

## • Upcoming Events

### ◦ March Section Meeting: "LED Lighting: Innovation in the Marketplace"



- Date: Thursday, March 15th, 2018
- Speaker: Ingrid McMasters, LC
- Details: Food, Social Time, Lecture and Tour of ETC, starting at 5:00PM
- Pizza and Beverages will be served. \$5 Members, Students Free, Else \$10
- Please Register at the IEEE Madison Section [event page](#).
- Location: Electronic Theater Controls, Inc. 3031 Pleasant View Rd. Middleton, Wisconsin 53562
- **NOTE:** This is an EVENING Meeting!

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**Talk:** Ingrid McMasters will discuss the reasons why LED lighting is quickly becoming the most specified light source in the market and provide a reality check on the pros and cons of the technology. She will share some of the most common applications and identify some of the myths of LEDs. She will also touch on why LEDs can be difficult to specify and use when compared to traditional lighting technologies.

**Tour:** Following the talk we will have a tour of Electronic Theater Controls facility. ETC is a global leader in the manufacture of lighting and rigging technology for entertainment and architectural applications. Founded in Madison, Wisconsin, in 1975, ETC was a college project that grew into a major business, with Fred Foster as the current chief executive officer. ETC's international headquarters is located in Middleton, Wisconsin. The company also has offices in Mazomanie (Wisconsin), New York, Hollywood, Orlando, Hong Kong, Copenhagen, Ede (the Netherlands), Rome, London, Berlin, and Holzkirchen (Germany). ETC employs nearly 900 people around the globe.

### ▪ April ECN Meeting: "Tour of the Grainger Makerspace"

#### Entrepreneurs and Consultants Network



- Entrepreneurs and Consultants Network Meeting
- Professional Meeting
- Date: TBD (April 5th?)
- Fee: Free
- Location: Grainger Makerspace, Wendt Commons, 215 N Randall Ave, Madison, WI 53706
- Please Register at the IEEE-Madison [event page](#).
- Non-member guests are always welcome.



**Tour:** The Makerspace is the student-run, rapid prototyping facility within the Grainger Engineering Design Innovation Lab. This was all made possible through a multi-million dollar commitment from The Grainger Foundation. We are a community of designers and builders at UW-Madison run within the College of Engineering (CoE). Our facilities include 12,000 ft<sup>2</sup> of shop and flex space with a wide range of rapid prototyping equipment.

Largely student run, we strive to empower students and create a community immersed in emerging technologies and focused on creating innovative products. We are part of the CoE ecosystem of fabrication facilities, which includes the Makerspace (rapid prototyping), TEAM-Lab (precision machining, fee for service job-shop) and Visualization Suite (virtual reality and data visualization). These facilities together are over 25,000 ft<sup>2</sup>, run by 10 professional full-time staff members and ~50 student workers and contain millions of dollars of high-tech equipment. Students can build anything here: from micro to macro and from virtual to the physical.

### ▪ April Section Meeting: "Unmanned Aircraft Systems: Opportunities"



- Date: Thursday, April 19th, 2018
- Speaker: Dr. Chris Johnson
- Details: Food, Social Time, Lecture 11:30AM
- Pizza and Beverages will be served. \$5 Members, Students Free, Else \$10
- Please Register at the IEEE Madison Section [event page](#).
- Location: Sequoya Library, 4340 Tokay Blvd., Madison, WI 53711

#### Talk:

Dr. Johnson will discuss a short history of how drones have made the leap from defense to commercial applications in a very short time. He will talk about business opportunities, market segments and industry trends, and he will highlight risks and opportunities in light of the rapidly evolving regulatory landscape around drones.

#### Bio:

Chris Johnson is co-Founder and President of the Unmanned Aircraft Systems (UAS) Advocacy Network. He is an Air Force Veteran, commercial pilot for both manned and unmanned aircraft, and a certified flight instructor with a PhD in Engineering from the University of Wisconsin - Madison (UW) where he directs the UW Flight Laboratory, which is a Federal Aviation Administration (FAA) Center of Excellence for Aviation Research.

Johnson is an expert in system safety, regulatory compliance and data-management and analytics for the drone industry, and he routinely consults with large enterprise clients seeking to build internal UAS programs. Johnson is also an FAA Safety Team Lead Representative as well as a member of the FAA's Unmanned Aircraft System Safety Team (UAST) Data Science Working Group.

## ◦ Section News

- **January Section Meeting Review:** (Review by Charles Gervasi) At our January meeting, Dr. Younghyun Kim spoke about a technique for privately sharing an encryption key for medical devices. Kim told us about an episode of Homeland in which a hacker sabotages a pacemaker. This is not far-fetched. There are some medical products with controls that can be actuated by a wireless connection with no encryption. Former Vice President Dick Cheney had the wireless functionality of his pacemaker disabled due to these concerns.

One reason for not encrypting is to save power. Medical devices sometimes have no charging capability and require a medical procedure to replace that battery. A public shared key encryption scheme would require too much power. An alternative is to share the key using the vibrations of a haptic motor. Dr. Kim presented several methods for making access to implanted devices more secure. The detailed review with images is [here](#).

- **March Life Member Affiliate Group Meeting:** Andrea Hicks gave an excellent talk on the life cycle cost of products using LED lighting as an example. Things like the environmental impact and life cycle cost are not only a function of the manufacturing and design aspects, but also related to where the device is operated. Further the impact of the end-of-life recycling/disposal. Most of the interest in life cycle cost is being generated by manufacturers -- government impact is currently on the decrease.



Andrea Hicks and  
Grandfather-in-law  
John Hicks



## ◦ Upcoming Meetings

- **March Section Meeting:** This is a talk/tour held at ETC. Note that it is an **evening** meeting that pairs a lighting designer with a premiere Middleton based lighting manufacturer.
- **April ECN Meeting:** Will be a tour of the new Grainger Makerspace in what was formerly the Wendt Engineering Library --it has been re-designed as the Wendt Commons. Visit the web page for the facility [here](#).
- **April Section Meeting:** The University of Wisconsin is now offering a course: "EMA-601: Introduction to Unmanned Aircraft Systems" taught by Dr. Johnson where the students receive their FAA Commercial "UAV Pilot" certification as part of the course. UAVs are increasingly being used to perform engineering analysis, such as surveying roadways and checking environmental impact. Dr. Johnson will discuss the markets opened by UAVs and the risks and opportunities associated with sharing the airspace over our heads.

## ◦ Regular Meetings

### ▪ Section Meetings

The third Thursday of January through May, and September through December is reserved for a meeting to provide recent research, developments, trends and/or innovations in one of our membership's technical areas.

### ▪ Life Member Affinity Group

The first Thursday of January, March, May, September and November is reserved for a meeting on a topic selected from a broad range including such areas as technology, science, history, culture and leisure.

### ▪ IEEE-MSN-ECN Networking Meetings

- Purpose: Presentations, Discussions, networking
- Date: First Thursday of even-numbered months
- Time: 11:45 AM to 1:00 PM
- Location: Sector 67, 2100 Winnebago Street (East Side of Madison)
- Parking: Park in lot or on Winnebago Street.
- Process: Members are encouraged to make introductions, describe endeavors, and make request for: contacts in target companies, needs, resources.

## ◦ Membership 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 via email at [cj\(at\)cgervasi.com](mailto:cj(at)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.

## ◦ 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](http://IEEE.ORG).

## ◦ Madison IEEE Section

The IEEE-Madison Section of the IEEE is a section in Region 4 of the IEEE-USA organized to serve IEEE members in the Madison, WI area with over

600 members. The 2017 Officers and Board Members are Tom Kaminski - Chair, Nate Toth - Vice Chair, Charles Gervasi - Treasurer, Steve Schultheis - Secretary, Nate Toth - Webmaster, Tom Kaminski - ECN Chair, Dennis Bahr - Engineering in Medicine and Biology Chapter Chair, Chuck Cowie - Life Member Affinity Group Chair, San Rotter - Life Member Affinity Group Vice Chair, Scott Olsen - Membership Development Chair, Members at Large: Clark Johnson, Craig Heilman, Dennis Bahr, Sandy Rotter.

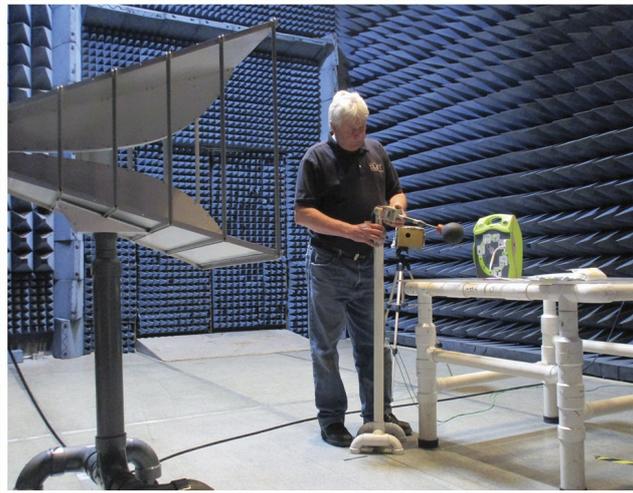
## ◦ Job Openings

Check out [WIEES.com](http://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 on the WIEES.com site.

## ◦ Sponsored Content

### **DLSEMC: Streamlined Wireless Testing**

## New Standards Required for EU Medical Compliance - CE Mark



This year will mark the withdrawal of the current 3rd Edition EN/IEC 60601-1-2 Medical Device EMC requirements. The new 4th edition standard has been published and can be used for any formal compliance testing program. This new standard has several changes and includes additional test requirements, including more stringent testing criteria, a greater emphasis on risk management requirements, higher immunity levels and multiple locations for intended use with different testing criteria to name a few. There is no grandfather clause for past testing and performance. D.L.S. offers a comprehensive transitional analysis to help determine the specific requirements needed to maintain CE compliance, and to confirm new products meet the new standard requirements. Contact us today.



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## ▪ Contact Us

The IEEE-Madison Section has a number of volunteer positions open if you are interested in helping out. Please direct any questions or comments to Tom Kaminski (Newsletter Editor) via email to [tjkaminski\(at\)ieee.org](mailto:tjkaminski(at)ieee.org).

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