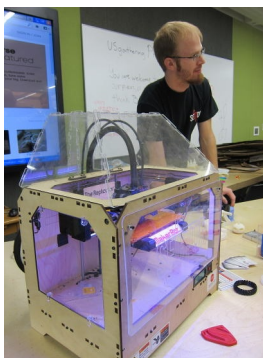


## ◦ Upcoming Events

### ▪ June ECN Meeting "3D Printing and Rapid

- [Madison Section Newsletter](#)
  - [Upcoming Events](#)
    - [June ECN Meeting "3D Printing and Rapid Prototyping"](#)
    - [June eLearning: "The Smarter Grid What is it?"](#)
    - [June Section Meeting: "Write Once, Read Forever: Truly Archival Storage"](#)
  - [Section News](#)
    - [IEEE-USA 2015 Annual Meeting In Milwaukee](#)
    - [Review of May's Events](#)
    - [Upcoming Meetings](#)
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## Prototyping"



- Date: Thursday, June 4th, 2015
- Speaker: Chris Meyer, Sector67
- Location: Sector67, 2100 Winnebago Street (East Side of Madison)
- Time: 11:45 AM to 1:00 PM
- Bring your own lunch. Beverages and snack items are available to purchase at Sector67
- Please Register at the IEEE Madison Section [event page](#).

Chris Meyer is a local expert on 3D printing and all things related to Hacker Spaces. He will give a brief presentation on the Sector67 3D printing technology and demonstrate how it is done. He will also discuss rapid prototyping of PC boards. If you are not familiar with Sector67, check out their web site [here](#). You will be amazed at the things that are happening at Sector67.

### ▪ June eLearning: "The Smarter Grid What is it?"



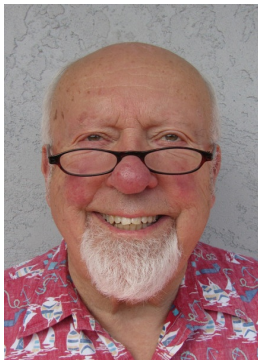
- Thursday, June 11th, 2015, **11:30 AM** (Note Time change!)
- Lecturer: Mark McGranaghan, eLearning Seminar
- Location: Madison College West Campus, Room 208  
302 S. Gammon Road  
Madison, WI 53717
- 0.1 CEUs, 1 PDHs Certified, free for IEEE Members, \$10 Registration for Non-IEEE Members
- Food and Beverage will be available for \$5 IEEE Members, \$10 Non-Members  
Non-member guests are always welcome.
- Please Register at the IEEE Madison Section [event page](#)

## Talk: Smart Grid 101: The Smarter Grid What is it?

— This eLearning Seminar describes the various definitions and focus areas of smart grid and explains their commonalities. It reviews the current state of smart grid applications and how these drive infrastructure requirements; the challenges in deploying smart grid; smart grid research, development, and demonstrations; and how industry is working together to build out the smart grid

### ▪ June Section Meeting: "Write Once, Read Forever: Truly Archival Storage"

- Date: Thursday June 18th, 2015, **11:35 AM**
  - Speaker: Clark Johnson
- Location: Madison Public Library - Sequoia Branch  
4340 Tokay Boulevard, Madison, WI 53711
- Time: 11:35 AM to 1:15 PM
- Food and Beverage will be available for \$5 IEEE Members, \$10 Non-Members



- Please Register at the IEEE Madison Section [event page](#)

### Topic:

In 1908 Gabriel Lippmann was awarded the Nobel Prize for a development he made in 1891: making full color images using silver halide black and white film. The images, many of which remain, display astonishing fully saturated colors. The speaker will discuss how the Lippmann process works, why it was never commercialized and its current implementation to permanently and unalterably store data. Applications range from very-long-term data archiving (centuries) to authentication of BIOS and boot programs to detect their illicit alteration.

### Mr. Clark Johnson:

is a physicist specializing in magnetics especially as it relates to data storage. He spent 9 years in the Central Research Laboratory of 3M Company involved with magnetics technologies and subsequently as entrepreneur founding several companies working in data storage, telecommunications and later in image capture, processing and display. ♦ One of these, Vertimag Systems, played a significant role in the development of perpendicular magnetic recording technology, now used in virtually all disk drives. Clark is currently a Director of Iowa Pacific Holdings, LLC, a short-line railroad holding company and president of its High Iron subsidiary. He is Senior Scientist at Creative Technology, LLC, which is commercializing WORF technology. He is a Fellow of the Institute of Electrical and Electronic Engineers (IEEE), former president of the Magnetics Society and holder of over 30 U.S. and foreign patents. He was a science advisor to the U.S. House of Representatives in 1988-89. He holds a BS and MSEE degree in Physics from the University of Minnesota.

## ◦ Section News

### ▪ IEEE-USA 2015 Annual Meeting In Milwaukee

The IEEE-USA Annual meeting was held at the Hilton City Center in downtown Milwaukee. ♦ There were a number of interesting talks and panel discussions, some of which are reviewed here. ♦

**What Makes Engineering Great: The Female Perspective** — The Saturday portion of the Annual Meeting started with a talk and panel about issues women face in engineering. ♦ Most of the women who spoke had a parent who encouraged them to go into engineering. ♦ Panelist Karen Pedersen said, ♦ Give your 6 year-old daughter an erector set rather than a doll. ♦♦

**Future Jobs: Solving the STEM Worker Shortage** — Edward Gordon gave the keynote talk about the future of labor market. ♦ Automation is shaking up the labor market. ♦ It is eliminating many jobs, but it is creating a need for more people with good science, math, and communications skills. ♦ Automation has amazing potential, but according to Mr. Gordon, we do not have enough people trained in STEM to put the technology to full use. ♦ He also mentioned that simplifying the H1B Visa process would not solve the problem because all regions of the world will see the same shortage of engineers and technicians. ♦

**Building Online Communities** — There was an afternoon session on building online communities led by Nick Lehotzky. ♦ The focus was on building local IEEE communities, such as those in the new IEEE Collabratec (see [here](#)), but much of it applies to anyone using the Internet to get the word out about something. ♦ Networking is always important, Nick says, when it's real, and it's never important when it's fake. ♦ The Internet makes fake networking seductive because it's so easy to keep track of how many people follow on various social networking systems. ♦ None of that means anything, though, if there is not a real connection behind it. ♦ Think of any page you manage as a magazine. ♦ All content should be relevant to your niche. ♦ It's okay to include content not directly related to the subject of the webpage, but you must somehow make it relevant by pointing how its relationship to the focus of the webpage. ♦ It's important to use analytics to see how many people click on posts. ♦ As long as you don't do it too often, there is no harm in trying something and watching analytics to see how well it does. ♦ A measure of how it does is Virality, which is Total Engagements / Total Reach. ♦ Engagements are ♦ likes ♦, comments, shares, etc). ♦ A good target is 1.5%. ♦ Sort posts according to above average, average, and below average virality. ♦ Look for elements associated with above average virality. ♦ Little things about a post to a site like Facebook can make a big difference. ♦ Many people don't check Facebook at work, at least according to Mr. Lehotzky, so it's better to post content there outside of normal business hours. ♦ People tend to respond to a post with a picture and a small amount of text. ♦ It's best if the text has ♦ pull ♦, which means it is phrased in a way to stimulate an emotional response. ♦ In the article itself, audiences are drawn to infographics. ♦ The goal is for the feed to provide an experience people only get from that feed. ♦

**Building Section Vitality** — This session discussed ways to build the Section's vitality, suggesting that the important thing is to plan events not **for** the section, but rather **by** the section. ♦ Encouraging members to participate through a variety of ways was more important than providing events. ♦ One suggestion was to recruit micro-volunteers, who, for example, call a limited number of IEEE members who have forgotten to renew their membership. ♦ Several ways were suggested to convert Student Members into full-time professional members. ♦ Another way to increase participation was to make personal contact with members by calling or writing a personal email. ♦ Attendees of the session also looked up the Section's member profiles and statistics using the SAMIEEE on line tools. ♦



## ▪ Review of May's Events

**Life Member Affinity Group Meeting** (Write-up by Chuck Cowie and Chuck Kime) — David Nelson, UW Professor and President of the Madison Science Museum and Olga Trubetskoy, Research Scientist and Board Member of the Madison Science Museum spoke to our new group on the Madison Science Museum. The museum is being created to celebrate Wisconsin contributions in science and engineering. David initially provided the rationale for establishing a museum. Among reasons he gave were the presence of science museums in other cities, the lack of a science museum to complement other museums in Madison, pragmatic shortcomings of the museums at the University of Wisconsin Madison, and lack of public recognition of the many highly-distinguished UW faculty in the STEM fields. He then outlined some of the envisioned guiding concepts for the museum, including a focus on modern touch-screen displays, a large display on imaging, hands-on use of past-century instruments, laboratory space, and loaned/traveling exhibits. One initial exhibit will be a powers of ten room that illustrates the range of the size and time dimensions encountered in scientific research. The exhibit progresses from subatomic particles and molecules through cells and bacteria to human scale things and geographic features and on to the planets, solar system and galaxies. Also, there will be a Wisconsin science and engineering hall of fame including notable scientists and engineers. The Museum is being constructed in the Madison College building at 211 N. Carroll Street. David reported on the initial financial support for the museum totally \$300,000 in donations and matching funds and indicated that Madison Science Museum is a 501(c) 3 organization. Individual and corporate contributions are welcome. David also expressed a strong interest in gifts-in-kind such as artifacts, instruments, documents and letters, photos, etc. Needs for volunteers are wide-ranging from acting as docents to designing and preparing exhibits and conducting archival research. Potential sources of volunteers include Madison academics and students and organizations such as IEEE. Olga briefly presented her past experience with the science museum in Boston and outlined potential exhibit ideas in which IEEE members ranging from the LMAG to Student Chapter members might be interested in participating. Examples include a thermal-imaging camera exhibit, LED-based infinity mirror, and a Wood's light exhibit (Robert Wood, UW professor from 1897-1901). More information on the Science Museum is available [here](#). If you missed the talk but are interested in hearing more, the Wednesday Night at the Lab presentation on the Science Museum has been recorded here: [WN@TL](#).

## ▪ Upcoming Meetings

Chris Meyer will speak on and demonstrate 3D printing and rapid prototyping on June 4th for the **ECN Meeting** at Sector67. The June **eLearning** event is on the TBD topic. The June **Section** meeting will feature Clark Johnson who has been working on archival storage technology that can last centuries. The full title of the talk is "Write Once, Read Forever: A Truly Archival Data Storage System Based On An Old Technology". The technology was first described in 1891 by George Lippman to record full-color images on black and white silver halide photographic film. Clark is Senior Scientist at Creative Technology, LLC, which is commercializing WOF technology.

There will be no IEEE-Madison Section Meeting in July and August. For the September Section Meeting, Anton Kapela from 5Nines will talk about the challenges of providing high-availability network and server infrastructure. The talk will be on Wednesday, September 16th at noon at the downtown Madison Library followed by a tour of 5Nines facilities at 222 West Washington Avenue.

## ▪ Volunteers Needed

**Micro Volunteers:** Do you have some time to spare to help IEEE-Madison Section? Perhaps you have a meeting topic that you would like to see us host and could find a speaker. Maybe you have time to call a few members who might have forgotten to renew their membership. Perhaps you can volunteer to help students with projects. Please consider sending some time helping with the Section activities. Let me know ([tjkaminski \(at\) ieee.org](mailto:tjkaminski@ieee.org)).

## ○ 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.

### ▪ 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: Sector67, 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.
- Contact: For assistance, call Tim Chapman 2 0 6 - 2 5 7 0

## ○ 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.

## o 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



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## o Madison IEEE Section

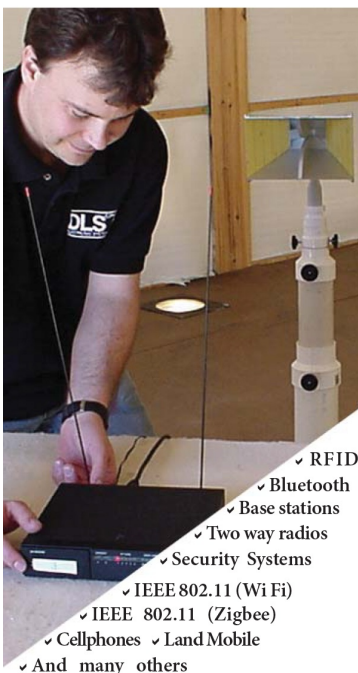
The IEEE-Madison Section of the IEEE is a section in Region 4 of the IEEE-USA organized to serve IEEE members in the Madison, WI area with over 600 members. The 2015 Officers and Board Members are Charles Gervasi - Chair, Steve Schultheis, Vice Chair, Tom Kaminski - Treasurer, Matthew Bartlett - Secretary, Timothy Chapman - Webmaster, Tom Kaminski - ECN Chair, Dennis Bahr - Engineering in Medicine and Biology Chapter Chair, Ann E. Thompson - Educational Activities Chair, Scott Olsen - Industrial Outreach Chair, Members at Large: Mitch Bradt, Clark Johnson, Craig Heilman, Sandy Rotter.

## o 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. Here is a sampling of the new job listings:

- Solar Project Manager and Senior Solar Technician in Madison
- Product Engineer in Milwaukee
- Electrical Engineer in Stoughton

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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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