THE MIDLAND CHEMIST

A publication of the Midland Section of the American Chemical Society

Vol. 47, No. 3 **June 2010** **www.midlandacs.org**

From the Chair

Thanks to Educators and Volunteers

March, April, and May are always very busy months for the Section volunteers. There were a lot of planning meetings for events throughout the year, events taking place, and organizational meetings. Events such as Earth Day at the Midland Center for the Arts and Sciences, school presentations, Education Day at the Saginaw Spirit hockey arena, Boy Scouts, and Girl Scouts all seem to happen at the same time. Not only does this keep us active and in the news but requires a LOT of volunteers.

This brings me to one of the most enjoyable jobs that the Chair gets to do. This is to assist in recognizing individuals for all their hard behind-the-scene effort they do. The Section had the Nineteenth Annual Spring Science Education Recognition Awards Dinner at the Dow Corning Cafeteria in April with approximately 150 individuals in attendance. At the dinner, the Section was able to recognize and celebrate the efforts of a wide variety of outstanding individuals for their contributions to chemistry education and efforts toward diversity in science education. Dr. Lane started off the evening with a warm welcome and talk on education and volunteerism. For the members that could not attend this dinner meeting, I would like to reiterate some of these awards and recognize the individuals that received the awards.

John Blizzard

The awards committee selected the award for Achievement in Science Teaching to Ms. Sandy Schafer from John Glen High School as the Outstanding High School Teacher and Ms. Melinda Coyle from Northeast Middle School for Outstanding Achievement in Middle School Science Education.

Ms. Lisa Thackery of the Dow Corning Corporation received the Science Education Volunteer Award. For Promotion of Diversity in Chemistry, Related Sciences and Engineering Award, Dr. T.F. (Theophilus) Leapheart of The Dow Chemical Company was the outstanding selection. Anton Jensen from Central Michigan University received the Outstanding Achievement in College Chemistry Education award. I could not begin to list the accomplishments of these outstanding people in this column.

In addition to these, awards were presented to eight Section U.S. National Chemistry Olympians, four Chemical Technology Students, 19 outstanding high school students from area high schools, and outstanding college students from Alma College, Central Michigan University, Delta College, and Saginaw Valley State University.

50 and 60 year ACS Member Award recipients at the 2010 Spring Awards Banquet.

Also, to all these deserving awards, twelve 50 and 60 year ACS members were recognized for a combined total of 680 years ACS membership. I would again like to offer my congratulations and thanks to all the individuals for their outstanding effort and volunteerism in helping to make our communities a better place to live and work. I trust that the awards help in saying "thanks" for your efforts.

Of course, this entire evening could not have taken place without the direction of Ms. Diana Deese, Awards Chair. Diana assembled a committee to review the potential candidates, set up the agenda, arranged the outstanding dinner, and pulled off this entire event. Her committee consisted of Minghui Chai, Jennifer Dingman, Petar Dvornic, Scott Gaynor, Steve Kaganove, Steve Keinath, Lokming Eva Li and Pamela Slaving. You can see more of this event at the website: http://www.midlandacs.org.

One last item, the Section has a wide variety of event happenings in the coming months and year. Please check these out on our Section web site and contact the Chairs of these committees to see what assistance you might be able to provide for these events. Hopefully, we will be able to recognize you at the 20th Annual Spring Science Education Recognition Dinner.

John Blizzard

In This Issue

Calendar for June/July

June 2	RSVP deadline for TAVP Dinner and Lecture Series
June 7-11	TAVP Lecture Series
June 9	TAVP Dinner Meeting
June 21	Board of Directors Mtg.
July 12	MC Deadline

Steven Keinath, MMI Director

2010 Turner Alfrey Visiting Professor Course

Harnessing Biocatalysis to Overcome Current Challenges in Polymer Chemistry and Material Science

Professor Richard A. Gross

June 7-11, 2010
Monday-Friday, 3:00-6:00 p.m.

Lecture Hall
Michigan Molecular Institute
1910 West St. Andrews Road
Midland, MI

Prof. Richard Gross is the Herman F. Mark Professor of Polymer Science, Department of Chemical and Biological Sciences, Polytechnic Institute of New York University.

Fee: There is no fee for auditors if they belong to organizations that are financial sponsors of the Turner Alfrey Visiting Professor program: The Dow Chemical Company, Dow Corning Corporation, Central Michigan University, Michigan State University, Saginaw Valley State University, Mid-Michigan Section of the SPE, and Midland Section of the ACS. For all others, a course fee of $400 will be required at registration. All participants, however, must pre-register.

Registration: Pre-registration is required no less than one week in advance with the registrar at *www.mmi.org*, or *registrar@mmi.org*, or by calling 989-832-5555, ext. 571.

Course Abstract

We stand at the threshold of a revolution in the way industry will increasingly rely on biologically based materials and processes. Launching new products has become dependent on meeting life-cycle analysis criteria. Significant additional costs are imposed on industrial processes that require disposal of toxic chemicals and by-products. To reduce health-related risks faced by workers at chemical manufacturing facilities new methods are desired that can be conducted at or near ambient temperature-pressure conditions. These driving forces are accelerating the rate-of-change in the way chemical processes are designed and conducted. Completely new methods will emerge that reach well beyond incremental improvements to the discovery of new paradigms in synthesis and processing.

Biocatalysis, whether *in vitro* (cell free) or *in vivo* (whole cell), offers many features that are attractive for polymer/material synthesis, processing and utilization, that include: (1) *control of polymer structure*: enzyme regioselectivity avoids use of protection-deprotection steps during synthesis of functionally complex monomers, macromers and polymers; (2) *simplicity of reactions conducted over a wide range of conditions*: e.g., bulk systems, organic media, biphasic conditions, emulsions and supercritical fluids; (3) *multistep conversions in aqueous media*: whole cells house numerous enzymes under strict metabolic control that allow complex reaction pathways to be conducted within the confines of single cells; (4) *metabolic and protein engineering*: when used in combination provide powerful tools to dramatically increase process efficiency of biocatalyzed chemical transformations; and (5) *green chemistry*: the use of 'environmentally friendly' methods for synthesis and processing is good business.

Enzymes allow reductions in processing temperatures, provide metal-free and safe catalysts, and convert multiple-step chemical processes to one-pot microbial transformations, and their natural origin allows safe disposal and degradation upon disposal. This course will discuss basic concepts in enzyme catalysis; current state-of-the-art biocatalytic routes to monomers, macromers and polymers; uses in biomass and polymer degradation; and future opportunities.

Lecture Topics Outline

Lecture #1 – *Fundamentals in Enzyme Catalysis*: Effects of organic media polarity, water content and medium engineering on stability and activity; enzyme modification and immobilization; reaction environments in which enzymes function; immobilization studies using *Candida antarctica* Lipase B as a model system.

Lecture #2 – *Plant Biomass and its Conversion via Enzyme Catalysis to Chemicals*: Complexity of plant cell wall structures and enzymes used to degrade lignin, cellulose and other interlocked polysaccharide cell-wall components; adapting enzymes from biomass breakdown for cleaning of surfaces (e.g., bio-scouring or bio-polishing) and degradation of synthetic polymers (PET and PVAc).

Lecture #3 – *Biobased Monomers and Plastics*: New-to-the-world plastics including poly(hydroxyalkanoates), poly(lactic acid); older bioplastics (nylon 11, rayon, acetate rayon); biobased monomers (1,3-propane diol, ethylene, acrylic acid, isoprene); a new route to ω-hydroxyfatty acids.

Lecture #4 – *Immobilized or Cell-free Enzyme-catalyzed Polymerization Reactions*: Discussion will focus on potato phosphorylase, lipases, cutinases and proteases.

Lecture #5 – *Part 1, Microbial Surfactants:* Complex building blocks with interesting biological and physical properties. *Part II, Enzyme-catalyzed Routes to Control Material Lifetime.*

Biographical Sketch of Professor Richard A. Gross

Professor Richard A. Gross is the Herman F. Mark Professor of Polymer Science at the Polytechnic Institute of New York University, in Brooklyn, the position he accepted when he joined the Polytechnic in 1998. Prof. Gross received his BS degree in Chemistry from SUNY Albany in 1979, and his PhD degree in Organic/Polymer Chemistry from Polytechnic University in 1986, working with Prof. Mark Green. He completed two years of postdoctoral work with Prof. Robert Lenz at the University of Massachusetts Amherst working in the area of biomacromolecule materials and processes, and then joined the University of Massachusetts Lowell in 1988, rapidly rising through the ranks from Assistant to Associate to Full Professor. He has published over 360 articles in peer reviewed journals which have been cited over 6,000

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times to date, edited 5 books, and been granted or filed 19 patents. Prof. Gross has been the recipient of many honors and awards.

His many significant professional activities include founding and co-editing the Journal of Environmental Polymer Degradation (1993-1998) and co-founding the ACS journal, Biomacromolecules (2000-present). He also holds several other Editorial Board appointments.

Prof. Gross's research is focused on developing biocatalytic routes to monomers, macromers, and polymers. He uses both cell-free and whole-cell catalyst systems to investigate biocatalytic transformations such as lipase-catalyzed polyester synthesis, whole-cell routes to biosurfactants and fatty acid derived monomers, and protease-catalyzed transformations to polypeptides. His research group is also developing biomaterials that have bioresorption rates that can be controlled by embedded hydrolytic enzymes and glycolipid biosurfactants for agricultural and therapeutic applications. Prof. Gross founded SyntheZyme LLC in 2009, a company dedicated to commercializing the technologies being developed in his laboratory, and he serves as the Chief Technical Officer of SyntheZyme. His current research group at the Polytechnic Institute is comprised of 5 postdoctoral fellows and 12 PhD graduate students.

Steven Keinath, MMI Director

Turner Alfrey Visiting Professor Dinner

Joint Technical Society Dinner Meeting

BIOCATALYSIS: PROVIDING ENABLING TECHNOLOGIES FOR NEXT GENERATION MATERIALS AND PROCESSES

Professor Richard A. Gross
Herman F. Mark Professor of Polymer Science, Department of Chemical and Biological Sciences, Polytechnic Institute of New York University, Six Metrotech Center, Brooklyn, NY 11201

Date:
Wednesday, June 9, 2010

Time:
Social 6:30 p.m. Dinner 7:00 p.m.
Program 8:00 p.m.

Location:
NADA Center, Northwood University, 4000 Whiting Drive, Midland, MI 48640, Phone: (989) 837-4277

Cost:
$25 for SPE and ACS members (or members of other professional societies such as AIChE, ASM, etc.) and guests, $15 for students. Note: Mid-Michigan SPE will charge individuals who make reservations and do not attend the meeting.

Reservations:
Reservations can be made via phone, fax, or e-mail to Dawn Wright at MMI. Reservations must be received no later than Wednesday, June 2, 2010.

Phone: (989) 832-5555, ext. 571,
Fax: (989) 832-5560, E-mail:
wright@mmi.org

Abstract:
Biocatalysis encompasses a wide platform of chemistries that afford opportunities for innovative new products and processes. The hallmarks of biocatalysts are their ability to operate under mild conditions, with impressive selectivity, on a diverse range of natural and non-natural substrates. Immobilized enzymes can function over a broad range of conditions that are adaptable to current manufacturing equipment and processes. Rapid advances in biotechnology continue to decrease the time and resources required to engineer organisms to produce desired products by fermentation in high titers as well as to engineer enzymes with increased thermal stability, efficiency and specificity. This presentation will provide examples from the Gross Research Group and work by many others that highlight the successes and opportunities of using biocatalysis to develop next-generation processes and materials.

MC Editor

MMTG Sponsors Brewery Tour & Membership Drive

Brewery Tour & 2010 MMTG Membership Drive

Tri-City Brewing Company
3020 N. Water Street
Bay City, MI

June 10, 2010
6 p.m.

$13.00 for MMTG members;
$15.00 for non-members

RSVP by June 4th to
Jeff Seifferly:
jeff.seifferly@dowcorning.com

The Mid-Michigan Technician's Group (MMTG) would like to invite all current and prospective MMTG members to our 2010 Tri-City Brewing Company Tour and Membership Drive.

The price includes a Tri-City Brewery Company glass to use all night long and then take home. It also includes food, non-alcoholic beverages, a beer tasting seminar, and the opportunity to purchase Tri-City Brewing Company beer at a discount.

Tri-City Brewing was founded in 2007 by a local group of home brewers and is located in Bay City, Michigan at 3020 N. Water Street (enter from Trumbull street).

For more information about the Tri-City Brewing Company, please visit http://www.tricitybrewing.com/index.html. This is a 21 and over event and I.D. will be checked.

For more information about the Mid-Michigan Technician's Group, please visit http://midlandacs.org/index.php?page=mmtg

For more information about the event please contact Jeff Seifferly, MMTG Chair-Elect, at jeff.seifferly@dowcorning.com

Lisa Thackery, Outreach Member

Kids & Chemistry Shares "Chemystery" with Boy Scouts

Here is an update and an overview of what our Outreach members have been doing over the last couple of months within our community. Thanks to all who have participated and donated their time.

Boy Scout Merit Badges

In honor of the 100th anniversary of the founding of the Boy Scouts of America, the Midland Section of the American Chemical Society, in cooperation with the Midland Historical Society and Dow Corning, sponsored a special "Chemystery" event, at which 60 boys aged 12-16 were afforded the opportunity to earn merit badges in Chemistry.

The event took place inside and outside the grounds of the Midland Historical Society and Dow Historical Museum, and was planned with the help of 12 volunteers. Experimental and safety-based activities were organized around the theme of solving a murder.

The event was very popular; it was open to Boy Scouts in the Heart of Michigan area, but given space and logistics, more expressed interest than could be accommodated in the program. The $8 fee helped cover costs for supplies, venue, food, and a special patch. It took place from 10 am to about 4 pm on April 10, and feedback from leaders and participants was very positive.

Earth Day

Attendees enjoyed many exhibits and activities at an Earth Day celebration sponsored by MCFTA, ACS, Chippewa Nature Center and Midland Area Volunteers for Recycling on Saturday Apr 24, 10 am - 2 pm at MCFTA.

Many exhibits related to the theme ("Plants—the Green Machines"), but alternative energy was also front and center with a display from Brion Dickens of Woodland Wind LLC, and both "earth" and "water" tunnels were available to allow participants to observe ecosystems up close.

Teri Bickmore, a master gardener, had a table of activities that included a "propagation station" for plant cuttings, tissue paper flowers, free popcorn, and edible seeds. Dow Corning and Dow Chemical exhibits demonstrated solar silicon and green roofing, respectively, and articles as well as fashions made from "trash" were also on display.

Free white pine seedlings as well as seeds and soil were distributed by ACS; Randi's Green Thumb donated the latter. In addition, ACS offered hands-on activities related to green pigments, natural acid-base indicators, and paper recycling. CMU and SVSU chemistry students also assisted in the expo, which was open to the public without charge.

Earth Day participants plant their own seeds to take home with the help of Gretchen Kohl.

EXPLORE Day

Gina Malczewski and Lisa Thackery ran four sessions of hands-on acid/base activities at St. Thomas Aquinas School in Saginaw on April 23. About 90-100 students obtained experience with turmeric paper, the pH scale and household materials of various properties, as well as three liquid indicators. Two classes were fifth grade and two were eighth graders.

BBBS-Big Brothers/Big Sisters

Six volunteers have helped with after school BBBS programs (Teaming Up With YOUth) since December 2009. The program is now suspended for the summer but will be offered again in the fall.

We visited 13 schools in Midland County (out of 18 that offer the TUWY program) with a couple of schools having multiple visits. Hands-on activities were offered and presented informally to groups of around 15 "Littles" with their high school or college "Bigs." Visits typically lasted 30-45 minutes, and covered topics from hissing cockroaches to carbon dioxide and density.

The organizers are very enthusiastic about our participation, and we expect to expand next year. In fact, we would like to pair presenters with a school for possible monthly visits. Please contact Lisa Thackery if you are interested—all those who did these presentations enjoyed the "contact time."

Anand Badami and Gina Malczewski demonstrate plant-based chemistries on Earth Day.

National ACS

Need Training? Try An ACS Webcast

Need training but can't afford time away from the office? Few companies are immune from the economic hardships in the headlines and many budgets have been trimmed. But it is still crucial to your career to engage in continuing education to expand your skills and stay abreast of new topics.

Join the ACS Webcast mailing list at www.proed.acs.org/emailme to be the first to hear our 2010 summer/fall courses, try out new courses for free, and receive discounts not available to the general public! Save your time and money and take a look at the courses available online through ACS.

ACS Webcast Short Courses provide the same quality training that ACS has long been known for, but, because the courses are presented over the Internet, they offer added convenience and flexibility.

Economical: Most ACS Webcasts cost less than $100 an hour, which is far less than most technical training.

Easy: Our technology is easy to use and works with all typical computer systems so virtually anyone can easily take a webcast from the comfort of their home, office, or lab.

Convenient: Class attendance is NOT required. If you miss a class, simply use your on-demand access to the session recording so you can catch up on your own time.

Informative: All class materials are available for download and you can email the instructor anytime.

There are expanded course offerings in analytical, organic, pharmacology, engineering, instrumentation, and other areas.

June Courses:
- Patent Law Fundamentals
- Fourier Transform Infrared Spectroscopy
- Quantitative Spectroscopy: Theory and Practice

July Courses:
- Essentials of Organic Chemistry
- Polymorphism in Organic/Pharmaceutical Systems

For the full list of Webcast Short Courses and more information on available discounts, visit www.ProEd.acs.org.

National ACS

ACS Financially Healthy Despite 2009

WASHINGTON, April 26, 2010 The 2009 American Chemical Society Annual Report is now available online at www.acs.org/annualreport. The report stresses that the Society remains financially healthy and committed to providing its more than 161,000 members with the best programs, products and services to further their careers and advance their science.

While acknowledging that 2009 was one of the most economically difficult years in decades, the report emphasizes that ACS successfully rose to this challenge, launching several new initiatives and reinventing or reinvigorating others to help its members and other scientists and engineers continue to improve people's lives through the transforming power of chemistry.

The 2009 ACS annual report also has all of the traditional features of an ACS annual report including the Society's financial information, ACS-by-the-Numbers, and the Officers' Message.

In their Officers' Message, ACS Board Chair Judith L Benham, ACS President Thomas H. Lane and ACS Executive Director & CEO Madeleine Jacobs concluded, "We will continue to deliver products and services that our current and future members and other stakeholders value. We will continue to provide them with the tools they need to enhance their skills, further their research and advance their careers. That's been our pledge for more than 130 years. And we remain committed to it."

MC Editor

YCC Invites All to Dinner & Seminar

"Advanced Biofuels: Challenges and Opportunities for the 21st Century"

Dr. Dennis Miller
Michigan State University

Wednesday, June 2
Beef brisket dinner 6-8 p.m.
Mount Pleasant Brewing Co.

FREE to ACS members - $5 all others

Please RSVP to Dale LeCaptain: lecap1dj@cmich.edu

The Younger Chemist/Student Committee of the Midland ACS invites you to "Dinner & a Seminar" (dining amongst the fermentors!). Professor Dennis Miller from Michigan State University will be presenting his latest works in Bioprocess Engineering. He is a renowned Chemical Engineer with publications in renewable feedstocks, reactive distillations, and numerous other bioprocessing related chemicals.

Event is co-sponsored by the Midland ACS and Central Michigan University.

MC Editor

MSU Fermentation Tour

MSU Fermentation & Distillation Tour

Saturday, June 5
Noon—6 p.m.
Michigan State University

Cost: $10
Includes transportation from CMU - Dow Science Bldg.

Space is limited

Please RSVP to Dale LeCaptain at lecap1dj@cmich.edu

Questions? Contact Dale LeCaptain at lecap1dj@cmich.edu

Diana Deese, Awards Chair and Eva Li, ACS Member

Longtime Members, Students, and Educators Recognized

Over 150 people attended the 19th Annual Spring Science Education Recognition Awards Dinner. Dr. Lane gave a spectacular opening speech and John Blizzard delivered a contemplative set of closing remarks. Our 50 and 60 year awardees interacted with many of the high school and college students, taking the theme of mentoring to heart. Those interested in science from industry and academia shared plenty of wonderful stories. A great time was had by all.

The Midland ACS Section held the banquet on April 22, at Dow Corning Corporation headquarters. There were over 20 award recipients being recognized for their outstanding performance in either or both the U.S. National Chemistry Olympiad and high school chemistry.

Dr. Thomas Lane, president of the ACS in 2009, was invited as an honorary speaker to inspire the young generation and persuade them to pursue science as their lifelong goal, especially in green innovation. But to do it successfully, according to Dr. Lane, no one plays a more important role than teachers to educate their students, expand their learning capacity, help them resolve problems and broaden their interest in science.

A deep thanks was expressed for every teacher's dedicating their time and effort to inherit the spirit of science from one generation to the next. In particular, two of the teachers were elected by their grateful students for a very special appreciation because of the positive influence they brought on changing the student's learning attitude in science. The two teachers are Melinda Coyle from Northeast Middle School and Sandra Schafer from John Glenn High School.

In addition, there were ten college and university students who received awards for their devotion of time and wealth in chemical research and technology in the academic environment.

Other than the academic awards, the chapter also announced Lisa Thackery from Dow Corning to be the Science Education Volunteer of the Year and awarded Theophilus Leapheart from Dow Chemical for promoting diversity in sciences, their excellent services making sure sciences are exposed to every corner of the community. Furthermore, 13 section members were awarded with the ACS Membership Certificate in recognition of their 50-plus-year loyalties lying with ACS.

Congratulations again to all award recipients, the science passion living within their hearts means so much more than the achievement accomplished. Remember, the world would have been different without you so keep the science alive.

The following list identifies this year's awardees *(Editor's note: longtime membership bios will appear in the next issue of the MC)*:

Outstanding High School Chemistry Student Award recipients.

50 Year and 60 Year ACS Membership Certificates

Glenn U. Boggs	50 Year
James Brewbaker	50 Year
Gus L. Constan	50 Year
Donald L. Schmidt	50 Year
Robert L. Miller	60 Year
Gerald A. Clark	60 Year
Dick. D. DeLine	60 Year
Robert A. Delap	60 Year
Henry J. Dishberger	60 Year
Howard L. Garrett	60 Year
Gust J. Kookootsedes	60 Year
Owen L. Stafford	60 Year

U.S. National Chemistry Olympiad

Dalton J. Allan, Saginaw Arts & Sciences Academy
Camille E. Bishop, Midland HS
Bryan A. Mazor, Midland HS
Ian Vonwald, Midland HS
Dakota Suchyta, John Glenn HS
Joel T. Parsons, Midland Academy
Kimberly T. Dinh, H. H. Dow HS
Andrew Briggs, H. H. Dow HS

Outstanding High School Chemistry Students

Kimberly T. Dinh, H. H. Dow HS
Alec Bergman, Frankenmuth HS
Dakota Suchyta, John Glenn HS
Sarah Zerod, All Saints Central HS
Deane Zimmerman, Sacred Heart Academy
Aaron Bland, Windover HS
Courtney Bourbina, Swan Valley HS
Kara Brewer, Garber HS
Adam Dupuis, Merrill HS
Allyson Gould, Breckenridge HS
Shelby Hemker, Chesaning Union HS
Magda Hlavacek, Saginaw Arts & Sciences Academy
Renee Kucher, Freeland HS
Meghan Smoker, Alma HS
Sarah Lichtman, Midland HS
Caycee Hart, Shepherd HS
Alex Johnson, Bay-Arenac HS
Amber Ouellette, Bay-Arenac HS
Tyler Doyon, Birch Run HS

Midland Section - ACS Scholarship in the Chemical Sciences

Michael Gustin, CMU

ACS - CTA Chemical Technology Student Recognition Awards

Todd Daeschlein, Delta College
Ben Kuehnemund, Delta College

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Todd Schramke, Delta College
Svetlana Hauffe, Delta College

Outstanding College Chemistry Students
Ian Harrier, Alma College - Chemistry
Shane Arthur Morrison, SVSU – Chemistry
Michael G. LaFramboise, Delta College - Chemistry
Jennifer Martin, CMU - Biochemistry
Zachary Berg, CMU - Chemistry
Jennifer Rauch, CMU - Biochemistry

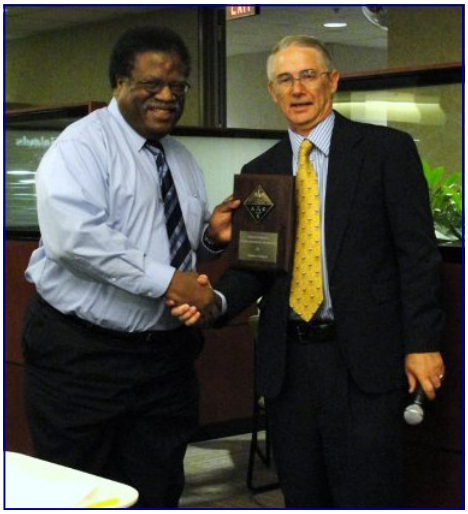
Outstanding Achievement in Middle School Science Education
Melinda Coyle, Northeast MS, Midland

Outstanding Achievement in High School Science Education
Sandra L. Schafer, John Glenn HS

Outstanding Achievement in College Chemistry Education
Anton Jensen, CMU

Science Education Volunteer of the Year
Lisa Thackery *(pictured above with John Blizzard, 2010 Chair)*, Dow Corning

Outstanding Achievement in the Promotion of Diversity in Chemistry, Related Sciences and Engineering
Theophilus Leapheart (*pictured below, left*), The Dow Chemical Company



Flint Lewis, Staff Liaison to the Committee on Nominations and Elections

Regarding Fall 2010 National Election Candidates

The Committee on Nominations and Elections (N&E) is pleased to announce the slate of candidates that will appear on the fall 2010 ballot. According to ACS Bylaw V, additional candidates may be nominated by petition until July 15th, 2010.

We are providing this information as a reminder so that no undue publicity will be given to a candidate running for national office and to assure that the *"Fair Election Procedures"* are adhered to according to ACS Bylaws.

If you invite or provide a speaking forum for one candidate, you must invite ALL candidates for that position to speak at the same time to be in compliance with the ACS *"Fair Election Procedures."* The candidate(s) can then choose whether or not to participate.

N&E requests that a copy of your invitation to any candidate, with regards to an article for publication from them or mentioning them, or an invitation to speak or appear at a local section meeting be provided to Flint Lewis for filing in their election folder for reference. You can send it via e-mail at f_lewis@acs.org, and also copy Liz Beckham, who works closely with all candidates, at l_beckham@acs.org.

N&E has published a set of *"Guidelines on Campaigning and Communication"* which can be accessed at http://www.acs.org/elections (click on "Campaign Guidelines"). Note under the heading "Process" that candidates may begin their election campaign no earlier than one month after the ACS Spring National Meeting.

Candidates for President-Elect, 2011
- Dr. Luis A. Echegoyen, Professor, Clemson University, Clemson, SC
- Dr. Bassam Z. Shakhashiri, Professor, University of Wisconsin, Madison, WI

Candidates for Directors-at-Large, 2011-2013
- Dr. Janan M. Hayes, (Retired) Professor Emeritus, Merced College, Sacramento, CA
- Dr. Robert L. Lichter, Principal and Co-Founder, Merrimack Consultants, LLC, Barrington, MA
- Dr. Kathleen M. Schulz, President, Business Results Inc., Albuquerque, NM
- Dr. Kent J. Voorhees, Professor, Colorado School of Mines, Golden, CO

Candidates for District II Director, 2011-2013
- Dr. George M. Bodner, Professor, Purdue University, West Lafayette, IN
- Dr. Joseph R. Peterson, (Retired) Professor Emeritus, University of Tennessee, and (Retired) Oak Ridge National Lab, Knoxville, TN

Candidates for District IV Director, 2011-2013
- Dr. Larry K. Krannich, Professor Emeritus, University of Alabama at Birmingham, Birmingham, AL
- Dr. Will E. Lynch, Professor, Armstrong Atlantic State University, Savannah, GA

If you have questions or concerns regarding candidates or national election procedures, please contact Flint Lewis (202-872-4072) or Yvonne Curry, Assistant Staff Liaison (202-872-6240).

Bob Howell and Kurt Brandstadt

239th National ACS Meeting Held in San Francisco

The 239th National ACS Meeting was held in San Francisco, March 19-25. As usual the meeting was a busy one for Midland Section Councilors. Both councilors are members of important committees.

Brandstadt is a member of Corporation Associates and the Project SEED Committee (which received a record number of applicants for funding at this meeting).

Howell serves as a member of the Committee on Professional Training (CPT), the Committee on Patents and Related Matters (CPRM) and the subcommittee on awards, the Organic Examination Committee (a new first semester organic exam was finalized at this meeting), the Nomenclature Committee (a symposium on nomenclature for nano particles and composites is being planned for the spring meeting in Anaheim) and the PolyEd Committee and chairs the undergraduate awards subcommittee (supplements to facilitate the incorporation of macromolecular science/ polymeric materials into the chemistry foundational courses are being prepared).

Of course, both councilors spent Wednesday morning in Council meeting. Actions of Council are listed below. It might be noted that voting was done electronically using "clickers" – an innovation instituted by our own Tom Lane last year.

Attendance
The meeting attracted 18,076 registrants as follows: Regular attendees, 9, 7145; Students, 5,705; Exhibitors, 1,219; Exposition only, 923; and Guests, 514.

Candidates for President-Elect
Luis A. Echegoyen and Bassam Z. Shakhashri were selected as candidates for President-Elect, 2011.

Candidates for Director, District II
George M. Bodner and Joseph R. Peterson were selected as candidates for Director from District II (Midland Section district).

Candidates for Directors-at-Large
Janan M. Hayes, Robert L. Lichter, Kathleen M. Schulz and Kent Voorhees were selected as candidates for Director-at-Large. Two will be elected in the fall.

2011 Member Dues
Member dues were set at the fully escalated rate of $146.

Local Section Allotment Calculator
The current formula for determining allotments to local sections will continue for three more years.

Speaker Service Hospitality Award
The Midland Section was one of 22 sections nominated for outstanding performance while hosting an ACS tour speaker. The Section was not among the three finalists.

Member Statistics
At the close of 2009, Society membership totaled 161,783 compared to 154,024 for year-end 2008. The number of new membership applications received last year was the highest ever. The 2009 numbers also reflects the transition of 6,658 former Student Affiliates to the new student member category in June 2009 and the recruitment of 6,341 new student member undergraduates.

SciFinder Enhancements
Chemical Abstracts Service has underway enhancements to SciFinder to accelerate precision and productivity in searching the Chem Abstracts data base. In particular, the "reaction" feature is being refined.

Job Fair
Forty employers posted 112 available positions; 712 job seekers were present; 295 interviews were conducted; 2,140 messages exchanged.

Unemployment
Nationwide unemployment levels remain (nationally 11% of the work force; 12.2% in California; 16% in Michigan) quite high, but are lower, 3.6%, among practitioners of the chemical sciences.

International Year of Chemistry
Planning is underway for several significant 2011 events to commemorate the International Year of Chemistry.

Petitions Before Council
- A petition to allow the Council Committee on Membership Affairs to elect all members of the Society was approved. This is in lieu of an admissions committee.
- A petition to amend the Constitution to allow candidate selection by member petition failed by a narrow margin [For 199 (46.9%); Against 225 (53.1%)]. This provision remains in the by-laws (but will not be a part of the constitution) and the opportunity to nominate by petition will remain.
- A petition to amend the election timeline failed overwhelmingly [For 112 (27.4%); Against 297 (72.6%)]. Elections will continue to be conducted according to the previously established timeline.

Society Finances
The Society's total 2009 revenue ($406 million) was up +1% from 2008, but fell short of the 2009 approved budget by $19.5 million or 4.1%. Fortunately, the revenue shortfall was fully anticipated in early 2009. Therefore, contingency planning actions and cost containment initiatives were implemented across the Society, resulting in expense savings totaling $22.5 million. Significant reductions were realized in salaries and fringe benefits, and in discretionary accounts such as travel, training, and professional services. As a result, the Society's Net Return from Operations was $13.7 million, or $3.0 million greater than anticipated in the 2009 approved budget.

Unrestricted Net Assets rebounded in 2009 to approximately $124 million, from a previous $60 million at the end of 2008. The significant increase can be attributed to the favorable operating results, investments gains, and a net reduction in the Society's post-retirement benefit plan liabilities. The Society ended the year in compliance with four of the five board-established financial guidelines. The Fund Balance Ratio Guideline, which measures the adequacy of the Society's unrestricted net assets, was not met. The financial outlook for 2010 is better, and ACS management expects the Society to meet the 2010 approved budget.

Letter to the Editor

Electing Two Candidates—Each By a Majority

Editor's note: Opinions expressed in letters to the editor reflect the view of the contributor(s) and should not be taken to reflect the views of the Midland Section, other Midland Section members, the Midland Section Board of Directors, or the American Chemical Society.

In the 2009 ACS election for Directors-at-Large five candidates ran for two positions (Chem. Eng. News, Nov. 23, 2009, p 7). Directors-at-Large are selected by Councilors with each Councilor having two votes. The vote tallies were as follows:

Dennis Chamot	221	≤63.1%
Valerie Kuck	157	≤44.9%
Howard Peters	153	≤43.7%
H. N. Cheng	113	≤32.3%
Ray Dickie	56	≤16.0%
Total	700	

The number of Councilors voting was not reported. If each Councilor voted for two candidates there would have been 350 voters. If some Councilors only voted for one candidate there would have been >350 voters. Thus one needs to divide the number of votes each candidate received by ≥350 to determine the percent of voters voting for that candidate. According to current bylaws the two candidates (Chamot and Kuck) who received the most votes were elected (plurality). Only Chamot could have been elected by a majority (>50%) of the voters (≤63.1%). Kuck was not favored by a majority of the voters (≤44.9%).

A method is proposed to carry out elections in which two or more candidates are elected with each being elected by a majority of the voters. The method (multiple choice or instant run-off) involves voters prioritizing their votes, in the present case specifying first through fifth choices. The method is somewhat more complicated than the simple run-off method when only one candidate is elected, which is the current way ACS President-Elects and District Directors are elected if there are more than two candidates for that position. The 2009 election in which Nancy Jackson was elected President-Elect from three candidates is an example of this procedure.

The procedure in outline form for the election of two candidates under discussion here is as follows. The first Director-at-Large is elected by a majority in exactly the same way a single candidate would be elected from five candidates. Then all the votes for the candidate just elected are removed from the voting priority list of each voter. The second successful candidate is then determined in exactly the same manner as the first using the new prioritized list of each voter. Thus both candidates are elected by a majority. If more than two candidates are to be elected, the preceding procedure is repeated until the required number of candidates has been elected, each by a majority of the voters.

To illustrate this procedure an example is presented. Assume that 400 voters vote for five candidates (A, B, C, D, and E) in priority order with some voters not voting for all five candidates. Two candidates are to be elected. The vote counts and counting procedures to determine the first candidate to be elected are shown in Table 1.

Because no candidate received a majority of the first-choice votes, candidate E is eliminated and the second-choice votes on the ballots where candidate E was the first-choice are added to the first-choice votes of the other four candidates. This procedure is repeated until candidate A is finally elected by a majority after three rounds of voting. A fourth round of voting could have been required if no candidate had received a majority after the third round. To elect the second candidate, all the votes for candidate A are removed from each voter's ballot. The above procedure is then

Table 1. Ballot Counting Procedure to Elect First Candidate

Candi-date	First-Choice Votes	%	Second-Choice Votes On Ballots Where E Was First Choice	First- + Second-Choice Votes	%	Second-Choice Votes On Ballots Where D Was First Choice + Third-Choice Votes On Ballots Where First Two Choices Were Eliminated	First- + Second- + Third-Choice Votes	%
A	126	32	24	150	38	49	199	51
B	90	23	1	91	23	2	93	24
C	87	22	4	91	23	6	97	25
D	65	16	0	65	16			
E	32	8						
Total	400	101	29	397	100	57	389	100

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Wendell Dilling, Director and Historian

In Past Issues of *The Midland Chemist*

40 Years Ago This Month

In *Campus Recruiting* by L. Dennis McKeever: "After a period of relative tranquility, signs point to a renewal of demonstrations against campus recruiting. My recent experiences as a recruiter at the University of Michigan bear this out. The "New Left" is now turning from very specific attacks against things like napalm to broader topics like "capitalistic exploitation" and the adverse effect of industrial growth on the ecology. An increasing number of college students are now questioning the value of economic growth and its resultant affluence. Advancing technology and increased production has, in their mind, made life increasingly complex and wearing. In fact, it would appear that they view economic growth and the solution to environmental and social ills as being mutually exclusive."

30 Years Ago This Month

In *Local Chemist to Mystify Audience*: "A Midland man who taught famed Broadway star Doug Henning the "torn and restored newspaper" trick will produce and be master of ceremonies at "A Magic Spectacular," to be presented twice daily June 12 and 13 at the Midland Center for the Arts as part of Matrix: Midland. Gene Anderson, a Midland Section ACS member and Senior Research Specialist with Dow Chemical, currently on assignment in Horgan, Switzerland, will return to star in the show he is producing and hosting."

20 Years Ago This Month

In *22nd ACS Central Regional Meeting*: "The 22nd ACS Central Regional Meeting," hosted by the Midland Section, will be held on the campus of Saginaw Valley State University, University Center, Michigan, June 6-8, 1990. The technical program features invited papers in 28 symposia as well as contributed papers in chemical education, information science, polymers, and analytical, computational, environmental, inorganic, organic, physical, and process chemistry. Included among the symposia is the Michigan Molecular Institute's 19th International Symposium, "Dendritic Molecules and Hyperbranched Polymers."

10 Years Ago This Month

In *Kids + Chemistry = Mystery Solved* by Pat and Peter Dreyfuss: "Kids turned into sleuths and Midland chemists became private detectives as they joined forces to solve the mystery of 'The Unsigned Letter' recently. The event was part of National Science & Technology Week (NSTW), April 10 through April 14, 2000, at the Hall of Ideas of the Midland Center for the Arts (MCFTA). It marked the Midland Section's debut of Kids & Chemistry, a Program developed by the American Chemical Society to give scientists the resources and training necessary to share hands-on science with mainly middle school children ages 9 to 12. National ACS had trained 36 local scientists at a Kids & Chemistry workshop at the 1997 Central Regional Meeting in Midland, but until now the local section had not implemented the program."

(Continued from page 9)

repeated as shown in Table 2.

Candidate C is finally elected by a majority after three rounds of voting. This procedure can be generalized for the case where any number of candidates is elected from any number of candidates. With modern computerized voting the above calculations should be relatively easy.

The above situation applied to at least one Midland Section election. In the 2005 election for Directors, three Directors were elected from six candidates. The vote counts were as follows for the six candidates: 74, 64, 50, 48, 35, 33 (304 total votes). Each voter was allowed three non-prioritized votes. Thus there were a minimum of 102 voters, and the three highest vote recipients, who were elected (plurality method), were selected by ≤73%, ≤63%, and ≤49% of the voters. Thus at least one of the Directors was elected by less than a majority.

If one believes in election by majorities, both National and Midland Section ACS elections procedures should be changed.

Wendell Dilling

Table 2. Ballot Counting Procedure to Elect Second Candidate

Candi-date	First-Choice Votes	%	Second-Choice Votes On Ballots Where E Was First Choice	First- + Second-Choice Votes	%	Second-Choice Votes On Ballots Where D Was First Choice + Third-Choice Votes On Ballots Where First Two Choices Were Eliminated	First- + Second- + Third-Choice Votes	%
B	90	33	9	99	37	25	124	48
C	87	32	17	104	39	31	135	52
D	65	24	1	66	25			
E	32	12						
Total	274	101	27	269	101	56	259	100

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