



Madison Section NEWSLETTER

Volume 6, Number 8

Serving IEEE Members of South Central Wisconsin

November 2003

American Transmission Company

- Date/Time:** Thursday, November 20, 2003, 11:45 AM - 1:00 PM
Speaker: Don Morrow, Director of Operations, American Transmission Company
Location: Rocky Rococo's Pizza, 7952 Tree Lane (Madison Beltline Hwy. at Mineral Pt. Rd.), 608.829.1444
Menu: Pizza buffet, salad and soft drinks (cost \$10.00, free for student members)
RSVP: by November 17th to Tom Yager via email (tyager@ieee.org) or call 608.225.3913



Non-member guests are always welcome!

Donald J. Morrow is the director of system operations. Morrow oversees the day-to-day operation of the high-voltage electric transmission system that serves customers from the Upper Peninsula of Michigan to the Wisconsin-Illinois border. Morrow was previously the senior director of Madison Gas & Electric's Systems Operation Center, responsible for electric system operations and gas distribution monitoring. A registered professional engineer, Morrow graduated with honors from the University of Wisconsin-Madison with a BS degree in electrical engineering. He has served on numerous industry committees affiliated with the Mid-America Interconnected Network, the Mid-Continent Area Power Pool, North American Electric Reliability Council and Wisconsin Reliability Assessment Organization.

Nanotechnology and X-ray Lithography at the UW-Madison Center for Nanotechnology

- Date/Time:** Thursday, December 18, 2003, 11:45 AM - 1:00 PM
Speaker: Donald J. Thielman, Technical Manager, UW-Madison Center for Nanotechnology
Location: Rocky Rococo's Pizza, 7952 Tree Lane (Madison Beltline Hwy. at Mineral Pt. Rd.), 608.829.1444
Menu: Pizza buffet, salad and soft drinks (cost \$10.00, free for student members)
RSVP: by December 15th to Tom Yager via email (tyager@ieee.org) or call 608.225.3913



Non-member guests are always welcome!

The Center for NanoTechnology is an interdisciplinary research center of the College of Engineering at the University of Wisconsin-Madison. The Center was established in 1984 to make use of the new electron storage ring, Aladdin, recently commissioned by the Synchrotron Radiation Center. The radiation emitted by this accelerator - soft x-rays - is important for technological applications in the semiconductor manufacturing area. CNTech was established to facilitate the development of this type of technology and its transfer to the U.S. industries. Begun with an initial seed grant from the Wisconsin Alumni Research Foundation (WARF), the Center is now a complete nanotech-

CONTENTS

Meeting Notices	1
IEEE Madison Section Elections	2
Madison Section Mailing List	2
Who Wants To Be A Millionaire?	3



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nology and X-ray lithography technology facility. It includes all the equipment and techniques for making masks, exposing wafers and inspecting the results of the exposures. This talk will cover a brief description of what nanotechnology is, the scale of things, and what research CNTech is doing in the nanotechnology arena.

Don has spent 25 years in instrumentation, aerospace and research at Rockwell-Collins, Nicolet Instruments, UW-Madison, Martin Marietta, University of Arizona, and Lockheed-Martin. His experience includes advanced digitizer design; flight control systems for helicopter and 757/767 autopilots; space instrumentation including Diffuse X-ray Spectrometer, Galileo Net Flux Radiometer, Huygens probe Descent Imager Spectral Radiometer to Saturn's moon Titan, and DS-1 and Mars missions. Don graduated '78 BS - EET from Milwaukee School of Engineering and is currently involved in X-ray and NGL lithography research.

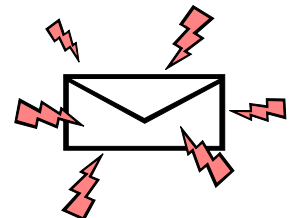
IEEE Madison Section Elections



The IEEE Madison Section Officer Elections will take place next month but there's still time for potential candidates to get in the running. Candidate nominations are welcome and encouraged for all positions. The positions include chair, vice-chair, secretary, treasurer, and multiple member-at-large positions. Nominations may be made by telephone or via e-mail to the Chair (278-0377, rotter@ieee.org).

Madison Section Mailing List

Some of you may not realize that the IEEE Madison Section has a email mailing list (madison-section). This list is very low volume and is only used for meeting announcements and general announcements that may be important to the membership. Only the list moderator is allowed to post messages so you won't receive any advertising or spam. Instructions on how to subscribe may be found on the IEEE Madison Section web site located at <http://www.bugsoft.com/ieee/>. Just look under "Madison Section Mailing List". Basically you just send an email to majordomo@majordomo.ieee.org with subscribe madison-section in the body of the email (the subject is ignored). The list moderator will receive your



request, verify your membership, then add you to the list. You will then receive notification that you have been subscribed to the list. This process may take a few days, so be patient.



Who Wants To Be A Millionaire?

by Paul B. Crilly

Attention new engineering graduates: do you want to be a millionaire? If so, you need to invest five to 10 percent of your salary in a good diversified stock mutual fund systematically. If you start early, you could retire a millionaire at age 62. More specifically, if between ages 22 and 62 you set \$3,000 a year aside in an average stock mutual fund that historically returns 10 percent, your investment will grow to \$1.3 million. Three thousand dollars per year is only six percent of the average \$50,000 starting salary. And think about it: if you wait until age 42 to begin investing, it will take \$22,500 per year to accumulate \$1.3 million. As many "seasoned professionals" will attest, we have even more financial commitments and surprises in our 40s than we ever had in our 20s.

You don't want to save all your life? Then set aside \$3,000 per year in the same mutual fund from age 22 to age 32. If you don't touch the money, by the time you reach age 62, your investment will have grown to \$834,000. The important things are to start young, be systematic and stick with a reliable diversified fund with a good track record. Don't trade in and out of funds and forget about getting rich quick. Many, if not most, investors are disillusioned speculators. In fact, according to University of Tennessee economics professor Tony Spiva, engineers are some of the most frequent victims of financial scams.

Although retirement is a good motive for investing your money, there are plenty of other reasons to save and invest while you're young. New engineering graduates have relatively high starting salaries compared to other professionals. However, unless they go into management or change careers, many will eventually experience salary compression—their salary growth will flatten out. Sure, some companies like to wine and dine young engineers, but some show a decreased interest for those in their 40s or 50s. Unless we have some specialized skill, the intense interest shown by employers when we were in our 20s and 30s tends to wane as we get older. And no one is more financially vulnerable than a 40-something with two kids, a mortgage, car payments, college bills, a cranky boss, and a potential layoff looming ahead. Therefore, make the proverbial hay while the sun shines; save and invest early in your career. If you have a pot of money saved, you will be less affected by the whims of your company's employment and retirement plan policies.

WHERE DO YOU START?

So what are the practical steps to be taken? First, before you get your first paycheck, set up an automatic withdrawal of five to 10 percent of the gross amount into a diversified stock fund. If you never even start getting the money in your paycheck, you will never miss it. A 401K or IRA is a good investment vehicle, but keep your investment diversified. The folks from Enron learned the benefits of diversification the hard way.

Second, establish a budget; that is, spend your money on paper first. Your plan should include putting aside cash for emergency expenses and six months' worth of living expenses, in case your job disappears. To avoid borrowing at high interest rates, put money aside for big-ticket items such as cars, appliances and a home down payment. You also need to include savings for such things as vacations, dinners out, Starbucks coffee, "mad money,"



Winter 2003/2004 Telecommunications Short Courses

- **DC Power System Design for Telecommunications**
November 19–21, 2003 in Madison, WI
- **Basic Telephony and Digital Switching**
January 6–9, 2004 in Madison, WI
- **Using and Installing Fiber Optic Systems for Communications**
February 9–11, 2004 in Madison, WI
- **Electrical Grounding of Communications Systems**
March 2–4, 2004 in Madison, WI

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College of Engineering Department of Engineering Professional Development

and things that you like to do that will eat up your finances if you don't plan properly.

Many times when I was young, I anticipated that when I reached my 40s, I would have more money put aside in savings. Sure, my salary has increased significantly, but so have my expenses. In the past six months, my oldest daughter has expressed interest in colleges that cost more than \$20,000 per year, my dentist is getting rich on my kids braces and my wife's emergency crowns, and we have spent \$1,000 on car repairs. And the list goes on. So, my advice to you: save while you're young, employed, and have all your hair.

FOR FURTHER READING

In *Financial Peace*, Dave Ramsey dispenses a great deal of financial common sense salted with humor.

In *The Millionaire Next Door*, Thomas Stanley and William Danko describe how many wealthy people not in high-earning professions, such as law or medicine, have prospered by living modestly, avoiding high maintenance activities—and otherwise not living ostentatiously.

Paul Crilly is a professor in the electrical and computer engineering department at the University of Tennessee. He has worked for 11 years in industry, spent 14 years in academia, and served for 18 months as an IEEE-USA Congressional Fellow. The opinions expressed in this article are his own.

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