



Project Science Literacy helps teachers “Bring Science to Life in the Classroom”

see page 3



THE MIDLAND CHEMIST

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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.

Neither *The Midland Chemist*, nor the Midland Section, nor the American Chemical Society assumes any responsibility for the statements and opinions advanced by contributors of or to *The Midland Chemist*.

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Check Out Midland Section ACS Web Site

A Wealth of Information for You

The major modes of communication to the membership of the Midland Section are *The Midland Chemist* and the Midland Section web site. Because of lead times and space limitations, *The Midland Chemist* can only communicate items that are known well in advance and do not require a large amount of space. In contrast, the web site can communicate information as soon as it is posted and can hold large amounts of information. In other words, members who want the latest information on Section activities will find it on the web site, at the following address: <http://membership.acs.org/M/Midl/>. This mode of communication does require having access to the Internet and taking the initiative to look at the web site, whereas *The Midland Chemist* requires only that members read a publication that is delivered to their home or business.



Wendell Dilling, Chair
ACS Midland Section

The origins of the Midland Section web site go back to 1993 when in the annual report the question was asked, "Would ACS be interested in having an Internet-type service to link local sections and national?" In 1996, Kenneth Magnell of Central Michigan University set up a web site for the Section. The original Midland Section web site contained information about meeting schedules, officers, and committees, *The Midland Chemist*, the Fall Scientific Meeting, employment aids, CMU's Department of Chemistry, and miscellaneous resources. CMU hosted the site until this year when it was moved to the National ACS server. In June 1997, James and Ann Birch redesigned and significantly expanded the web site. Ann has served with distinction as webmaster since 1997. A new webmaster is being sought to replace Ann, who has been serving as editor of *The Midland Chemist* since the beginning of 2000.

Presently the web site contains the following pages: *Welcome, Overview, Events, Services, Education, Leaders, Opportunities, The Midland Chemist, Links, Minutes of Board Meetings, and Great News.*

The *Welcome* page contains a table of contents for the site. The *Overview* page describes the objectives, some of the history of the Section and its scientific meetings, and H.H. Dow's and W.J. Hale's parts in early Section history. *Events* describes upcoming meetings and activities (occasionally with updates to information given in *The Midland Chemist*) and

the board meeting schedule.

The *Services* page contains information about local employment, career services, reasons why one should join the ACS, and a member interest survey. *Education* describes recent activities of the Section's Project Science Literacy program and other educational activities.

The *Leaders* page contains the most recent chairman's column and a list of all current Section leaders with mailing addresses, e-mail addresses, and phone numbers, as well as their ACS job descriptions. *Opportunities* lists needs for Section leader candidates and needs for volunteers for various committees and activities. The page covering *The Midland Chemist* lists the volunteer staff, instructions on how to submit an article for publication, and a calendar of items to appear in future issues.

Links are given to web sites for National ACS services, other resources, area colleges, universities, other educational institutions, and area corporations. *Minutes of Board Meetings* (for the two or three most recent meetings) can also be read directly online. *Great News* highlights recent Section member awards and activities.

Take advantage of this opportunity to see the latest news about Midland Section events by adding <http://membership.acs.org/M/Midl/> to the bookmarks or favorites list on your Internet browser.

Wendell L. Dilling



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- **Competitive Analysis**
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*Project Science Literacy***Bringing Science to Life in the Classroom***By Ann Birch*

The Midland Section has been involved in science education for many years, but by far the most wide-reaching, successful program has been Project Science Literacy. In 1995, the Midland Section was awarded a \$10,000 grant from the Education Division of the ACS to develop "Science Demonstration Workshops for Elementary and Middle School Classrooms." Soon after, the Section received a grant from Dow Corning Corporation for \$20,000. Five years and five Phoenix awards later, this teacher education program has reached over 1283 teachers in 42 counties in Michigan.

The objective of Project Science Literacy is to work with K-12 teachers and improve their comfort level and working knowledge of science



through a hands-on approach. The entire program is based on the cooperative efforts of local industry, higher education institutions, local intermediate school districts, the American

Chemical Society, and local science museums. In other words, everyone gets into the act and everyone benefits. Ultimately, though, it's the students who benefit the most. If their teachers are exposed to the latest in basic science information and resources and are stimulated to bring the students exciting experiences in science, the students can't help but respond. The result: more students interested in science and ultimately a better educated general public.

Project Science Literacy relies on three tools: a hands-on science workshop for classroom teachers, a kit of "chemical" supplies that are inexpensive and easy for teachers to replenish, and a "classroom-tested" demonstration workbook. In just the first two years of the program, over 400 teachers participated in 16 workshops at no cost to the teachers or the

school district. Response to the program has been very enthusiastic. John Blizzard, one of the authors of the original grant proposal, remembers one school administrator who scoffed at the idea that his district's teachers would actually take a Saturday to attend a science workshop. According to John, "He was a bit surprised when more teachers showed up on one Saturday morning than we could handle."

Marvin Tegen, also involved with the program since its beginnings, relates an incident that at first dismayed the trainers during one workshop. "One teacher got up and walked out in the middle of a session," says Marvin, "and we were disappointed to think someone was unhappy with the workshop." But the teacher returned a short time later with her superintendent in tow, making it clear that Project Science Literacy was the type of program the teachers needed.

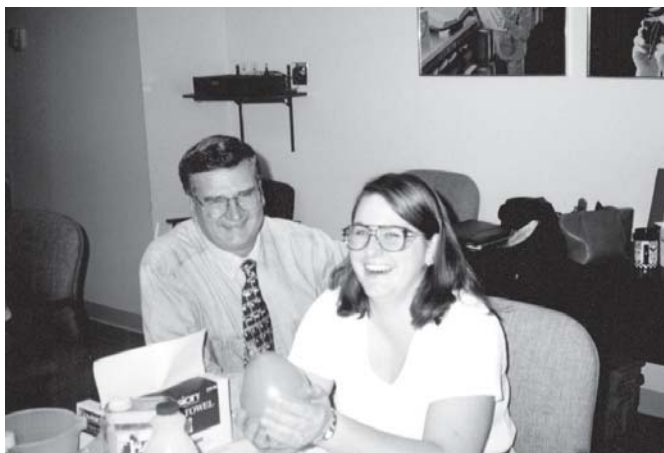


Many sources are quick to point to the teacher as the main problem in science education, but elementary teachers are not required to take more than a semester of science, and they seldom choose chemistry. Yet the

state of Michigan mandates that they teach hands-on chemistry activities. Despite these difficulties, "teachers are eager to embrace new ideas that will assist them in teaching what they perceive as a difficult but important subject," says Gretchen Kohl, a Project Science Literacy trainer and organizer. "In addition, Project Science Literacy is not just concerned with developing competence in teaching science, it also strives to increase teachers' confidence." Education is at best a complex process. It becomes even more complex for science education because science is a dynamic subject. To become a masterful teacher of science requires ever-increasing capabilities and understanding.

Another challenge for teachers is the problem of insufficient funds for the purchase of chemicals for classroom experiments and demonstra-

tions. Using Project Science Literacy kits and the workbook, teachers find that “everything is a chemical or a combination of chemicals.” Using household and other easily available chemical products saves money and eliminates the trouble of ordering from specialized supply houses. Using household chemicals also encourages students to read the labels on products that they use every day. Recognizing the everyday uses of chemicals helps students become “chemically literate.”



The workbook “Bringing Science to Life in the Classroom” covers 16 science experiments and has been crucial to the success of the program. The experiments involve subjects such as pH, density, chromatography, osmosis, and sublimation. Each experiment begins with a basic question, such as “What common materials contain starch, and how can we test for its presence?” and then goes on to give background discussion, the chemistry involved, detailed materials lists and experimental procedure, and follow-up discussion and evaluation. The teachers take these experiments back to their classrooms fortified with additional knowledge and confidence.

What’s happening with Project Science Literacy now? In 1999, 291 teachers participated in the “Bringing Science to Life in the Classroom” workshops. The workshops have continued to expand to an ever-larger statewide population. Two new resource documents have been assembled and added to this program: a “How To” guide, which is a step-by-step guide to educational organizations or scientific societies who wish to create their own science education teacher workshops, and an advanced (second year) workshop designed around environmental and polymer chemistry. Kathleen Thompson, ACS National Chemistry Week Chair, has requested the use of our “How To” manual as a model for National Chemistry Week across the ACS nationally. The “How To” manual was also distributed to over six groups within Michigan in 1999 during presentations on our program. To date, two of these areas (Saginaw and Macomb) are in the process of establishing this workshop in their areas.

Even more exciting, Project Science Literacy is going global with the cooperation of the Association of Science Technology Centers. This is the largest organization of its kind in the world, and the Midland Center for the Arts Hall of Ideas is playing an important role in making this collaboration happen.

But, regardless as to whether the teacher is in mid-Michigan or in France, the objective is the same. "We are striving to remove the phobia from science instruction," says Karol Childs, director of the Hall of Ideas and active Literacy volunteer. "By helping make teachers more at ease with science topics, we will be doing the same for their students, leading to a better informed, more knowledgeable public."

For more information on Project Science Literacy, contact Gretchen Kohl, 517-496-8200 (gretchen.kohl@dowcorning.com).

Request for Nominations for Chemistry in the Public Interest Award

The Northeastern Section of the American Chemical Society provides the Gustavus John Esselen Award for Chemistry in the Public Interest to recognize a chemist for outstanding achievement in scientific and technical work that contributes to the public well-being and thereby communicates positive values of the chemical profession. The award includes a \$5000 prize, medal of recognition, and an award ceremony and formal address by the awardee at Harvard University.

The award was established in 1987 to honor the memory of Gustavus John Esselen, a distinguished member of the Northeastern Section. The first awardees were F. Sherwood Rowland and Mario J. Molina, who subsequently received the Nobel Prize.

Any field of chemistry is valid as long as the scientific work has clearly contributed to the public well-being and its value to society has become apparent.

To nominate, please provide statements from two co-sponsors as well as a brief biography of the candidate, a description of the work that has been recognized as communicating positive values for the chemistry profession, and copies of selected, pertinent articles. Popular news and feature articles should be included as an indication of public interest. Nominations and inquiries should be directed to Dr. Iclal S. Hartman, c/o Karen Piper, 19 Mill Road, Harvard, MA 01451. Nominations should be posted no later than October 16, 2000. Joint nominations are acceptable. Nominees should be living residents of the United States or Canada at the time of nomination, and the significance of the work should have become apparent within the five years preceding nomination.

Call for Papers: 2000 Fall Scientific Meeting

By Dean Millar

The Fall Scientific Meeting will be held on Saturday, October 28, 2000, at Dow's Employee Development Center in Midland. Although the program is filling up quickly, there are still opportunities for you to contribute with an oral presentation in any of four symposia:

Combinatorial Chemistry (Rik Tuinstra, Chair): General papers or posters are solicited in the area of combinatorial research. The range of appropriate topics will include applications of parallel or rapid serial synthesis or process optimization, parallel or rapid serial materials property screening, high throughput data analysis, or design of experimentation of combinatorial research.

Rik Tuinstra
The Dow Chemical Co.
1776 Building
Midland, MI 48674
rtuinstra@dow.com

Thermophysical Properties of Cross-Linked Materials (Udo Pernisz, Chair): Papers are solicited covering properties including thermal conductivity, expansivity, or heat capacity, as well as the effect of temperature on mechanical, electrical, or optical properties in bulk or at interfaces. The materials for which such properties are of interest can range from highly cross-linked networks to elastomers derived from linear polymers to filler-reinforced systems.

Udo Pernisz
Dow Corning Corp.
Mail C041A1
Midland, MI 48686
udo.pernisz@dowcorning.com

Biochemistry (Elizabeth Butch, Chair): Abstracts from all areas of biochemistry and molecular biology will be accepted. Special emphasis will be placed on projects involving possible applications to medicine or the study of specific disease states.

Elizabeth Butch
Eastern Michigan University
Department of Chemistry
Ypsilanti, MI 48197
elizabeth.butch@emich.edu

Chemical Education (Laura Vosejka, Chair): General papers or posters are solicited in all areas of chemical education, with a special emphasis on teaching at the secondary level, including university-local district co-operation.

Laura Vosejka
The Dow Chemical Co.
1702 Building
Midland, MI 48674
ljvosejka@dow.com

Abstracts will be considered through Sept. 1, 2000. Abstracts may be sent by e-mail or conventional mail, and should be submitted to the appropriate symposium chair. Other questions regarding program activities can be directed to:

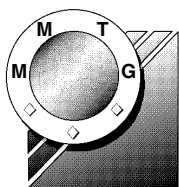
Dean M. Millar	ph. 517-636-8496
The Dow Chemical Company	fax 517-638-9716
1776 Building	dmmillar@dow.com
Midland, MI 48674	

All submissions will be considered for oral presentations in the above symposia or for a poster presentation when necessitated by topic and/or time availability.

Instructions for Preparing Abstracts for the Fall Scientific Meeting of the Midland Section of the American Chemical Society:

John Doe and Jane Smith, Department of Chemistry, Saginaw Valley State University, University Center, MI 48410

Begin typing your abstract here. Use Microsoft Word (IBM or Mac) or WordPerfect (IBM or Mac) to create your files. One abstract per file. Use Times font—12 point size. Single space your work and double space between paragraphs. Do not use any indentations. **Bold** the titles only. Body copy of the text should be typed in normal type. Use superscript and subscript and correct symbols where appropriate. Use *italic* only when required. All copy should be typed flush left. Do not center or justify type. Use a 4½-inch wide line. Each abstract is limited to a maximum of a 4-line title and 1300 characters in the body of the abstract. Information should appear in the following order: title, author list with complete address; presenter underlined; one blank line between title and abstract. Electronic submissions are preferred.



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present

ACS & MMTG Chemistry Show 2000

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Location

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Schedule

Two chemistry presentations are scheduled for both Tuesday, August 15 and Thursday, August 17:

6:00 to 7:00 p.m. Tim Drier from The Dow Chemical Company will demonstrate glass blowing

7:00 to 8:00 p.m. MMTG will present a chemistry demonstration

Experiments

- Cryogenics using liquid nitrogen and frozen carbon dioxide
- Ammonia fountain
- Stop light
- Water-wine-milk-beer demo
- Nylon
- Ion exchange using silver nitrate and copper
- Burning diaper
- And more!

Come on out and see the show!

FSM Keynoter to Focus on Need for Change

By Dean Millar

The keynote address at the ACS Fall Scientific Meeting, to be held on October 28, 2000, at Dow's Employee Development Center, will be delivered by Attila E. Pavlath, ACS president-elect, and is titled "It Is Time for a Change." The abstract of his address is as follows:

In 1971, an industrial bench-chemist was elected as ACS president over two well-known scientists by the largest election turnout in ACS history (almost 40%). His statement had one message: "The first responsibility of the ACS is to its own members." It apparently coincided with the feelings of a large part of the membership which was not unknown to the Society. In 1947, the ACS commissioned the Hancock study to survey ACS structure and the wishes of the members. The study found that 57% wanted from the ACS more than just publishing journals and organizing meetings. They wanted the Society to address the professional and economic status of chemists, e.g., the issue of licensing and/or employment related problems. While the Society dragged its feet on these actions, Sputnik created a euphoria with the expectation of a never-ending sky-is-the-limit progress, shelving further consideration of these problems, even though there were people who warned that sooner or later the bubble would burst, which finally happened in the early seventies. Nevertheless, even though another study brought out the same result as the one 25 years before, the majority of the actions were still aimed at chemistry and not at its practitioners. As we are entering in to the next century, the next millennium celebrating our 125th anniversary, we must make the changes our members want.



Dr. Attila E. Pavlath is an emeritus lead scientist at the Western Regional Research Center of the U.S. Department of Agriculture in Albany, California, in a research group on the utilization of agricultural products as chemical resources. He finished his undergraduate and graduate studies in Hungary with a diploma in chemical engineering at the Technical University of Budapest, and a doctorate degree in chemistry from the Hungarian Academy of Sciences. He was an assistant professor at the Technical University of Budapest and a group leader at the Central Chemical Research Institute of the Hungarian Academy of Sciences. He left Hungary in 1956 and was a research fellow at McGill University in

Montreal, Canada, until 1958 when he joined the Western Research Center of Stauffer Chemical Company in Richmond, California, as a senior group leader. Since 1967 he has been with the U.S. Department of Agriculture in Albany leading various research projects.

Dr. Pavlath's research experience of almost 40 years includes a wide variety of scientific areas. He is an internationally known expert in fluorine, textile, agricultural, glow discharge, and energy chemistry, where he has over 110 scientific publications, 25 patents, three books, and numerous chapters and reports. He has lectured throughout the world. In 1976, he was given the Outstanding Contribution to Chemistry Award by the ACS California Section, recognizing his 25 years research in fluorine chemistry. In 1987, he was selected as Federal Scientist of the Year in California. In 1989, he received the ACS Henry Hill Award for Distinguished Services in the area of professional relations and in 1991 the California Section's Walter Peterson Award for Outstanding Services. He also received numerous merit awards from the U.S. Department of Agriculture.

After chairing numerous ACS committees and serving 9 years on the ACS Board of Directors as director-at-large, he was elected in 1999 for the presidential succession (president-elect, 2000; president, 2001 and immediate past president 2002).

FOR HOW MANY MINUTES . . .

...would you feel comfortable discussing with your neighbor or friends the global chemical industry initiative known as *Responsible Care*?

If you are a member of the chemical industry, we urge you to learn about this initiative, which calls on chemical companies to demonstrate their commitment to improve all aspects of performance that relate to the protection of health, safety, and the environment.



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Student Affiliates Promote Professional Development in Chemistry Undergrads

By Dave Baker

The student affiliates program supports students, their faculty, and local section members in promoting professional development, mentoring, and support for undergraduates in the chemical sciences. There are nearly 900 ACS student affiliate chapters in two- and four-year colleges and universities.

I recently contacted Phil Squattrito, the 1999-2000 student affiliate advisor at Central Michigan University (CMU), and Steve Lawrence, who was the advisor at Saginaw Valley State University (SVSU) for a number of years.

Over the academic year the student affiliate chapters are involved in numerous outreach programs to promote chemistry in the local area. They have given demonstrations at local elementary schools. They have assisted the local section in celebrating and organizing activities for SciFest, National Chemistry Week, and Mole-Day, preparing demonstration kits and holding trivia contests. At SVSU, students have acted as science ambassadors for student orientation and participated in the Science and Math Extravaganza for Kids program (SMEK). CMU members have also been involved in judging local science fairs.

Both the SVSU and CMU student affiliate chapters have been recognized with ACS Chapter Awards. At CMU they have received three outstanding awards in the past three years with Phil Squattrito as their advisor. When Steve Lawrence was the faculty advisor at SVSU, they received five outstanding and one commendable award, and last year they received an honorable mention.

Through fundraising activities both student affiliate chapters have been able to send officers to local and national ACS meetings. In fact, the CMU Chapter has been able to send a delegation of some five to eight students to the last three spring national meetings.

Many previous student affiliate members and officers are in graduate schools in chemistry throughout the country including the University of Michigan, the University of Florida, and Northwestern University. Others have gone on to medical school or have accepted various positions in local and national chemical companies.

Over the past few years the number of active members in some local student affiliate chapters has declined. This may be due to fluctuations in the number of chemistry majors enrolled in programs. This may also be a reflection of students' busier schedules and other work commitments.


Steve said that it was the students from 1992 to 1997 who made the

SVSU chapter a success under the direction of Peter J. Moehs. As the advisor, Peter was able to raise money for two endowments to provide students with research and scholarly fellowships. Quite an astounding accomplishment!

With the end of this school year, Phil relinquished his role as faculty advisor of the CMU student affiliate chapter to Estelle LeBeau after seven very enjoyable years .

For more information on how to start or activate a student affiliate chapter, or to find out more about awards, mini-grants, and meetings go to the ACS Education web site at <http://www.acs.org/education/student/sachap.html> or phone the student affiliates program at 1-800-227-5558.

We would also be happy to hear from any of the student affiliate chapters in the Midland Section area. If you have news or articles you would like published in *The Midland Chemist*, contact the editor, Ann Birch, at ann.birch@editech-mi.com.

A large black diamond shape is centered on a white background. Inside the diamond, the text "Dow is proud to support the American Chemical Society." is written in a serif font. Below this text is the slogan "What Good Thinking Can Do." in a similar serif font. At the bottom of the diamond is the Dow Chemical Company logo, which consists of the word "DOW" in a bold, sans-serif font inside a black diamond. Below the diamond, the website address "www.dow.com" is written in a sans-serif font.

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What Good Thinking Can Do.



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Call For Nominations for 2000 Midland Section Awards

By Philip Squattrito

Each year the Midland Section honors an individual residing within the Section's geographical area who has demonstrated outstanding achievement and promotion of the chemical sciences. The Outstanding Achievement and Promotion of the Chemical Sciences award recognizes dedication and service to the chemical profession. The recipient need not be an ACS member. Nominations should include a biographical sketch, list of pertinent publications, evidence of professional growth and involvement, and letters of support from colleagues. Previous recipients of this award are:

1976	Turner Alfrey, Jr.	1988	A. Lee Smith
1977	Etcyl H. Blair	1989	Do Ik Lee
1978	David C. Young	1990	Joseph E. Dunbar
1979	Vernon A. Stenger	1991	Thomas H. Lane
1980	Daniel R. Stull	1992	Donald A. Tomalia
1981	Bob A. Howell	1993	Dale J. Meier
1982	Wendell L. Dilling	1994	Philip T. Delassus
1983	Donald R. Weyenberg	1995	Duane B. Priddy
1984	Edwin P. Plueddemann	1996	Hans G. Elias
1985	Raymond P. Boyer	1997	Ludo K. Frevel
1986	Stanley P. Klesney	1998	Patrick B. Smith
1987	Warren B. Crummett	1999	David E. Henton

The Midland Section sponsors an annual award to recognize outstanding service to the Midland Section of the ACS. The Outstanding Service to the American Chemical Society award recognizes achievement in the promotion of the goals of ACS. Nominees shall be members of the Midland Section. Nominations should include a biographical sketch, a history of service to the Midland Section, and supporting letters from fellow ACS members. Previous recipients of this award are:

1989	David C. Young	1995	Gretchen S. Kohl
1990	Linneaus C. Dorman	1996	Fran K. Voci
1991	Donald R. Petersen	1997	Thomas H. Lane
1992	Wendell L. Dilling	1998	Vicky S. Cobb
1993	Bob A. Howell	1999	Theodore E. Tabor
1994	Eldon L. Graham		

The Midland Section presents an annual Outstanding Chemical Technician Award to an individual who has demonstrated an extremely high de-

gree of professionalism as a chemical technician. The ACS defines a chemical technician as a person whose training includes successful completion of a two-year post-high school level chemistry curriculum leading to an associate degree, or the equivalent course work in a baccalaureate program, or the equivalent knowledge gained by experience. The primary work of a chemical technician is conducting experimentation and/or correlating information to help solve chemical problems and/or discover new chemical knowledge. Criteria used to judge the award include job skills, safety, teamwork, leadership, publications and presentations, reliability, communication skills, and additional professional and community activities. Nominees must have worked for five years as a chemical technician. Chemical technicians do not need to be a TECH Division Affiliate or ACS member to be eligible for this award. Nominations should include a biographical sketch and supporting letters that address each of the criteria above. Previous recipients of this award are:

1997	Connie J. Murphy	1999	Ronald L. Good
1998	David Stickle		

Nominations for all *three* awards are invited. The deadline for receipt of nominations and all supporting materials is September 15, 2000. Nominations should be sent to:

Philip J. Squatrito
Department of Chemistry
Central Michigan University
Mt. Pleasant MI 48859

Fax (517-774-3883) or electronic nominations are also welcome. If you have questions or need additional information, please contact me at 517-774-4407 or p.squatrito@cmich.edu. It is requested that nominators provide their address and phone number in case the committee needs to contact them. The Awards Committee encourages all section members to nominate deserving colleagues and appreciates your efforts in helping these individuals attain recognition for their efforts. We look forward to hearing from you!

Year 2001 Officer Candidates Announced

By Steve Keinath

Following is the current list of candidates for officers and directors for the Midland Section—ACS for 2001. Additional nominations will be accepted from the floor or by petition at the September 11, 2000, Midland Section ACS Board meeting. Nominees should have agreed to be a candidate and serve, if elected, before floor nominations or petitions are made.

Chair-Elect (One to be elected for a 1-year term)

- Pat Cannady
- Peter Qian

Secretary (One to be elected for a 1-year term)

- Jennifer Ehlert
- Estelle LeBeau

Treasurer (One to be elected for a 1-year term)

- Doug Beyer
- Tim Lueder

Chair, Nominations & Elections Committee (One to be elected for a 1-year term)

- Steve Keinath
- Fred Vance

Directors (Three to be elected for a 3-year term)

- Deb Bergstrom
- Pete Dreyfuss
- Dave Stickles
- Marvin Tegen

Additional candidates still being sought (at **MC** press deadline)

If you have additional officer candidate nominations in mind and cannot make it to the September 11th meeting, please contact Steve Keinath, Chair, Nominations & Elections Committee, at 517-832-5555, ext. 588, or via e-mail at skeinath@mmi.org. Biographical information for all of the candidates and the election ballot will be published in the October issue of *The Midland Chemist*.

Rubens Receives National Honors

By Ann Birch

It's no wonder L.C. "Bud" Rubens has the feeling he's getting a lot of attention lately—he is. On June 22, 2000, Bud was inducted into the Plastics Hall of Fame in Chicago. On August 20, he will be recognized by the



Bud Rubens holds a photograph of a foam chair he made for a girl with cerebral palsy.

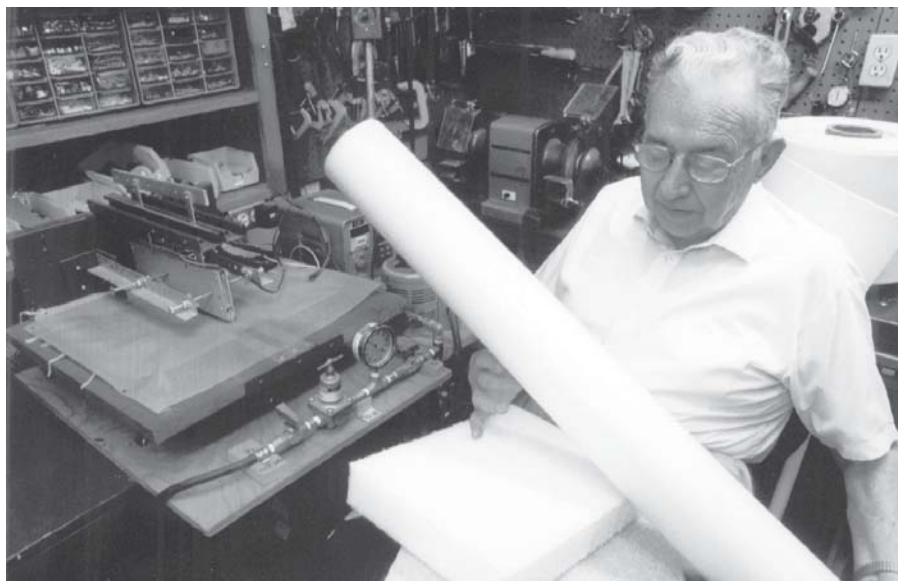
American Chemical Society as a "Hero of Chemistry" at a ceremony in Washington, D.C. And all this takes place sixty years after hitchhiking to Midland to find a job.

Raised in Escanaba, MI, Bud had been taking college classes for two years in Menominee when

the college closed, leaving him without a school, without a job, and with seemingly few prospects. Despite his lack of a college degree, Bud could not accept the fact that he wouldn't get a job. He hitchhiked to The Dow Chemical Company in Midland, and when he was not offered a job, he went looking for the company president. Willard Dow evidently liked what he saw because Bud started to work that afternoon in the Physics Laboratory. At that time the Physics Lab was one of the major industrial labs in the world, and the cutting-edge researchers in the lab became Bud's surrogate professors.

What followed was a prestigious career with 58 U.S. patents to his credit, 35 of them in foam technology and high-impact polystyrene. Throughout his career, Bud was known to many at The Dow Chemical Company as a gentle man, a kind mentor, but most of all a respected inventor and scientist. In the plastics industry he is generally known as the father of polymeric foams. Even in retirement, Bud is in demand as a consultant and advisor.

While at Dow, Bud helped develop polymers that ultimately became part of plastic materials. He learned how to laminate layers of materials together to make body armor that could protect against shrapnel or bullets. He remembers taking a submachine gun out to the Dow ponds and



Bud holds several pieces of foam he made for miscellaneous uses in the workshop at his residence.

shooting at panels of this new fiberglass armor.

Researchers already had learned how to create polystyrene. They made polystyrene foam starting with hard plastic granules, adding a hydrocarbon gas or liquid under pressure. When heated, this blowing agent caused the plastic to foam, creating an insulative material with voids inside.

Bud is particularly noted for introducing the mixed blowing agent concept for producing Styrofoam* brand plastic foam. He also invented Ethafoam* brand plastic foam and did the original work on Pelsapan* brand expandable polystyrene and Pelsapan PAC brand loose fill packing. Today, more than 5 billion pounds of foam products are made each year and used worldwide based on technology Bud developed.

Bud credits much of his early development to the opportunity he had of working with many Dow “greats”—people like Charles Strosacker, John Grebe, Ray Boyer, and Ray Boundy. “I was a sponge!” says Bud. “I absorbed all of the knowledge I could from the people I worked with. And they proved to be willing mentors to a neophyte.”

Bud has had numerous scientific papers published, but he is known by anyone working with polystyrene for his two chapters in the book *Styrene: Its Polymers, Copolymers, and Derivatives*, a joint publication of the American Chemical Society and John Wiley, Inc. (1952), which became a

*Trademark of The Dow Chemical Company

standard reference for the industry. In 1994 Bud won the Best Paper Award from the Society of Plastics Engineers (SPE).

Retired now for a number of years, Bud is still a dedicated researcher. He has a human anatomy program on his computer, and his interest in the body has prompted him to design aids for people with disabilities. He designed a 5.5-pound chair to help keep straight the limbs of a girl with cerebral palsy. When his wife suffered from obstructed breathing, he came up with a tube she could use to exercise and strengthen her thorax and diaphragm muscles and force air into and out of her lungs.

Bud's induction into the Plastics Hall of Fame was noted by the June 19 issue of *Plastics News*. Inductees to the Plastics Hall of Fame are judged to have made significant contributions to the success of plastic products or the plastics business and to the evolution of the industry to where it is today. Other Dow scientists in the Hall of Fame are Willard Dow, Bill Goggin, John Grebe, and Ray Boyer, all of whom were acquainted with or worked with Bud in his early career.

This year's ACS Heroes of Chemistry program honors chemical innovators whose industrial work in chemistry or chemical engineering has made significant and lasting contributions to global human welfare. Bud is being recognized for the development of blowing agent technology and modification of polymeric foam production.

What's ahead for Bud? He'll continue doing research in his basement workshop, acting as an expert witness and technical consultant for Dow, and serving as a mentor for anyone interested in technical innovation. He may be retired, but he's still a scientist!

Note: Portions of this article were adapted with permission from an article by Cheryl Wade in the Midland Daily News, April 29, 2000. MDN photos were taken by Bradly J. Boner. Bud has been a member of the American Chemical Society for almost 50 years.

Professional Scientific Society Day— Polymers, Plastics, and Sports

Ever wonder what role professional societies play in the world today? Drop by and find out! The Midland Section ACS, AICHE, SPE, and the Hall of Ideas will jointly sponsor "Professional Scientific Society Day—Polymers, Plastics, and Sports" at the Midland County Fair.

When: August 18, 2000, 4–8:00 p.m.

Where: Yellow building north of stadium entrance at the Midland County Fairgrounds

Exhibitions and demonstrations will show some of the activities in which local professional societies are involved and also give visitors a chance to have some science fun!

Midland Section Members Celebrate 50 Years with ACS

By Chitra Subramaniam

In the June 2000 issue of *The Midland Chemist*, we highlighted all of the people who received awards at the Spring Recognition Dinner. Over the next couple of issues, we will especially recognize those members who have been with ACS for 50 years, representing a long history of dedication to science. Congratulations!



Lawrence H. Brown received a B.S. degree from Augustana College in Illinois in 1948 and an M.S. degree in organic chemistry from the University of Illinois in 1951. He worked with Dow Corning Corporation in Midland, MI, for over 30 years, on a broad range of topics including silicone-modified organic, electrical and architectural coatings, organofunctional polysiloxanes, and silicone coating intermediates. He has ten U.S./foreign patents to his

credit and is an author on a chapter on silicone resins for *Treatise on Coatings*. He was also a consultant on regulatory compliance for Dow Corning Corp. from 1985 to 1995. He is currently retired and lives in Midland, MI.

Gerald Clark worked with The Dow Chemical Company for 32 years, until his retirement in 1982. While at Dow, he worked in analytical chemistry, manufacturing management, and research management. Following his retirement from Dow, he has had an active career. He served as the manager of engineering at Quantum Composites (1982–86), as the vice-president of Manteq International (1986–91) and as the vice-president of Omnitech International (1991–94). He was the former president of Professional Employers, and is currently serving as the president of Midland Engineering Ltd. He presently lives in Sanford, MI, with his wife, Cheryl.



James Leddy received a B.S. degree in chemical engineering from the University of Detroit in 1951 and a Ph.D. in inorganic chemistry from the University of Wisconsin in 1955. He had a long and rewarding career with The Dow Chemical Company from 1955 to 1995. While at Dow, he worked in research and development

and manufacturing. He is currently retired and lives in Midland, MI.

Eli Lilly Sponsors Travel Awards for Women Chemists

By Ann Birch

Eli Lilly and Company is sponsoring a program to provide funding for undergraduate, graduate, and postdoctoral women chemists to travel to scientific meetings in 2001 to present the results of their research. Awards will be granted to women presenting research for the first time at a national or major meeting. Grants may be applied only for registration, travel, and accommodations, and are restricted to travel to meetings within the United States.

Grant funds are limited, but there are some funds set aside for undergraduates. Only U.S. citizens and permanent residents are eligible. Applications should be limited to one per research group. Women who have received a prior award under this program are not eligible.

The deadline dates for receipt of applications for 2001 meetings are as follows:

Sept. 15, 2000—Meetings between January 1 and June 30, 2001

Feb. 15, 2001—Meetings between July 1 and December 31, 2001

For more information and an application form, please contact your department chair or

<http://membership.acs.org/W/WCC/>

or Cheryl Brown, 800-227-5558, ext. 6022

c_brown@acs.org

American Chemical Society

1155 Sixteenth St. NW; Washington, DC 20036

New Midland Section Members!

By Connie Murphy

Welcome to the following people who have either recently joined the American Chemical Society or transferred to the Midland Section:

- Sudhakar Balijepalli
- Denise Beachy
- Aneta I. Bialek
- Yumin Cui
- Heather S. Harris
- Keith Harris
- David Kepler
- Ginam Kim
- Keith A. Korthals
- Robert L. Labrie
- John S. Pratt
- Todd J. Rivard
- Sonke Svenson
- Pam Thompson
- W. E. Walles
- Bruce E. Wilson

Important Dates on the ACS Midland Section Calendar

- August 7 Midland Section board meeting, Delta College, University Center, Room D135, 7:00 p.m.
- August 8 Deadline for September issue of *The Midland Chemist*
- August 15, 17 ACS MMTG County Fair Chemistry Show, Midland County Fair (Brian Murdoch, 517-631-4619, bmurdoch@dow.com)
- August 18 Professional Scientific Society Day, Midland County Fair (Gretchen Kohl, 517-496-8200, gretchen.kohl@dowcorning.com, or Karol Childs, 517-631-5931, ext. 1215, childs@mcfta.org)
- August 20-24 National ACS Meeting, Washington, DC (<http://www.acs.org>)
- September 1 Deadline for abstracts for papers for the 2000 Fall Scientific Meeting (Dean M. Millar, 517-636-8496, dmmillar@dow.com)
- September 6 Deadline for October issue of *The Midland Chemist*
- September 11 Midland Section board meeting, Delta College Midland Center, Room 12, 7:00 p.m.
- September 15 Deadline for Section award nominations (Philip Squatrito, 517-774-4407, p.squatrito@cmich.edu)

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