBD  
October 4, TBD  
December 6, TBD

**BadgerBots.** In October several members of our board visited the BadgerBots facility in Middleton. We were impressed at how excited the students were about engineering. Anyone who thinks that schools focus too much on sports and not enough of science, technology, engineering, mathematics should visit a BadgerBots event: training kids for the kind of jobs that are plentiful. Some of the students are also interested in business and participate because they understand business growth is related to technology.

**BadgerBots Sponsorship.** The students told us that they and their mentors help parents get past the sticker shock of asking families spending \$1000 per year on an extracurricular robotics program. For some families, though, it goes beyond sticker shock to being prohibitively expensive. They made a case that they can identify those in real need and, With more funding could, allow them to participate. Our Madison Section of IEEE voted to provide \$2000 funding for this purpose.

**Evening Social.** On October 11, we had our first evening social event. Even though a few people attended. It was surprising even in our small group how many of us knew some source, potential client, vendor, or job opportunity that might help others. Even in today's world of social media, there's still a need for engineers to talk to one another in person to find out about ways we can help each other.

Badger Bots



Madison Section Social Event



**SELECTION OF OFFICERS**

At the December monthly meeting, the IEEE Madison Section conducted its annual officer elections prior to the presentation:

**JOB BOARD AREA (NEW!)**

Check out [www.WIEES.com](http://www.WIEES.com) for electrical engineering jobs in Madison and the surrounding region. This site is maintained as a service for electrical engineers.

Jobs are displayed starting with the most recent postings first. You can filter results by location and job type. If you are hiring an electrical engineer in our area, for full-time or contract work, you can post the job in the Contact Us section.



**Nominations for 2013 Officers**  
It's that time of year again for Section members to nominate candidates for next year's Board of Directors. Send nominations to: [dmarca@openprocess.com](mailto:dmarca@openprocess.com).

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Mark Vincent, Secretary  
[mvincent@ecw.org](mailto:mvincent@ecw.org)  
Tim Chapman, Web Master  
[prettygoodquis@truenym.net](mailto:prettygoodquis@truenym.net)

**2012 MEMBERS AT LARGE**

Dennis Bahr  
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## IEEE Membership Level Upgrades

Those interested in upgrading their IEEE membership level should send their resumes or other information showing five years of significant performance in an IEEE-designated field to Charles J Gervasi ([cj@cgervasi.com](mailto:cj@cgervasi.com)). Madison Section Board will attempt to find Senior IEEE members knowledgeable in the applicant's area of practice who may be able to provide references. You are invited to attend the informal networking portion of the monthly Section meetings (starting at 11:30am) to meet the Section Board members and discuss intentions.

## 2012 Section Board Members

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## IEEE Madison Section Newsletter

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Our members have professional interests in computers, power engineering, signal processing, communications, industry applications and a number of other technical fields

For more information, contact Mitch Bradt at 608-263-1085 or [bradt@wisc.edu](mailto:bradt@wisc.edu).

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