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THE MIDLAND CHEMIST

Volume 40, Number 6
September 2003

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The Midland Chemist is published eight times a year by the Midland Section of the American Chemical Society.

American Chemical Society
Midland Section
PO Box 2695

Midland, MI 48641-2695
<http://membership.acs.org/M/Midl>

Volunteer Staff

Ann F. Birch	Editor
	989-832-7485
	ann.birch@editech-mi.com
Dave Baker	Writer
Angelo Cassar ...	Photographer, writer
Kristine Danowski	Writer
Peggy Hill	Writer
Don Miller	Writer
James R. Birch	Design, layout

Please submit all articles and photographs to the editor, Ann Birch. Instructions for article submission are on the Midland Section web site, as is contact information for other staff members. Authors can also contact Ann directly with any questions.

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Cover photo by Penny Wallace of Adaptive Imaging.

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From the Chair

Section Progressing on Goals

A month or so ago I received an e-mail from Les McQuire, a member of the National ACS Local Section Activities Committee, asking how my year as Section chair was going. Very nice of him, I thought, but as I was considering his specific questions, I realized there were some aspects that I could usefully share with you through this column and other aspects where I really needed some input from you to answer satisfactorily.

In the former category Les had questions about progress towards goals, whether the leadership conference I attended to prepare me for this year was valuable, and what was proving to be the hardest thing that I have had to do. What was the easiest? What was the most rewarding?

Actually, we have made very good progress on our goals, which probably means we were too cautious when we set them. We aimed to be fiscally responsible with our finances and maintain a dialogue with local industry in this time of economic difficulty. We are presently in reasonable shape in this regard. We wanted to inaugurate a fund drive for a new endowed scholarship fund to support students in the chemical sciences in our local area. This is well in hand, and you will be hearing more about it soon. We also planned to explore electronic distribution of this newsletter; this is the area where we have made the least progress. Other specific aims like increasing the size of the Careers and Professional Relations Committee, establishing new committees for Younger Chemists and Senior Chemists, and identifying a 2006 Central Regional Meeting chair are substantially achieved. Obviously, the hardest thing we've had to achieve must be the electronic communication issue as we've moved the least on it. I find I use e-mail as my primary tool of communication with Section members, but the step to electronic distribution of *The Midland Chemist* is a big one. Your comments on proceeding in this direction are welcome. The easiest task, to my considerable surprise and delight, was filling new and existing committee vacancies. Apologies for omissions but this noble list of those to whom I am personally indebted includes Petar Dvornic, Wendy Mathews, Sue Perz, Kurt Brandstadt, Pat Smith, Gary Kozerski, Wendy Flory, and Dale LeCaptain. Working with people like you is undoubtedly the most rewarding aspect of this experience.

The questions in the latter category where I need your input are future-



Mike Owen, Chair
ACS Midland Section

oriented ones. How do you think our Section might change in the next ten years? What will cause these changes? How could we or ACS take advantage of these changes? Do you have any suggestions for training and support of local sections? One specific area of interest concerns the major effort underway at ACS to help local sections and divisions interact. Les asked for two areas of chemistry where our Section would most like to interact with an appropriate ACS division. The polymer area came instantly to my mind, but I wonder what you think. Please let me know. I'd particularly like to hear from those who are active in a division about your experiences. I'm sure I'm woefully ignorant about the full spectrum of such interaction. I'd like to devote a future column or separate article to this aspect of our members' activities.

One final request: Ed Steiner has a very successful program of volunteers working with the fifth-grade science club at Longview Elementary School to assist the staff in such matters as hands-on demonstrations and the like. He is hoping to expand the effort to include the fourth grade this year and has asked us if any ACS members might be interested. Actual time in the school is one hour a week plus preparation and planning. The school day commitment probably limits this to retirees. If any of you are interested, please contact Ed (ecsteiner@chartermi.net) or me (michaelowen01@chartermi.net).

Mike Owen



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County Fair Activities a Huge Success

By Wendy Mathews

The weather was hot and so were the demos at the Midland County Fair in August. The Midland Section of the American Chemical Society (ACS) and the Mid-Michigan Technician Group (MMTG) sponsored science demonstrations on Thursday and Friday, August 14 and 15, from 4:00–7:00 p.m. at the Midland County Fair. A group of volunteers entertained children of all ages with hands-on science experiments, and Tim Drier dazzled them with his glassblowing expertise.



*A steady stream of youngsters lined up for science experiments and fun at the Midland County Fair
Photo by Penny Wallace of Adaptive Imaging.*

Thursday's demonstrations were held in the front gazebo, but were unfortunately cut short by a scheduling conflict with the fair office. Friday's demonstrations were moved to the picnic building located just north of the grandstands where the ACS Midland Section was having their annual Professional Day Picnic for members and their families. Both days of demonstrations had something for everyone and were enjoyed by all. The demonstrations ranged from density experiments, surface area spinners, and atmospheric pressure demos to making Monster's Flesh. Giveaways this year publicized the National Chemistry Week's theme of "Earth's Atmosphere and Beyond" and advertised the upcoming Sci-Fest 2003 on October 18.

Professional Day was held on Friday, August 15, and ran from 4:00 p.m. until 7:00 p.m. The festivities were enjoyed by not only many ACS members and their families, but also many members of several ACS affiliated groups such as the ACS Division of Chemical Technicians (TECH), Project Science Literacy, Mid-Michigan Technician Group (MMTG), and the Younger Chemists Committee (YCC). Volunteers from these groups helped make this year's Professional Day an enjoyable, successful event.

Not only could the members and their families enjoy the science experiments that were being demonstrated at the west end of the building,

but also they could satisfy their sweet tooth with a handful of cotton candy, fill their bellies with popcorn, and cool off with a refreshing snowcone. There were face painters there to decorate your cheek, a racecar moonwalk to bounce yourself “to infinity and beyond,” and the dunk tank was a huge splash. Tim Drier and Hobart Barker were very entertaining as they taunted us all with their wit and amazed us with their agility in the dunk tank. We were also serenaded by the music styling of Angelo Cassar so that the members could sit and relax while enjoying a nice cool pop and hiding away from the roasting sun.



Tim Drier kept his audience enthralled with his glass-blowing expertise.

Photo by Penny Wallace of Adaptive Imaging.

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Thanks to the County Fair Volunteers

By Wendy Mathews

I would like to take this opportunity to thank all of you for your great efforts that were put forth this year with the Midland County Fair Science Demonstrations and Professional Day. This year we had over thirty people help make this happen. During two of our organizing sessions we had more than half of the thirty in attendance. Let's try to make our next venture as fun and successful as this. Without all of the great volunteers like you, events like this would not be possible.

Even though the weather was scorching this year, we ended up have a terrific turnout. We had plenty of volunteers who were eager to help out, so everything ran smoothly and could be enjoyed by all. A special thanks to Tim Drier and Hobart Barker for the entertainment and good sportsmanship in the dunk tank. I would also like to thank Penny Wallace for donating her time and expertise in taking pictures and a video of our events. We will have a video and photo album of both of these events available soon. A thank you also goes to Airgas Great Lakes for donating, delivering, and setting up the helium tank for all of the balloons given away at the Science Demonstrations and Professional Day. They brought big smiles to many faces.

Year after year it seems that getting volunteers for any event is difficult, especially during the summer. I very much appreciate all of you who took your time to help support the image of science through our demonstrations. It is important that children see the fun and interesting side of science, no matter if we reach only one child or 100 children on any given day. Everyone pulled together to try to make these events the best that they possibly could be.

My goal this year was to make the planning sessions more on a social level so that we could not only organize the events, but also get to know one another. I believe with this approach we made some friends, had a good time, and much got accomplished; not to mention that we had a very successful event.

Thank you all very much and hope to see you at the Sci-Fest on October 18 at Delta College in the Pioneer Gymnasium.

Editor's Note: Wendy is the treasurer of MMTG and was the chair of the Midland County Fair Demo Committee.

Call For Papers

Fall Meeting of the Michigan College Chemistry Teachers Association

Are you doing something new and different? Present it to your colleagues at the Fall Meeting of the Michigan College Chemistry Teachers Association (MCCTA). The meeting will be at the University of Detroit Mercy, Chemistry Building, McNichols and Livernois Campus, on November 1, beginning at 9:00 a.m. Abstracts should be in the form of a short paper, referenced as needed. They will be peer reviewed beforehand, and the proceedings will be published and disseminated after the meeting. Traditional, shorter abstracts will also be accepted.

This year's meeting features a panel of community college faculty, who will answer the questions:

- What is considered essential chemistry in your community college curriculum?
- How much organic chemistry does your college offer, and how central is it to the 2-year chemistry degree?
- What instrumentation is the community college chemistry student exposed to?
- What do you expect students to know as they go from the 2-year college to a 4-year college?
- In your opinion, what strengths and weaknesses do students arrive with when they begin work on a two year degree?
- How best do your students utilize their degree?
- What market are your students headed towards?

If you know someone who wishes to be on the panel, please contact Mark Benvenuto. There are still a couple of open slots. All abstracts are due to Mark Benvenuto at benvenma@udmercy.edu, no later than October 17 to ensure time for review and copying of the proceedings.

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RNA Interference

By Kristine Danowski

RNA interference (RNAi) is a simple way to knock out genes, regulate cell proliferation, and/or induce cell death *in vivo* in many kinds of organisms. First identified in the worm *C. elegans*, RNAi has now been used in fungi, insects, plants, and animals. Also called post-translational gene silencing or co-suppression, RNAi is enormously popular in both academia and industry. The journal *Science* named RNAi as the top breakthrough of 2002.

RNAi uses double-stranded RNA (dsRNA) called short interfering RNAs (siRNAs) to mark a particular messenger RNA (mRNA) for degradation. The siRNAs are 21 to 25 nucleotides long and are produced by the degradation of long dsRNAs by a nuclease called Dicer. siRNAs can also be introduced into a cell exogenously or by transcription from an expression construct. Once formed, siRNAs associate with a multiprotein complex called RISC (for RNA-induced silencing complex), which targets the homologous mRNA by Watson-Crick base pairing. When mRNA is treated with the appropriate RNAi, protein synthesis stops, and the gene corresponding to that mRNA is not expressed. Figure 1 from the journal *Science* illustrates the major components of endogenous RNAi. Many details have yet to be elucidated.

According to a recent survey of life scientists, functional genomics (assigning functions to genes), creating *in vivo* knockout organisms, and target validation for new drugs are the most common uses for RNAi. Many companies are designing RNAi assay

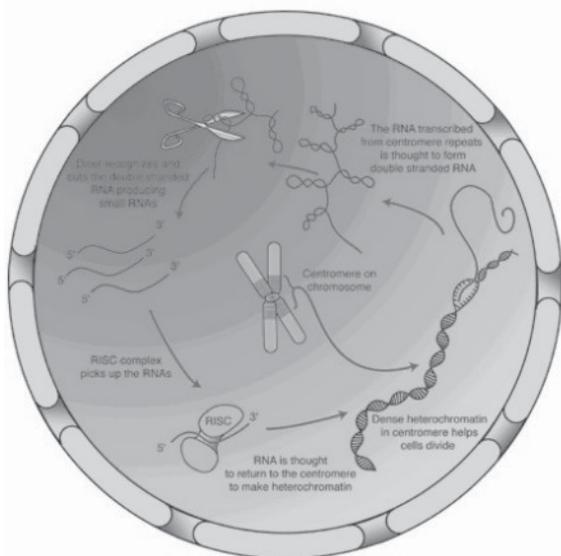


Figure 1. Illustration of RNAi. Illustration used with permission from *Science* 2002, 298(5602), p. 2296, Couzin, Jennifer, "Small RNAs Make Big Splash." Illustration: C. Slayden and G. Riddihough. Copyright 2002 American Association for the Advancement of Science.

kits and even entire platforms to meet the projected demand for the technique. Much of RNAi's popularity results from its simplicity, compatibility with high-throughput screening, and its leveraging of transfection, microarrays, and oligonucleotide technology, three areas in which life scientists are already highly skilled.

In functional genomics, RNAi is used for "loss-of-function" screens and identification of gene interactions. High-throughput RNAi has been used to characterize and isolate phenotypes for several hundred genes essential for cellular development in each of 25 different mammalian cell types. RNAi has also been used to study expression and silencing of several oncogenes, tumor suppressors, and transcription factor genes. Developing knockout strains of organisms is time-consuming and technically challenging. However, judiciously using RNAi to create these organisms, which are used as disease models, is far simpler.

In the pharmaceutical industry, RNAi is both a research tool and a therapeutic agent. For example, RNAi can block expression of a target gene to see if disease markers disappear. If so, that gene is a possible drug target. siRNAs target very low level mRNA in cells and are near-catalytic. Their effects are reversible and can last as long as two weeks. Since siRNA can target specific genes with minimal side effects, and cells inherently use RNAi, theoretically the process should be straightforward to utilize therapeutically. Thus a single siRNA can be used as a drug.

Despite these successes, RNAi has several problematic areas. siRNA must be very selective, in other words, target a unique mRNA sequence. Otherwise it will silence the wrong gene, fail to silence any gene, or cause side effects if it is a drug. Additional problems involve delivering synthetic siRNA to cells. Animals cannot absorb siRNA through the skin, and direct injection into the bloodstream has been ineffective. Microinjection, electroporation, liposomes, and lentiviral delivery systems have been reported in the literature with varying degrees of success.

Time will tell if RNAi fulfills its "revolutionary" billing.

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Continued at bottom of page 9

*Call for Posters***2003 Fall Scientific Meeting**

ACS Midland Section
Friday, October 17, 2003
Employee Development Center
The Dow Chemical Company

Please consider presenting a poster at the Fall Scientific Meeting. Abstracts are being accepted through September 18. All areas of chemistry and chemistry-related topics are invited. For more information, check the FSM web page www.membership.acs.org/m/midl/fsm03/index.htm.

Abstract Format

Each abstract should contain: title, author(s) and author(s) affiliations, and abstract body text. The format specifics:

- Single spacing with blank line between title and author *and* between author and abstract body text.
- Times New Roman typeface in 12-point (or comparable) type size.
- Submit as an e-mail attachment in either Microsoft Word or Adobe Acrobat (PDF) format.
- Please try to limit the abstract to 225 words.
- Underline the name of the presenting author (note, the e-mail address of the submitter will be the default contact person for all additional information)
- E-mail abstracts to dale.lecaptain@cmich.edu

Address questions to Dale LeCaptain, Department of Chemistry, Central Michigan University, 989-774-3993, dale.lecaptain@cmich.edu.

We currently have booth space available for interested vendors, school clubs, businesses, etc. for this year's FSM exposition. Space is limited so don't delay. For further details and pricing information, please contact Wendy Flory at 989-636-5097 or wcflyor@dow.com.

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MMTG Speaker Series Educates, Entertains

By Dana Bitzer and Amy L. Betz

The members of the Mid-Michigan Technician Group have been doing plenty of listening and learning in the past few months. The first two speaker events for 2003 were very well received by those in attendance, each one offering an opportunity to learn something unique and interesting related to the field of chemistry and professional development.

On June 6, MMTG was proud to offer a presentation by John Engelman to its members and guests. John is a member of MMTG who graduated from Ferris State University in 1964 with an associate of applied science degree in industrial chemistry technology. On May 10, 2003, he was awarded an honorary doctorate from Ferris. John delivered a presentation describing his career and the many opportunities presented to him that led to the prestigious recognition. His career as a technician spans 39 years and five companies. During that time, John has held a number of different positions and worked with a wide variety of products, chemistries, and technologies. During his presentation, John also spoke about what skills he feels led to his success, and how mastering those skills can benefit any technical professional in the advancement of their own career or the expansion of career opportunities outside of traditional roles. John believes the possibilities for a person with an associate's degree in science are plentiful and varied. He reminded us that the definition of luck is "where preparation meets opportunity."

John has been an active member of MMTG since its inception, serving as treasurer and an elected delegate, and he has taken leadership roles in many other organizations. This was an excellent opportunity for technicians to learn from those of us who have demonstrated exceptional ability and achieved significant accomplishments.

On July 9, Melissa Strait, professor of chemistry at Alma College, shared stories of her adventures in Cairo, Egypt, with her students from Alma College and her very successful search for meteorites in the frozen



Amy Betz, MMTG chair, welcomes John Engelman, who spoke about his 39 years as a technical professional.



Melissa Strait shows some of the souvenirs from her travels.

ice of the Antarctic where she lived on an ice sheet for six weeks.

Melissa has designed an experience that exposes students to a foreign culture while teaching them about environmental chemistry. The class spends a month living in Cairo and other Egyptian cities, learning about Egypt's efforts to address environmental problems endemic to small, poor countries. However, her true research love is the field of meteoritics. Her work in meteoritics has provided an outlet for her globetrotter tendencies by leading her to many places around the world in connection with annual meetings of the Meteoritical Society, and to

the best treasure-trove of meteorites on Earth—the Antarctic. She spent six weeks living in a tent on the Antarctic ice sheet looking for meteorites. In all, the team found 750 meteorites and experienced an environment that is truly unique. In her presentation, Melissa shared photos and stories relating exciting experiences from her travels that most of us will never encounter. Her presentation was not only educational, but exciting and inspiring.

The next seminar is scheduled for September 25 at Dow Corning Corporate Center, DC40. Connie Murphy and Bob Krystosek will be speaking about the Division of Chemical Technicians (TECH). Connie will discuss the history of the division and Bob will speak about the coming year and future direction of the division. Lunch will be provided for free to all MMTG members and for \$3 to nonmembers.

Volunteering: An Open Letter to Midland Section and Members

By John Blizzard

Editor's Note: This is the second part of a two-part article on volunteering by John Blizzard. The first part dealt with the responsibilities of officers. This concluding part discusses the responsibilities of volunteers. John is retired from Dow Corning Corporation and has been an ACS member for 10 years. He is an active volunteer in Project Science Literacy and other education programs of the Midland Section.

What are the responsibilities of member volunteers? This includes officers and board members since, after all, they are also volunteers. First, don't volunteer for something knowing that you cannot or will not follow through on it. Be professional and responsible no matter how big or small the opportunity. I realize that all kinds of problems and road blocks can come up unexpectedly to prevent someone from doing what they volunteered for. This is understandable. However, it is far better to say "no" than to commit to something knowing you cannot do it. Further, if you accept a volunteer responsibility, do the very best job you can do.

Second, commitment is better than complaints. How often have you heard someone complain about what an organization you are involved with is doing or not doing? Complaining is easy. Getting involved to improve the organization is not so easy because it requires *your* time and commitment. As a volunteer you are full of ideas. The local board and officers are open to hear your ideas, comments, and suggestions. But, don't be surprised if they ask you to help. After all, it is you who saw the need and who better to assist than the one who identified the area of need or change? Remember though, the board is there to ensure that the organization as a whole benefits, not just an individual. If your idea is not met with the greatest of enthusiasm, make some adjustments and keep trying.

Third, enjoy what you do. There are many things in life that you are required to do. You are not *required* to volunteer. This is something that you *choose* to do, so enjoy it. If you find yourself not enjoying what you are volunteering for or you are getting "burned out," it may be time to re-evaluate what you are doing. With the demands of family, work, church, and just plain living, it may be of greater benefit to you and to an organization to say "no" to some things. This may be better than getting so involved in volunteering that you forget why you are doing it. Personal satisfaction with a job well done is far better than disappointment with not being able to accomplish what you intended.

Now comes the difficult part. Should you volunteer for anything? I

wish there was a cut and dried answer, it would make things so much easier. It depends on you. If you are like most people, you will want to volunteer your time and resources to help some program or someone. The example you set for children by volunteering or mentoring is invaluable. The benefits gained by the organizations and the individual are returned many-fold. Your input and volunteering are what makes any organization what it is and can be. The personal satisfaction and pride gained by volunteering in making a better community, organization, and individual are without measure. Besides, none of these organizations would exist without your selfless volunteering. Whatever you volunteer for should be a memorable and enjoyable experience. I guess when it comes right down to it, it just makes sense to volunteer.

Nine Members Accept Nominations to Section Offices to Date

By Gary Kozerski

To date, the following individuals have accepted nominations to run for elected leadership positions in the Midland Section for 2004.

Chair-Elect

Minghui Chai	CMU
Pat Smith	Dow Chemical

Secretary (1-year term)

Debbie McNett	Dow Corning
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Treasurer (1-year term)

Doug Beyer	Dow Chemical
Sheng Wang	Dow Corning

Director (4 positions; 3-year term)

Andrew Chubb	SVSU
Jennifer Dingman	Dow Corning
Sharyl Majorski	CMU
Dave Stickles	Dow Corning

Additionally, two candidates are needed for the position of chair of the Nominations and Elections Committee, which also carries a 1-year term.

This is the final call for nominations from the general membership prior to the October election. A minimum of two candidates is needed for each open position.

59th Annual FSM Features Green Chemistry

By Dale LeCaptain

The much anticipated and currently desired next generation of chemical production will use biologically based, renewable resources, known as “green” chemicals. This will be the topic of the 59th Annual Fall Scientific Meeting of the Midland Section of the American Chemical Society (ACS). The meeting will be held on Friday, October 17, from 11:00 a.m. to 5:00 p.m. at Dow Chemical’s Employee Development Center (EDC) on Abbott Rd. in Midland.

The meeting will begin with registration, lunch, the poster session featuring posters from local universities and companies (please note the call for posters on pg. 11). The exposition will be even bigger this year featuring various scientific vendors and professional societies. A formal welcome and awards presentation will lead into the keynote presentation by Dr. Richard Gross, professor at Polytechnic University in New York and recipient of the 2003 Presidential Green Chemistry Award. The remainder of the afternoon will offer the following presentations on green chemistry.

Renewable Materials

- Larry Drzal, MSU, “Plastics from Renewable Sources”
- Dave Henton, The Dow Chemical Company, “Polylactic Acid”
- Ramani Narayan, MSU, “Polymers from Lactic Acid Derivatives”
- Greg Baker, MSU, “Composites from Renewable Materials”
- Ray Cocco, Dow, “WoodStalk™: An Environmentally Friendly Particle Board Composite”

Green Processes

- Greg Zeikus, MSU, “Electrochemical Enhancement of Fermentation Processes”
- John Nghiem, MBI International, “Ammonia Fiber Explosion for Treating Biomass”
- Tony Kingsbury, The Dow Chemical Company, “Polymer Recycling”
- Dennis Miller, MSU, “Reactive Distillation of Glycols from Sugar”
- Kris Berglund, DNP, “Succinic Acid”

Workshops on career development and technical word processing will also be held. There will be more information on the workshops in the October issue of *The Midland Chemist*.

The afternoon will wrap up with a social, offering the opportunity to mingle with colleagues at a local establishment. Please check out the website for all the details, including the latest information! Check back often for updates. www.membership.acs.org/m/midl/fsm03/index.htm.

CAS Expands Patent Coverage and Currency

From National ACS

Chemical Abstracts Service (CAS), the leading provider of chemistry-related patent information, has announced several enhancements that build upon its unique patent offering. CA patent coverage has been expanded by the addition of patents from six more countries; the UK and French patent offices have been added to the group of "Core" patent issuing authorities for which CAS delivers patent information within 2 days of issuance; in addition, CAS has broadened its selection criteria to include the US National Patent Classification codes.

The six national patent authorities added to CAS regular patent coverage are New Zealand, Estonia, Monaco, Bulgaria, Slovenia, and Hong Kong in addition to the African Regional Industrial Property Organization (ARIPO). In total, CAS now offers patent information for 44 active patent issuing authorities.

CAS now offers ultra-fast delivery of information from the UK and French patent offices, which have been added to a group of seven Core patent issuing authorities that also includes the United States Patent & Trademark Office (USPTO), German Patent and Trademark Office (GPTO), Japanese Patent Office (JPO), European Patent Office (EPO) and the World Intellectual Property Organization (WIPO). For these offices, patent bibliographic information and abstracts are available in CAS electronic services within 2 days of patent issuance. Fully indexed records for these patents appear within 27 days.

Additionally, CAS is extending its patent selection criteria by including more classification codes: the US NPC, which began in January 2003, and the ECLA codes and Japan F-Terms to be added to patents in the CA/CAplus files in the near future.

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Fall 2003 ACS Tour Speaker Announced

By Anton Jensen

Dr. John J. Fortman, professor at Wright State University and ACS tour speaker, will present “America’s Funniest Chemical Videos: Dazzling Demos and Videotaped Bloopers” at Central Michigan University. The presentation is scheduled for Monday, September 22, at 4:00 p.m. in the Dow Science Building, room 175. A reception is planned for 3:30 p.m. in room 264.

Anyone wishing to have dinner with Prof. Fortman at The Embers in Mt. Pleasant should contact Dr. Anton Jensen at 989-774-3125 or anton.w.jensen@cmich.edu. RSVP by September 18. Dinner will begin at approximately 5:30 p.m. Meals may be ordered from the menu at your own expense.

Abstract: Through the years, Prof. Fortman has collected and edited many misadventures that he and Ruben Battino experienced in doing demonstration shows that were videotaped live. Difficulties encountered in the studio preparation of a 3-hour set of videotaped demonstrations were also saved. These will make up one part of these showings. Gil Haight gave permission to show portions of his Haightful Perils of Teaching, which are spectacular in spite of technical problems. A videotape of Hubert Alyea doing his Old Nassau demonstration will be shown along with some tapes of others such as Bassam Shakhashiri and Ron Perkins caught in live demonstrations that presented problems. Portions of demonstrations by the Weird Science group will also be shown.

For more information on Dr. Fortman, see the August issue of *The Midland Chemist*.



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**National Chemistry Week
at**

Sci-Fest 2003

**Delta College
October 18, 2003
10:30 a.m.–2:30 p.m.**



Theme: Earth's Atmosphere and Beyond

Come explore! Lots of activities!

In Past Issues of *The Midland Chemist*

By Wendell L. Dilling, Midland Section Historian

- **30 Years Ago This Month**—In a feature article Thomas Delia described the features of the Department of Chemistry at Central Michigan University and noted that the facilities of the department are part of the newly dedicated Malcolm H. Filson Laboratory.
- **20 Years Ago This Month**—Ed Plueddemann, Dow Corning Scientist, was announced as the recipient of the 1984 ACS Award for Creative Invention. He is the first Dow Corning employee to receive this award.
- **10 Years Ago This Month**—Donald Kadlec and Joan Holtschlag reported on the great success of the ACS Midland County Fair booth. A photo shows John and Linda Kennan preparing for a science demonstration to be presented on “Kid’s Day” at the fair.

Important Dates on the ACS Midland Section Calendar

- Sept. 8 Deadline for October issue of *The Midland Chemist*.
- Sept. 15 Midland Section board meeting, Delta College Midland Center, Rm. 12., 7:00 p.m.
- Sept. 18 Deadline for Fall Scientific Meeting poster abstracts.
- Sept. 22 Prof. John Fortman, Wright State University, "America's Funniest Chemical Videos: Dazzling Demos and Videotaped Bloopers" CMU Seminar Series and ACS Tour Speaker, Central Michigan University, Dow 175, 4:00 p.m., reception preceding in Dow 264 at 3:30 p.m. (Anton Jensen, 989-774-3125).
- Oct. 13 Midland Section board meeting, Delta College Midland Center, Rm. 12., 7:00 p.m.
- Oct. 17 Fall Scientific Meeting, The Dow Chemical Company, Employee Development Center, 11:00 a.m.-5:00 p.m.
- Oct. 18 Sci-Fest, Delta College, Pioneer Gym, 10:30 a.m.-2:30 p.m.

AMERICAN CHEMICAL SOCIETY
P.O. Box 2695
Midland, MI 48641-2695

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