



Madison Section Newsletter

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Upcoming Meetings

February Section: The Future of Work -- Innovation, Technology and Creativity
Joint with IEEE Greenbay and Milwaukee Sections
Thursday, February 6th at 5:30 PM in Fond du Lac
[Event Info](#)

Upcoming Meetings Info

Review of Past Meetings

News/Announcements

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Upcoming Meetings

Joint Meeting with IEEE-Greenbay and IEEE-Milwaukee Sections

THE FUTURE OF WORK - INNOVATION, TECHNOLOGY AND CREATIVITY



- Thursday, February 6th, 5:30 PM to 7:30 PM

- Thomas Triumph, Futurist, Management Consultant and Author
- Location:
Knights of Columbus Hall
795 Fond du Lac Avenue
Fond du Lac, WI 54935
- Please Register at the IEEE-Madison [event page](#).
- Family Style Dinner and Talk for a \$10 fee.

Talk: Are you in awe yet? Technological advancements are encouraging significant societal shifts. It is our collective responsibility to continue innovating, improving and creating. Please join IEEE at the Knights of Columbus Hall in Fond Du Lac to listen to nationally-renowned Thomas Triumph present on the future of work - and be ready to receive some nice giveaways! A quick video message from Tom is [here](#).

Bio: Thomas Triumph helps companies grow by collaboratively helping them reinvent their business, product development, and marketing. Along the way he's helped large Fortune 500 organizations act nimbly and small entrepreneurial companies scale. He's been a participant in two global technology revolutions—and has been part of some remarkable success stories (and some misfires), and he's the author of the book *Evolve or Die: Lessons for World-Class Innovation & Creativity*.

Tom fulfilled a childhood dream of living aboard an ocean research ship and tending to the mini-sub (Cousteau was on the Board), wrestled in the Olympic trials, and helped oversee the design and fabrication of the largest composite hovercraft ever built in the US. He resides in North Carolina and is an ultra-runner who envies Tom Hanks' long run as Forrest Gump.

Upcoming Meetings

- **Joint meeting with the IEEE-North Eastern (Greenbay) Wisconsin Section:** On Thursday, February 6th, the IEEE Madison Section will hold a joint meeting with the IEEE North Eastern Section in Fond du Lac that will feature futurist Tom Triumph. The meeting will include dinner, the talk, and an opportunity to network. The IEEE Milwaukee members have been invited as well. Tom's video describing the talk is available at this [link](#).

Ride Share: This meeting will be an opportunity to meet some members of the other two IEEE sections in Wisconsin. Because of the commute to Fond du Lac, I will help coordinate ride-sharing. If you can drive, or are interested in riding along with someone, please email me: tjkaminski@ieee.org.

- **February ECN:** Is being scheduled now as a visit to 100State co-working space for a talk by 5nines and a tour of their facility afterward. Stay tuned for the details.
- **March Life Member Affiliate Group:** Jack Kisslinger will give a talk on the history of some of Madison's significant computers, the Nicolet 1070/PDP-8, the Nicolet 1080 and the Department of Defense SAGE computer. It will be held at UW-Space Place on March 19th in the evening,

Review of Past Meetings

- **January PES/IAS Meeting (Review by Don Neumeier):** On January 21, 2020 Jeff Miller, President and Owner of JMB & Associates, spoke on Variable Frequency Drives (VFD) and how they can provide advantages when properly installed and configured. They can be a mysterious black box to many people for their first application or knowing the current technology capabilities. The talk helped remove the unknowns of when and how to apply in different situations and environments. Jeff has been in the variable frequency drive and motor control industry for over 30 years and shared his many experiences. VFD are becoming "smart" devices which can be customized for energy savings and still maintain functional job performance. A review of fan laws showed the relationships between, speed, air flow, static air pressure, torque, and motor horsepower required. A set of tables were illustrated for a 100-horsepower motor running a fan at constant speed. A conversion to a VFD could change the annual energy cost from \$69,000 to \$22,000. The duty cycles can vary, but savings are substantial.

VFDs that can change both frequency and voltage can find the most energy savings. This response was graphically shown as linear vs. squared V/Hz. This is known as flux optimization and is not available on simple drives.

Three types of drives were compared for their respective costs, capabilities, and life cycles.

A key to success is good wiring practices. Always separate the motor wires, the line wires, and the control wires. It is best to use metal conduit and have the dedicated grounds from the motor to the VFD chassis and then the chassis to the main ground bus.

Adding fuses to the protection system provides the best protection against internal VFD faults and potential fires. However, never just replace the fuse with a spare! Find the why and the location of the problem first. A simple fuse replacement could damage more equipment.

The presentation further included a review of: NEMA guides, cabling, surge/transient protection, cooling, disconnects, and enclosure types. The limited value of having VFD spares in inventory was discussed. The electrolyte capacitors in VFD's have a limited shelf life if not kept periodically charged which is not likely in typical on-site shops.

The group had many questions which all stayed for a little overtime. It was suggested to find on YouTube

additional information on "flux optimization."

Jeff Millers slides are available at this [LINK](#).

News/Announcements

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

IEEE Madison Leadership

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- 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 - Sa n Rotter
- Life Member Affinity Group Vice Chair - Charles Cowie
- ECN Chair - Matt Nowick
- Young Professionals Chair - Nate Toth
- 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

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