

His most recent interest is overall related to the development of three-dimensional magnetic nanostructures by combined electrochemical/lithography techniques, and to unveil the magnetization reversal process and domain wall structure in individual and ordered arrays of magnetic nanowires and nanotubes as well as of antidot thin films. Research efforts are being addressed to the study of Co base cylindrical nanowires/nanotubes where the tunable magnetocrystalline anisotropy plays an important role.

◦ Section News

▪ Review of December Events

December Section Meeting “Audio and Computer music in the Present Age“ ♦ (Review by Charles Gervasi) ♦ Greg Taylor’s talk was called “Campfires Seen from Orbit” because it approached the subject from a philosophical view of how electronic music fits into music over human history. When Max, an early music creation software, started 36 years ago, it required a whole room of computing equipment to run. Now it runs easily on a laptop, making modern musicians think of a laptop as an essential musical instrument. New technology tends to affect music in unforeseen ways. Originally someone put a microphone on a guitar to make it louder. ♦ Imperfections like clipping or feedback became part of music and became more important than the original purpose of adding a mic. There is a modern type of music called Congotronics that uses older electronics repurposed playing traditional music from the Congo in completely new ways. ♦

Taylor talks about the broad question in technology of “what’s the next big thing?” As engineers we want to know because we have an interest in cutting-edge technology and there’s potential for great wealth. Taylor says the question is based on a false premise of a linear progression of technology. There is no “next big thing”. We have access to things down “the long tail”, not vetted by gatekeepers, and not geo-local. The talk touched on chaos theory of “attractors”. Starting with the phonograph, music has been getting easier and cheaper to record and transmit, making it seem natural for music to be free. The perception of the cost of music is affected by the cost of the media. Every new development in music technology influences music in unpredictable ways.

There are countless new pieces of musical hardware and software people are creating and sharing on the Internet. Taylor showed us an example of a keyboard with lights that is really nothing more than an I/O device for a computer that lends itself to music. There are musical instruments that run entirely on a tablet computer. In one example, the musician can drag things around on the screen to change the nature of the sound. In the past musical communities formed to develop music. They admitted or rejected people based on certain aesthetic judgments and biases of the members. These musical communities have gone online. They serve the same purpose as musical communities throughout human history except everyone can join regardless of initial judgments of members, opening music to people who in the past would have not been part of a community. This will affect music in unknown and exciting ways.



Photo: ♦ Greg Taylor’s Section Meeting Talk: “Campfires Seen from Orbit: Audio and Computer Music in the Current Age”

December ECN Meeting:

Was held on Thursday, December 3rd and included free pizza and snacks ♦ It was a social/professional “Meet and Greet” where attendees shared their background and had an opportunity to pitch what it is they do. Topics ranged from manufacturing temperature probes in China, to not exporting jobs to China. There was a particularly lively discussion of software job opportunities ranging from “I need one (Software Development)”, to “My job was exported to India (database Programming)” to “I see opportunities for the foreseeable future (Embedded Controllers)”.

▪ Upcoming Meetings

January Life Member Affinity Group Meeting: Chuck Kime will be giving a dynamite image and video presentation of his photos from Denali. ♦ Chuck has used time in retirement to polish his considerable skill in photography and videography. Don't miss it! Check out some of his work [Chuck Kime | Flickr](#).

January Madison Section Meeting: Professor Vasquez, the current President of the IEEE Magnetics Society will give a lecture on CoFe Nanotubes. **NOTE THE DAY** change — Monday rather than the usual third Thursday. ♦



▪ IEEE Madison Election Results

Madison Section Officer Elections: Chair: Charles Gervasi, Vice Chair: Matthew Bartlett, Secretary: Steve Schultheis, Treasurer: Thomas Kaminski, Members-At-Large: Sanford Rotter, Mitchell Bradt, Craig Heilman, Dennis Bahr, Clark Johnson. ♦ In addition, the following positions have been affirmed: Membership Development: Scott Olsen, Webmaster: Timothy Chapman, Engineering Consultants Network (ECN) Chair: Thomas Kaminski, Educational Activities: Ann Thompson, Newsletter Editor: Thomas Kaminski, Engineers in Medicine and Biology Chapter Chair: Dennis Bahr. ♦ As previously reported, Charles Cowie is Chair and Charles Kime, Vice Chair for the Life Member Affinity Group (LMAG).

▪ 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. ♦

Please consider sending some time helping with the Section activities. ♦ Let me know (tjkaminski (at) 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.

▪ 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: 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.

◦ 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

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◦ 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 2016 Officers and Board Members are Charles Gervasi - Chair, Matthew Bartlett - Vice Chair, Tom Kaminski - Treasurer, Steve Schultheis - Secretary, Timothy Chapman - Webmaster, Tom Kaminski - ECN Chair, Dennis Bahr - Engineering in Medicine and Biology Chapter Chair, Ann E. Thompson - Educational Activities Chair, Charles Cowie - Life Member Affinity Group Chair, Chuck Kime - Life Member Affinity Group Vice Chair, Scott Olsen - Membership Development Chair, Members at Large: Mitch Bradt, Clark Johnson, Craig Heilman, Dennis Bahr, Sandy Rotter.

◦ Job Openings

Check out 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:

- Senior Application and Configuration Engineer, Watertown
- Software Engineer, Madison Area

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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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