

THE OCTAGON



Volume 86, No. 1, January 2003

Lehigh Valley Section of the American Chemical Society

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761st LVACS Meeting:

Date: Wednesday, January 22, 2003

Location: Muhlenberg College

Reception: 5:30pm, Hoffman House, N 23rd Street

Dinner: 6:00pm, Hoffman House, N 23rd Street

Business: 7:15pm Trumbower 130 lecture hall

Meeting: 7:30pm Trumbower 130 lecture hall

Menu: Chicken breast stuffed with Feta cheese, spinach and pine nuts, or Balsamic Flank steak, or Vegetarian.

Cost: \$20.00, students \$10

Contact: Please call LuAnn Feist at 484-664-3260 or email feist@muhlenberg.edu by noon Jan 17th. Please give you name, affiliation, choice of entrée and phone number

Directions: Hoffman House is ½ block from the intersection of Chew and N. 23rd streets. Trumbower hall is centrally located on campus facing Chew street next to Haas College Center. Please see:

www.muhlenberg.edu/muhinfo/directions.html

Speaker: David J. Weber, Ph.D.

David J. Weber earned his B.S. in Chemistry at Muhlenberg College and his Ph.D. at the University of North Carolina. He was a Post Doctoral Fellow at The Johns Hopkins University School of Medicine. Currently he is an Associate Professor in the department of Biochemistry and Molecular Biology at the University of Maryland School of Medicine in Baltimore MD. The general focus of his research is to study how metal ions (such as calcium) regulate important proteins and enzymes in the brain.

Talk: "Important Biochemical Advances in the Understanding of Cancer: the interaction of S100B with the tumor suppressor protein p53."

Abstract: One project in our laboratory involves studies of the structure and function of S100B, a glial-derived protein from the brain. S100B is a dimeric Ca²⁺-binding protein that

is overproduced during gliosis in patients with Alzheimer disease, Down syndrome, and Aids related dementia. In addition, S100B and/or other members of the S100 protein family (S100a, S100L, etc.) are found at high concentrations in several tumor cell lines including lung, bladder, kidney, cervix, breast, head and neck, larynx, lymph, and mouth. Thus, overproduction of S100 proteins may cause problems in the regulation of cell growth in these diseases. Presumably, the function of S100B is related to its ability to bind a variety of target proteins in a Ca²⁺-dependent manner. One such target is the tumor suppressor protein, p53. For this protein, we have shown that upregulation of S100B abrogates p53 transcription activation in tumor cell lines and that S100B binds and inhibits both the protein kinase C-dependent phosphorylation and the oligomerization of p53 in vitro. Therefore, the focus of our laboratory is to determine, at atomic resolution, the mechanism by which S100B can affect p53 transcription activation and promote uncontrolled cell growth. In this regard, we have determined the three-dimensional structure of apo-S100B, S100B-Ca²⁺, a S100B-Ca²⁺-p53 peptide complex using NMR spectroscopy. The structural studies of S100B are imperative for the efficient design of biochemistry and molecular biology experiments that are also completed in our laboratory. Knowledge about the structure and function of S100B is also used to design molecules that inhibit S100B from binding to p53. Perhaps one of these molecules will be practical as a drug for regulating uncontrolled cell growth in vivo. Similarly, structure/function studies are underway for two other members of the S100 protein family, S100a and S100L as well as for other proteins that bind the C-terminus of p53 including a hepatitis B viral protein (HBP) and the high mobility group protein-1.

LVACS Officers:

Chair: Paul Bouis
Mallinckrodt Baker Inc., Phillipsburg, NJ 08865
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Chair Elect: Steve Weiner
Chemistry Department, Muhlenberg College
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sweiner@muhlenberg.edu 484-664-3665

Immediate Past Chair: Joe Sherma
Lafayette College, Easton, PA 18042
shermaj@mail.lafayette.edu 610-330-5220

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tara_baney@merck.com 484-344-3346

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jcf2@fast.net 610-923-358

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East Stroudsburg, PA 18301
mjwilson@po-box.esu.edu 570-422-3446

2003 Meeting Schedule:

(Please *pencil* these dates on your calendar)

January 22, Muhlenberg College
February 20, Lafayette College
March 14, DeSales University
April 15 or 16, Moravian College
May (TBA)

Editors Message:

You may have noticed the call for email subscribers in this fall's issues of the Octagon and on the cover of this issue. I would like to make a plea to all of our members with web access to consider subscribing via email. I have enjoyed editing the Octagon and I hope you have enjoyed the expanded coverage. With the change in editor, we have also changed our mailing from bulk rate (2-4 week delivery) to first class (3-5 day delivery). Along with tighter deadlines, this has insured that all members receive their issues in time to plan for section meetings. However, the effect of these changes has been to increase the cost of the publication considerably. I have taken advantage of alternate printing sources and the per page cost of the Octagon has actually decreased. But an 8-10 page newsletter is significantly more expensive to publish and mail than a 2-4 page newsletter. Combined with the increase in postal rates last summer this has meant an increase in Octagon costs. This increase is especially difficult when other costs are increasing. Each issue of the Octagon costs about \$1200 to produce and mail. With eight issues per year, the Octagon will take about \$9600 of our budget this year. Our voluntary section dues collected by National is \$3.00 per member. So your section due pays for about two of the eight issues per year.

Our executive council met in November and the publication costs were featured on the agenda. We decided to maintain the first class mailing and to keep the expanded coverage. We decided to ask that members who are able to subscribe via email. We currently have about 180 email subscribers and these members are saving us almost \$200 per issue. If another 200 members would join the list, we could offset the increased publication and mailing costs. In addition, savings could be translated into increased activities and scholarships funded by the section.

In addition to the considerable benefit to the section, email members receive the Octagon about 7-10 days before the postal subscribers. They are also able to view the Octagon in full color with all www links active. A simple click will provide email addresses, minutes, meeting details and directions. The Octagon is provided as a pdf file and can be easily printed. Your email-printed version is identical to the mailed version. Please consider this option!

To subscribe via email send me a message at:
mjwilson@po-box.esu.edu subject line: Email Octagon

November Meeting Minutes:

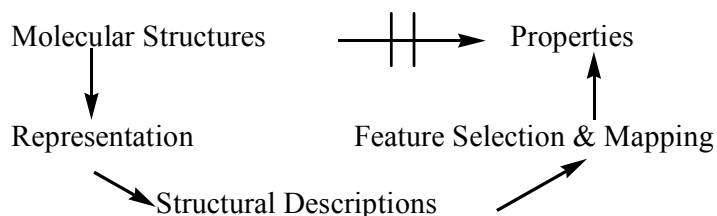
The 760th meeting of the LVACS was called to order by Chair Dr. Joe Sherma at 7:31 PM on Tuesday, November 19, 2002. Lehigh University hosted the meeting on their campus. The items discussed prior to the lecture are as follows: Dr. Sherma expressed his gratitude to everyone, as this was his last meeting of the year as Chair. He especially thanked Dr. Paul Bouis on his counsel and support in the transition. Dr. Sherma also welcomed the many students in attendance. The October 2002 minutes were approved. Next, the Question of the month was answered: "What is dephlogisticated air?" The answer is oxygen, O₂.

John Freeman presented the Treasurer's Report. We have \$2,092.88 in checking, \$1550.42 in the Scholarship Fund, and \$31,572.75 in our Merrill Lynch account. Dr. Sherma announced the three main topics discussed at the Executive Committee meeting, held just prior to the main meeting. These were: 1. The annual report will be compiled and submitted on time, 2. The by-laws are still in revision and will be discussed in further detail at the next Executive Committee meeting, and 3. A new scholarship, in addition to the Foundation in Chemistry Award, was approved. This scholarship will be awarded to a rising junior, and will be in the amount of \$1500. Further details on moneys and criteria will be published in a later Octagon. Dr. Sherma reminded everyone to please request the Octagon to be sent via email rather than traditional mail. The decrease in cost will be significant. Next, it was announced three members of the LVACS reached their 50th year as members of the American Chemical Society, Dr. Donald Smith, Thomas Izer, and Charles Sterner. Dr. Smith was in attendance, and accepted his certificate in person. Dr. Smith said a few words of his history in chemistry, and has enjoyed his experiences in the materials chemistry industry

Next, Dr. Sherma reported the October election results, with Steve Weiner as new Chair-Elect, Tara Baney as Secretary, John Freeman as Treasurer, and Pam Kistler and Michelle Jones-Wilson as Councilors. Dr. Weiner graciously said a few words, expressing his gratitude and noting the challenges he welcomes as Chair-Elect. Dr. Sherma then thanked Dr. Zeroka and colleagues for hosting the meeting.

Dr. Daniel Zeroka introduced our speaker for the evening, Dr. Peter C. Jurs, PhD (pcj@psu.edu). The title of Dr. Jurs' talk was "Prediction of Chemical and Biological Properties of Organic Compounds from Molecular Structure." Dr. Jurs began by telling the audience the advent of our current computer power enable researchers to perform such tasks, as his presentation title states. This technology assists in predicting the chemical, physical, and biological properties of molecular entities. This is used extensively in pharmaceutical research for activity as well as toxicity. As he states in his abstract, "Relationships between the molecular structures of organic compounds and their chemical or biological properties can be investigated using quantitative structure activity relationship (QSAR) methods." The audience was shown a schematic of the process:

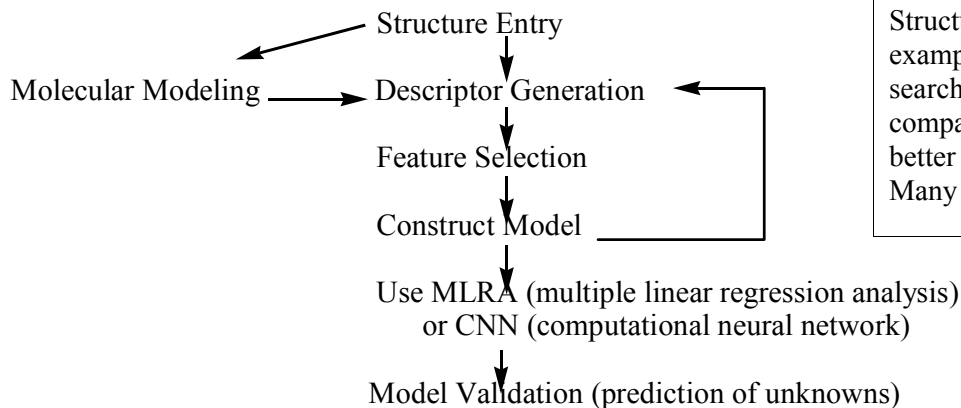
Why do we need this type of analysis? Dr. Jurs describes a triangular relationship where the experimental data is the apex;



QSAR utilizes building and mathematical models, and the process is inductive. Outcome depends upon a set of several hundred compounds and filtering using specific criteria and rules. Commercial

this is the representation of the truth. At each base we find the feature descriptions and model building, which are the tools researchers need to efficiently generate molecules for experimentation. To bring this to a better level of understanding, Dr. Jurs explained, in Drug Metabolism and Medicinal Chemistry Departments of many companies and academic institutions, only 10% of compounds become viable for testing, and many subsequent failures may occur during this testing. Secondary properties such as toxicity (recall ADME analysis (absorption, distribution, metabolism, & excretion)) and water-solubility account for many of the criteria in which these compounds fail. In addition, computational chemistry adds to the number of viable compounds, and one needs proceed efficiently to the secondary testing schemes to keep up with the number of compounds generated through such methods.

Dr. Jurs showed the audience another schematic, explaining the process of predicting chemical and biological properties from a set of molecular structures:



Structure entry & molecular modeling examples are achieved through literature searches and collaboration with drug companies. The larger the data set, the better (100-500 compounds optimal). Many commercial software systems are

The most difficult parameter to analysis and decipher are the descriptor generation components of the above schematic. The main properties within this general category are electronic, topological, and geometric. Dr. Jurs delved into a detailed explanation of each, and noted that topological is the preferred property to assist in defining a compound. When electronic and geometric properties are combined, more information can be deduced, such as: 1. CPSA (charge partial surface area), 2. SASA (solvent accessible surface area), 3. PNSA (polar negative surface area), 4. FPSA (fractional partial surface area), etc. While these can be useful, the task can be daunting to sort through all the information. The various software systems can sort these data and computes 25 variations to get a very detailed picture of the "ideal." The overall goal is to identify the best subset of descriptors; this is the feature selection portion of the schematic. This method of identifying Dr. Jurs admits is subjective, but it is extremely efficient, and relatively accurate and useful.

Once the features are selected, the model is constructed using either MLRA or CNN. MLRA is straightforward and fast; however, once the relationship becomes nonlinear, the MLRA method becomes less accurate. CNN is more useful for nonlinear sets, but can get rather expensive. Dr. Jurs showed an additional schematic of the three main types of models currently in use, and the linear capabilities:

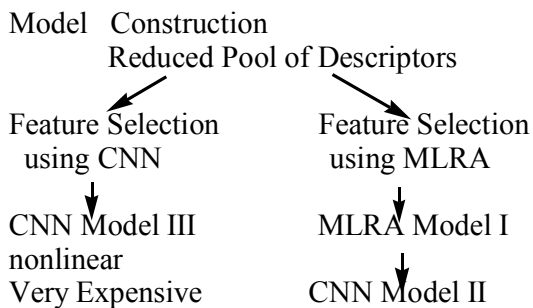


Table showing linear capabilities

Model Type	Feature Selection	Model
I	Linear	Linear
II	Linear	Nonlinear
III	Linear	Nonlinear

Next, Dr. Jurs went into great detail of applications and examples of the three models, ranging from water-solubility properties to Tetrahymena toxicity to genotoxicity. Many of the sets started with approximately 300 compounds, and as the filtering/selection progressed, 7-9 descriptors generated approximately 30 compounds in a concentrated set. These sets can then be graphed (observed versus calculated), using either MLRA or CNN, and a best-fit line is shown for reference. The audience was shown examples of the descriptors, how they are applied, and potential pitfalls of the process. In addition, Dr. Jurs explained how degrees of structural similarity and atom-pairs play a crucial role in this progression of prediction.

In summary, Dr. Jurs reiterated the creative process this type of analysis requires, and noted that QSAR methods have become more advanced and sophisticated with the use of these computerized models. After his talk, Dr. Jurs answered many questions, and was presented with gifts to express the section's appreciation. The meeting was adjourned at 8:58 PM.

Respectfully Submitted,

Tara S. Baney Secretary, LVACS, 11-December-2002

This Month in the History of Chemistry:¹

January 1: Harold Urey and co-workers announced discovery of deuterium, an isotope of hydrogen (H, element 1), 1932.

January 2: U.S. Atomic Energy Commission took over nuclear oversight from wartime Manhattan Engineer District, 1947.

January 3: Henry Bradley, Binghamton, NY, patents oleomargarine (U.S. Patent No. 110,626) in 1871.

January 4: Herbert Henry Dow, founder of Dow Chemical, prepared bromine from brine, 1891.

January 8: John A. Veatch found borax in mineral water at Tuscan Springs, CA, 1856.

January 13: Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction signed in Paris by 130 nations, 1993.

January 15: Henry Cavendish reported quantitative composition of water to Royal Society, 1784.

January 16: Fermium (Fm, element 100) was first isolated by Louise Smith, Sherman Fried, Gary Higgins, Albert Ghiorso, Rod Spence, Glenn Seaborg, Paul Fields and John Huizenga (using ion-exchange chromatography) and identified, 1953, at University of California, Berkeley.

January 21: Dow Chemical produced the first ingot of any metal to be extracted from seawater (magnesium; Mg, element 12), 1941.

January 22: King James I charters the first English organization of pharmacists ("Master, Wardens and Society of the Art and Mystery of the Apothecaries of the City of London"), 1617.

January 23: The nomination of Marie Curie to the French Academy of Sciences is rejected, 1911. [Note: more recently, women have fared better: Marianne Grunberg-Manago, was elected president of the Academy in 1994.]

January 24: B.B. Cunningham and coworkers first reported absorption spectrum of einsteinium compound (Es, element 99) at University of California, Berkeley, 1966.

Gold discovered at Sutter's Mill, California, 1848, causing '49er gold rush.

January 25: Martin Klaproth reported to Berlin Academy of Sciences in 1798 the 1782 discovery by Franz Joseph Müller von Reichenstein of a new element and named it tellurium (Te, element 52).

January 26: Niels Bohr reported the discovery of nuclear fission by Otto Hahn and Fritz Strassman, and its interpretation by Lise Meitner and Otto Frisch, to the Fifth Washington Conference on Theoretical Physics, 1939.

¹Thanks to Carmen Giunta, for his Classic Chemistry website <http://webserver.lemoyne.edu/faculty/giunta/>

2003 Regional Meetings Announced

Good Chemistry Continues at ACS Regional Meetings!

ACS Regional Meetings bring chemists together in an intimate setting to.....

*Bring outstanding technical programming to local audiences through symposia, professional development workshops, and poster sessions

*Present programs for graduate and undergraduate students

*Recognize outstanding achievements by chemists in the local area through presentation of industrial and academic awards

*Provide opportunities for networking and meeting colleagues from your area as well as ACS governance and staff

*Sponsor programs for high school teachers and students

*Help you to reap more benefits from your ACS membership

Plan to participate in 2003! Abstract submission for the spring meetings will open in late January and for the fall meetings in early June. Watch your C&EN issues for more details or visit the websites at chemistry.org/meetings/regional/calendar.html for more information on the following:

35th Great Lakes Regional Meeting - May 31 - June 2

Loyola University of Chicago

36th Middle Atlantic Regional Meeting - June 8-11

Princeton University

58th Northwest Regional Meeting - June 12-14

Montana State University Bozeman, MT

32th Northeast Regional Meeting - June 15-18

Sheraton Saratoga Springs, New York

39th Western Regional Meeting - Oct. 15-18

35th Central Regional Meeting - Oct. 19-22

Sheraton Station Square, Pittsburgh

59th Southwest Regional Meeting - Oct. 25-28

Westin Oklahoma City

38th Midwest Regional Meeting - Nov. 5-7

University of Missouri, Columbia

55th Southeast Regional Meeting - November 20-22

Renaissance Hotel Atlanta, Georgia

Hilton Long Beach

Question of the Month

Who coined the term protein?

Come to the January Meeting for the Answer

A Message from the Chair-Elect

(Submitted by Steven W. Weiner)

It is an honor, a privilege, and a challenge for me to serve as chair-elect of the Lehigh Valley Section of the American Chemical Society. As a second year faculty member at Muhlenberg College, I have had the opportunity to participate in and observe the activities of this section, and am enthusiastic about serving as chair of an active and user-friendly organization. The local section of the ACS should serve our diverse community of chemists from academia to industry including everyone from undergraduates to our more experienced professionals. To keep this section of the ACS active and vital, I would like to see programming that would appeal to the undergraduate chemistry majors so that our section meetings are a fruitful balance of fellowship, networking, and chemistry learning. Streamlining of communication within the section is important so that all our members are informed about programming in a timely fashion. This is beginning to happen through the use of email and a website. We can continue to build this network by keeping members informed of related professional meetings, opportunities for fellowships and scholarships for graduate study in chemistry, and local career and internship opportunities for those on the job market. I also would encourage this section to provide moral and financial support for official ACS student affiliates chapters at participating institutions. As chair elect, I have been asked to work out the details for administering a new scholarship to provide support to an outstanding chemistry major during his/her undergraduate career.

As chair-elect, I welcome your input and support as to making the Lehigh Valley Section of the American Chemical Society work for you.

New LVACS Scholarship Created to Recognize Outstanding Organic Chemistry Students

(Submitted by John Freeman)

At the November executive meeting we created an opportunity for the section to encourage the study of chemistry in the Lehigh Valley. The scholarship recognizes an outstanding organic chemistry student continuing their study at a Lehigh Valley college or university. The award is based upon the student's performance on the ACS organic chemistry exam. Additionally the student contributes an essay on organic chemistry and his/her performance in quantitative analysis or its local equivalent.

This scholarship joins The Foundation in Chemistry Scholarship that our section sponsors. This scholarship honors a high-school senior in the section matriculating to an institution of higher learning in the section.

Both scholarships are supported through the general fund of the section and donations to the Lehigh Valley Foundation in Chemistry Scholarship Fund. The Scholarships are part of an ongoing effort by our section to promote the study and appreciation of chemistry in the Lehigh Valley. Details for application will be published this spring. Donations to the Scholarship Fund may be mailed or given directly to the Treasurer or other officer of our Section. The Treasurer is currently John Freeman at 522 Raub St Easton PA 18042.

News from National ACS

MentorNet: The E-Mentoring Network for Women

(From Women Chemists Fall 2002 Newsletter)

MentorNet, established in 1997, is a Presidential Award-winning e-mentoring network for women in engineering and science. This one-on-one mentoring program matches community college, undergraduate and graduate women with engineers and scientists working in industry, national laboratories and government. Since its inception, MentorNet has paired more than 6,500 students with mentors all over the world. As an e-mentor, you can make a difference in a student's life with a relatively small time commitment. Go to www.MentorNet.net for more information, and become an online mentor today.

ACS History Book Published

The American Chemical Society at 125: A Recent History 1976-2001, was published in August 2002 as an addendum to the centennial history of 1976. The book was distributed at no cost to members of the ACS Council, chairs of local sections and divisions, and other interested members. A substantial portion of the book will be posted on the ACS Web site chemistry.org, where it is hoped the site will eventually become an expanded repository for the histories of local sections and other ACS bodies.

Featuring the work of 45 member and staff contributors, the publication brings to completion the observance of the ACS 125th anniversary. To request a free copy of the book, contact the ACS Office of Society Services, 1-800-227-5558. For more information, please contact Frank Walworth in the ACS Secretary's Office, (202) 872-6070; e-mail f_walworth@acs.org

Popular Career Management Texts to be Revised

Four of ACS Department of Career Services most popular career-development publications are being updated and due to be reissued early in 2003. These publications can provide invaluable job seekers or mature chemists with vital resources on preparing for an interview, resume-writing skills, finding the hidden job market or on making adjustments to the cultural differences in the United States.

Each of these four free publications can be downloaded from the DCS website <http://chemistry.org/careers> They are: The Interview Handbook - Discusses the various techniques and skills needed for a successful interview. Tips on Resume Preparation - Discusses the most successful types of resumes and offers samples of each. Employment Guide for Foreign-Born Chemists in the United States - Provides information on immigration requirements, job searching, evaluating foreign credentials, skills and experience, culture of the workplace, and how to adapt to a new domicile. Targeting the Job Market - This publication focuses on the components of targeting the job market: personal assessment, identifying market trends, credentials, conducting research, and network.

Chemagination Coordinators Needed

Chemagination is a science essay and poster contest for 9-12 grade chemistry students that had its beginnings three years ago as part of the "Chemistry in the 21st Century" campaign of Dr. Daryle Busch. It was designed with the National Science Teaching Standards in mind and has successfully been used as an alternative to science fair projects and as an in- or out-of-class assignment by participating teachers. The contest has been run for the past three years at select regional and national meetings of the Society. Students and teachers who participated were always eager to participate in future contests, and this has not always been feasible. In order to increase the scope and reach of the contest, it was offered as a possibility to local sections, and was successfully piloted in the Western Michigan and Louisiana Sections.

ACS is now launching this wonderful program nationwide as an outreach tool to high school students and their teachers. In the contest, students are asked to write an article that could appear in the October 2025 edition of ChemMatters magazine and to design the cover of that issue. The article describes an innovation or breakthrough in chemistry that is important in the lives of teenagers in the year 2025. Students are encouraged to base their ideas in sound chemistry and go with their creativity from there. They are also encouraged to provide a history of the changes that took place in the years between today and 2025 that allowed this innovation to develop. Students choose from one of four categories to focus their article: biotechnology, medicine/healthcare, new materials, and transportation/environment.

Each ACS local section is encouraged to participate and to find a Chemagination Coordinator for the contest. Each coordinator will select the date for the section's contest, but they will be encouraged to hold the contests between February and April. Sections will be asked to sponsor their finalists' participation at the geographically closest regional meeting offering a contest, and regions will be asked to send their finalists to a national competition next December in Washington, DC. To find out more about Chemagination, visit chemistry.org/oca. If you are interested in becoming the local section Chemagination Coordinator, please contact the Section Chair or call 800-227-5558 ext. 4458.

American Chemical Society Scholars Program now accepting applications for the 2003-2004 academic year.

Awards are valued at up to \$3,000.00 for the academic year. The deadline to receive applications is February 15, 2003. For application forms and more information go to our web site - <http://chemistry.org/scholars>, or contact the Scholars Program office at:

American Chemical Society Scholars Program
1155 16th Street, N.W. Washington, D.C. 20036
1-800-227-5558, ext. 6250 scholars@acs.org

Regional Industrial Innovation Awards Program Honoring Successful Innovations From the Chemical Enterprise

Because the innovations of industry are essential to a healthy economy, the American Chemical Society's (ACS's) Industry Member Programs has instituted the Regional Industrial Innovation Awards Program. This regional awards program was launched at the 1998 Southeast Regional Meeting to recognize individuals and teams for their creative innovations that have resulted in a commercial product or process. This awards program also highlights the outstanding contributions that the profession of chemistry has given to society, as well as the corporate leadership that encouraged the dissemination of knowledge that is facilitated in these innovations.

The benefits of this program are twofold. First, honorees gain the well-earned recognition of their peers and co-workers. They can also take pride in being acknowledged by the chemical profession. Second, each honoree's company has an opportunity to enhance its public image and participate in a new professional recognition program that will undoubtedly develop lasting goodwill in the community and higher employee morale within the company. Furthermore, the program consists of a networking opportunity bringing together ACS staff, ACS governance, honorees' chief executive officers, honorees' chief technical officers, honorees' company staff, and area students.

For 2002, Industry Member Programs administered the program during seven 2002 Regional Meetings. We were pleased to honor a total of 42 chemists from such companies as E.I. du Pont de Nemours & Co., Reheis, Inc., Exxon Mobil Research and Engineering Co., Abbott Laboratories, Cargill, Inc., Western Research Institute, Ford Motor Co., General Motors Research & Development Center, Pennzoil-Quaker State Co., ABB Inc., and Eastman Chemical Co. These professionals' chemical advances serve as a testimony to the valuable role chemists and chemical engineers play in improving our lives. At this time, we invite you to nominate one or more candidates for the 2003 Regional Industrial Innovation Awards cycle and join us in recognizing outstanding professional chemists from the chemical and allied industries. We are proud to announce that we will be hosting the program during all nine 2003 Regional Meetings. The recipient(s) of this award will be honored during their respective regional meeting with an ACS certificate. In addition, recipients will be invited to present a 20-minute talk on their innovation at a special awards symposium with tabletop displays showcasing their work. Deadlines begin in January 2003; however, placing a nomination is easy. Their company and peers in recognition of their creativity and contributions to global welfare nominate honorees. Nominees must be chemists or chemical engineers who are ACS members and who reside in the ACS regional meeting territories. For team nominations, only one member needs to be an ACS member. Those who are not ACS member but are employed by an ACS Corporation Associates member company also qualify for nomination.

For additional information, please visit: www.chemistry.org/industry/regionalawards, or contact Ms. Vanessa Johnson-Evans at 202-872-4373, 1-800-227-5558, ext. 4373, or cheminnovations@acs.org.