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Madison Section Newsletter

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December 2020

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Upcoming Meetings

IEEE LMAG Virtual Tour: "The Wisconsin Science Museum"
Thursday, December 17th at 6:30 PM On-Line
[Event Info](#)

Section ELECTIONS: Help Us!

Review of Past Meetings

News/Announcements

IEEE-Madison Slack Channel

Sponsored Content: Join IEEE

Upcoming Meetings

IEEE Life Member Affiliate Group: "The Wisconsin Science Museum"

- Thursday, December 17th at 6:30 to 7:45 PM
- Virtual Tour
- Location:
    On-Line (Link will be emailed from you registration information)
- Please Register at the IEEE-Madison [event page](#).
- Sponsored by IEEE-Madison Life Member Affiliate Group

Talk: Museum exhibits are designed to inspire interest in science, technology, engineering and mathematics.

Visitors can see technological creations up close and in action and learn about them. We provide opportunities for visitors to touch and operate dynamic exhibits and use scientific tools and instruments. Materials, directions and guidance are provided for performing experiments, and building technological examples.

This virtual tour will show what the museum currently has to offer and describe our plans for the future.

Bio: Chuck Cowie, IEEE LMAG Chair and **Dave Nelson**, Wisconsin Science Museum will be conducting the virtual tour. Chuck has been a volunteer with the Wisconsin Science Museum since 2016. He is the 2020 chair of the IEEE Madison Section Life Member Affinity Group. He retired from Eaton Corporation with 30 years of experience in electric-drive engineering, marketing and product management. Dave is a UW-Madison Professor Emeritus of biochemistry. He is a co-founder of the Wisconsin Science Museum and chair of the museum's board of directors.

IEEE-Madison Section Elections

- **Officer/Volunteer Nominations:** The Madison IEEE Section Nominating Committee has published the following slate of Section officer Nominations:

  Chair - Hugh Schmidt
  Vice Chair - Mike Stemper
  Secretary - Open
  Treasurer - Matt Nowick
  Members at Large: Clark Johnson, Craig Heilman, Dennis Bahr

  E-Mail Election Ballot. You will be receiving a ballot soon in your email, so please watch for it. This is your chance to contribute to the IEEE Madison Section by selecting officers (all volunteers) who will be helping to bring you interesting meetings and events for the Section. Please vote! By voting, you help to recognize the effort that our volunteers spend on the section events.

Upcoming Meetings

- **LMAG Meeting:** We would have preferred to have an in-person tour, but with covid-19 restrictions in place, this is what we have to do. Find out about the new location adjacent to UW-Space Place and see what is in store for the future.

Review of Past Meetings

- **December 2nd PES/IAS Meeting:** "A New Grid Model Repository and New Ways to Securely Share Grid Data for Research and Industry" review by Don Neumeyer.

  A virtual meeting was held on December 2, 2020 which was co-sponsored by the Madison PES/IAS Chapter and the Arrowhead PES Chapter. Terry Nielson, Executive Vice President of GridBright made the presentation. There are many power industry challenges these days with increasing renewables, decentralized generation, cybersecurity threats and severe weather events. There is the need for better visibility, control, and optimization for the new markets. The old 9 bus and 123 bus IEEE models are not adequate any longer. Better public datasets are needed to test new algorithms and compare algorithms. Real data sets are difficult to compare and very restricted in publishing details or even to compare results. Results may reflect the individual data set more than the algorithm quality.

  Public Grid Data Sharing: Department of Energy (DOE)/arpa-e funded an $11M program from 2016-2018 with seven different projects for the creation of realistic information for the development of distribution and transmission algorithms. The BetterGrids Repository is a free library of public grid model data supported by a community of volunteers which enables grid researchers to collaborate and share data. Models can be submitted with up to 75 meta-data attributes being labeled. The models are reviewed and published. The BetterGrids Foundation is a non-profit organization which operates the GRID DATA Repository. It is a self-funded and who mission's is to develop better solutions for grid optimization: control, resiliency, and integration of renewables and distributed resources. The group built a sematic search engine using relatively generic and natural vocabulary. It also uses a big data 'graph database' approach where connectivity relationships between equipment matters. The phrase analyzer is loaded with power engineering "lingo" for ease of use. The repository has over 400 registered users in 45+ countries. University community constitutes over 50% of the users. There are over 454 distinct models, with 1,300 model files, constituting a total of 6,670 MB.

  Secure Grid Data Sharing: In 2019 DOE arpa-e awarded a cloud base solution for exchanging authorized participants to securely exchange sensitive grid data including CEII. This is being done while enforcing the applicable industry data protection and disclosure restrictions. The design meets the challenges of cyber-threats, more retailer business to business entities, and more distributed assets, sensors and control on the grid edge. The data exchange cases cover time frames from early interconnections in months, through real-time in seconds, and out to historical months-years market cases. GRIDEON is a service of the Collaboration for exchange applications to be executed in a secure, compliant, efficient manner. Mid-Carolina Electric Cooperative and MISO are a part of this collaborative. The testing is targeted for Q1, 2021 with production in Q4. Typical DR/DER integration has encryption at the "pipe" and not the message. For cyber-secure DER a virtual airgap is being created to collect the untrusted grid-edge source to convert into secure, clean reliable

data for operations. The GRIDEON Collaborative is designed to work with today's Emergency Management processes. Emergency Operations Centers that are becoming more virtual for various infrastructure constraints. A predefined "starter-kit" and file structure is based upon National Incident Command System (ICS) standards. The repository includes FEMA/DHS ICS forms documents and spreadsheets. It includes a full audit trail of all transactions.

A question and answer session followed the presentation. One can find and join the collaborative community at: www.bettergrids.org. The WebEx talk was recorded and is viewable at the link (with password) below.

Topic: "IEEE Madison WI PES/IAS -- A New Grid Model Repository and New Ways to Securely Share Grid Data for Research and Industry**"**
Password: cDQe3JAm
WebEx Recording: Viewing Link

- **November 19th PES/IAS Chapter Meeting:** " CEDAR RAPIDS AREA AUGUST DERECHO STORM: ELECTRICAL GRID IMPACTS AND RECOVERY"
  The meeting was sponsored by the Cedar Rapids IEEE Section on Thursday, November 19th at 4:00 PM. Bruce Lindholm from the Cedar Rapids Section sent out an email to all attendees with detailed links for talk slides and the WebEx recording. For details see this message from Bruce:

  Thank you everyone for joining our Nov 19 event. https://events.vtools.ieee.org/m/247108
  We promised you a recording of the WebEx and copies of the slides. Other useful website links are included as well.
  Go to this Google folder: Here
  All who requested PDH certificates during the event: your certificates were emailed on Friday Nov 27.

- **November 18th EMB Chapter Webinar:** "UW MADISON REVIEW OF COVD-19 RESEARCH"
  The meeting was a replay of the UW-Madison Alumni meeting, but the video was not properly broadcast. To see the full video, access it at this YouTube link.

News/Announcements

- **Volunteers:** We need volunteers for: YP, ECN, LMAG, PES/IAS, Section and EMB.

IEEE-Madison Slack Channel Established and Open to IEEE Members

- **What is Slack?**: Slack is a messaging application that works on most modern computing platforms, including cell phones. Many organizations use slack to quickly connect with people and conduct business. You can share files and create sub-channels for discussion. IEEE-Madison is using the free verison of slack that has limited features.
- **Executive Committee Presence:** Members of the IEEE-Madison Executive Committee have joined a Slack Channel and will be available to discuss issues you might bring up.
- **For more:** See this YouTube Video on Slack.
  Also see this site: What is Slack?
- **Get an Invitation to Join the IEEE-Madison Slack Channel:** at Slack Channel.
- **Access it here:** IEEE Madison Slack Channel

IEEE Madison Leadership

- Section Chair – Nate Toth
- Section Vice Chair – Hugh Schmidt
- Section Treasurer – Tom Kaminski
- Section Secretary – Mike Stemper
- Webmaster – Nate Toth
- PES/IAS Chair – Mike Stemper
- PES/IAS Vice Chair – Dan Ludois
- PES/IAS Secretary/Treasurer- Don Neumeyer
- EMB Chapter Chair – Dennis Bahr
- Life Member Affinity Group Chair – San Rotter
- Life Member Affinity Group Vice Chair – Charles Cowie
- ECN Chair – Matt Nowick
- Young Professionals Chair – Thomas Murphy
- Members at Large: Clark Johnson, Craig Heilman, Dennis Bahr

Membership Upgrades

Those interested in upgrading their IEEE membership level should be aware that the process has been streamlined with much of it on-line. The application process can start with your application as described on line here. You will have to provide the names and IEEE numbers for three Senior Members in your field. The Madison Section Chair (Nate Toth at tothnj@ieee.org) can help, or attend the informal networking portion of the monthly Section meetings to meet the Section Board members and discuss your intention to elevate.

About IEEE

The Institute of Electrical and Electronics Engineers or IEEE (read Eye-Triple-E) is an international non-profit, professional organization dedicated to advancing technology innovation and excellence for the betterment of humanity. IEEE and its members inspire a global community through IEEE's highly cited publications, conferences, technology standards, and professional and educational activities. It has the most members of any technical professional organization in the world, with more than 300,000 members in around 150 countries. The IEEE consists of 38 societies, organized around specialized technical fields, with more than 300 local organizations that hold regular meetings. Discover what IEEE Member Discounts can offer you. The Member Discounts portfolio consists of insurance products and programs for the home, office and travel, all at excellent group rates and reduced pricing. Visit IEEE Member Discounts to see what's available in your location and enjoy the savings. For more information, please visit: IEEE.ORG.

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