Chemistry Club Activities

The Chemistry Club has been very active this past year. Activities included a Science Fair at Pinckney High School, Saturday Morning at the Lab, and running demonstrations at the Hands on Museum in Ann Arbor for Chemistry Week. They plan to continue the Boy Scout Merit Badge Program, and are working on tours of Dow Chemical, the Wayne County Medical Examiner Laboratories, Pfizer, and the Wayne State Toxicology Laboratories. They plan a yearly picnic that is well attended; this year it is anticipated early in the Spring. Chemistry Club Officers include Mike Pratt (President), Renae Beebe (Vice President), Carre Zalma (Treasurer), Abe Hijaze and Kerre Collison (Co-Secretaries), and Andy Jones as the Webmaster. You can view the website at http://www.emich.edu/public/chemistry/chmhome.htm

Faculty members Vance Kennedy, Steve Pernecky, and Jose Vites are advisors and mentors, pictured from left to right (back row). The students pictured from left to right include Renae Beebe, Rebecca Himm, Mike Pratt, and Kerri Collison. Other Chemistry Club members include Ryan Addington, Virginia Burkel, Kiara Donahoo, Rochelle Ferret, Michael Hyde, Chinenye Iwuchukwu, Andy Jones, Joel Karczenski, Susan Lesko, Janice Lima, Jacinda Lisi, and Nicole Trease.

Undergraduate Honors Fellowships

Six honors students were awarded chemistry undergraduate research fellowships for Winter 2001. The students were awarded a $1,200 stipend as well as funding for research supplies by EMU’s Honors Program. The students’ names, with their mentor’s name in parentheses, are: Oluwaseun Adetayo, Patrizia Iannone, and Chinenye Iwuchukwu (Elizabeth Butch), Hrant Hratchian (Maria Milletti), Jennifer Kappler and Rebecca Himm (Debbie Heyl-Clegg), Andrew Jones (Vance Kennedy), and Nicole Trease (Heather Holmes).
On A Very Sad Note

Provost Collins Passes Away

On Thursday, February 1, Provost and Vice President for Academic Affairs Dr. Ronald Collins passed away after suffering a heart attack. He was 64 years old, and was planning to retire in July of this year. Collins began his 35 years at EMU as an assistant professor of chemistry in 1965. He served as the head of the department prior to moving into the office of the Provost, where he has led academic affairs for the past 18 years. He was well liked and respected by students and faculty. Dr. Collins is survived by daughters Debbie and Sharon. His wife of 39 years, Gerrie, passed away in 1999.

John Sullivan Passes Away

At the age of 68, Dr. John Sullivan passed away on December 18, 2000. He had taught organic chemistry at EMU since 1958, and his love for it was evident to all who knew him. In addition to teaching, he also served as the advisor to pre-dental students, hosted visiting groups of high school students in laboratory activities, and remained active in research in synthetic organic chemistry. He was an integral part of the department, providing a smile, friendship and words of encouragement to the many faculty who were hired during more than four decades of his service. He will be missed by all. Dr. Sullivan is survived by his wife, Bernice, and their nine children.

AWARDS AND HONORS

Each year the Department of Chemistry recognizes outstanding students with awards and scholarships. The following is a listing of current awards and award winners from the year 2000.

CRC Press Freshman Chemistry Achievement Award
Libby Blaney

Perry S. Brundage Scholarship
Libby Blaney, Nicola Harrison-Lowe, and Barbara Webb

Sandra J. Lobbestael Scholarship
Ligor Manushi

ACS Organic Chemistry Achievement Award
Jennifer Kappler

Collins' Endowed Scholarship in Chemistry
Hrant Hratchian

Maurice Decoster Chemistry Scholarship
Lynne Kalmbach and Tomiyo Wemert

Biochemistry Achievement Award
Tomiyo Wemert

Toxicology Achievement Award
Noelle Ochotny

ACS Division of Analytical Chemistry Award
Lynne Kalmbach
Wiley Inorganic Chemistry Award  
Jason Sonnenberg

John J. Contario Analytical Chemistry Award  
Thomas Horvath

American Institute of Chemists Award  
Michael Nivala

Bert W. Peet Award  
Thomas Horvath

EMU Chemistry Department Service Award  
Robert Trotter

ACS Huron Valley Section Undergraduate Award  
Kevin Anderson

EMU Chemistry Teaching Assistant Award  
Eko Sugandhi

EMU Chemistry Research Award  
Neeraja Gunupudi

ACS Huron Valley Outstanding Graduate Student  
Udeni Yapa

Pictured at left are undergraduate Carre Zalma (Treasurer of the Chemistry Club) and graduate students Lakshman Caldera and Karthik Venkatachalam in Dr. Heather Holmes’ lab. Carre and Lakshman are collaborating on a project involving mathematical modeling of gas compression effects in chromatography. Karthik is working on the development of instrumentation for bioanalytical monitoring.

Confused? Need some direction? See an advisor in the chemistry department!
This fall, the chemistry department again hosted its very successful Saturday Morning at the Lab in the lobby of the Mark Jefferson Science Building. The activities were combined with EMU Family Day. Approximately 550 guests and helpers learned some fun chemistry and had an opportunity to participate in seventeen hands-on activities including: Red Cabbage Juice as an Acid-Base Indicator, How to Make a Colorful Butterfly through Paper Chromatography, Liquid Nitrogen Ice Cream, and the ever popular Get Slimed.

This program was a success due to the efforts of the many volunteers including helpers from Lincoln and Willow Run High Schools, the Maple Homeschool Cooperative (Farmington Hills), Pfizer, the EMU Chemistry Club and students, EMU chemistry faculty and EMU Biology faculty. Dr. Peggy Liggitt (Biology) made a guest appearance to run an activity related to her research. Special thanks go to Joe Mason and his stockroom staff and Donald Phillips, who coordinated the event. Additional thanks go to Laura Greenfield (Pfizer), who coordinated the efforts of the ACS Huron Valley Section for National Chemistry Week. Due in part to the success of the Saturday Morning at the Lab program, she was able to obtain a sizeable grant from Pfizer for the local ACS section to use for outreach programs! To view pictures of Saturday Morning at the Lab, log into our chemistry department web page.

Pictured at right are undergraduate students Nicole Trease and Shaun Beier. Both students will be representing EMU at the ACS National Meeting in April, 2001. Shaun does research with Dr. Maria Milletti, and Nicole works with Dr. Heather Holmes.
**Grants**

**Heather Holmes and Steve Pernecky** were awarded an instrumentation grant from the National Science Foundation for a project titled ‘Novel Instrumentation for Direct On-Line Monitoring of Biological Samples in Near Real-Time High-Speed Gas Chromatography.

**Steve Pernecky** received funding through the Graduate School Research Support Fund ($2,000) to investigate the expression of cytochrome P450 in cells.

**Don Snyder** received $21,787 from the Camille & Henry Dreyfus Foundation Special Grants Program in the Chemical Sciences for a project titled “Development of New Undergraduate Polymer Chemistry Laboratory Experiments Based on Multi-Angle Laser Light Scattering”.

**Debbie Heyl-Clegg** received $1,500 for chemicals and supplies from the Graduate School Research Support Fund for her research in “Kinetic Analysis of Novel Peptide Inhibitors of α-Amylase”.

**Presentations**

**Steve Pernecky** was awarded travel funding from the office of the Provost and the American Society for Biochemistry and Molecular Biology to attend the Experimental Biology Conference in Orlando, Florida, in late winter to present a paper Cytochrome P450 Inhibitor Treatment and Novel High-Speed GCMS Methodology as Probes of T Cell Death. The research was conducted collaboratively with Dr. Holmes, undergraduate students Noelle Ochotny and Rochelle Ferrett, and graduate students Fumi Ebisu and Harsha Jayatillake.

**Stewart Work** gave a presentation with Don Bennion entitled How One University Used the Assessment Practices at ‘Best Practices’ Colleges and Universities to Benchmark Its Own Assessment Program at the 2000 Assessment Institute in Indianapolis, November 5-7, 2000. This was an invited presentation.

**Maria Milletti and Heather Holmes** coauthored a presentation at FACSS (Federation of Analytical Chemistry and Spectroscopy Societies) in Vancouver, B.C. with graduate student Udeni Yapa and undergraduate Tom Horvath (presenter). The talk was titled Quantitative Structure-Retention Relationships for Gas Chromatography: Using Ab Initio Molecular Orbital Calculations to Model Chromatographic Retention.

**Don Snyder** gave a presentation titled DAWN Operation in Batch Mode: Effects of Sample Vial Orientation on Variability in Mw Determination at the International Light Scattering Colloquium, Santa Barbara, CA, October, 1999. He gave two presentations at Board of Regents Meetings titled Laser Surface Thermal Lensing (STL) as a Tool for Probing the Dynamic-Mechanical Properties of Polymer Thin Films: Applications in Detecting Solid State Phase Transitions and in Optical Sensors.

**Publications**

**Stewart Work** authored Chapter 8 on Student Outcomes Assessment for the decennial NCA Institutional Self-Study.

**Maria Milletti** has two publications in press. The first “A Molecular Orbital Analysis of Nucleophilic Attack on the [(η3-C2H5C(CH3)C=CH2)Pt(PPh3)2+] Complex”, which was coauthored with J.S. Haley, will be published in the *Journal of Coordination Chemistry*. Hrant Hratchian is the coauthor of “Theoretical Investigation of Substituent Effects on the Silicon-Metal Bond for a Series of Transition Metal-Substituted Bas-Stabilized Silylene Complexes” in the Journal *Polyhedron*.

**Vance Kennedy** published a paper in the *Journal of Porphyrins and Phthalocyanines* with undergraduate student Christopher Zyskowski (now a graduate student at the University of Michigan) titled “Compounds in the Series From Boron Subphthalocyanine to Boron Subnaphthalocyanine”.

**Heather Holmes and Steve Pernecky** were awarded an instrumentation grant from the National Science Foundation for a project titled ‘Novel Instrumentation for Direct On-Line Monitoring of Biological Samples in Near Real-Time High-Speed Gas Chromatography.

**Steve Pernecky** received funding through the Graduate School Research Support Fund ($2,000) to investigate the expression of cytochrome P450 in cells.

**Don Snyder** received $21,787 from the Camille & Henry Dreyfus Foundation Special Grants Program in the Chemical Sciences for a project titled “Development of New Undergraduate Polymer Chemistry Laboratory Experiments Based on Multi-Angle Laser Light Scattering”.

**Debbie Heyl-Clegg** received $1,500 for chemicals and supplies from the Graduate School Research Support Fund for her research in “Kinetic Analysis of Novel Peptide Inhibitors of α-Amylase”.

**Presentations**

**Steve Pernecky** was awarded travel funding from the office of the Provost and the American Society for Biochemistry and Molecular Biology to attend the Experimental Biology Conference in Orlando, Florida, in late winter to present a paper Cytochrome P450 Inhibitor Treatment and Novel High-Speed GCMS Methodology as Probes of T Cell Death. The research was conducted collaboratively with Dr. Holmes, undergraduate students Noelle Ochotny and Rochelle Ferrett, and graduate students Fumi Ebisu and Harsha Jayatillake.

**Stewart Work** gave a presentation with Don Bennion entitled How One University Used the Assessment Practices at ‘Best Practices’ Colleges and Universities to Benchmark Its Own Assessment Program at the 2000 Assessment Institute in Indianapolis, November 5-7, 2000. This was an invited presentation.

**Maria Milletti and Heather Holmes** coauthored a presentation at FACSS (Federation of Analytical Chemistry and Spectroscopy Societies) in Vancouver, B.C. with graduate student Udeni Yapa and undergraduate Tom Horvath (presenter). The talk was titled Quantitative Structure-Retention Relationships for Gas Chromatography: Using Ab Initio Molecular Orbital Calculations to Model Chromatographic Retention.

**Don Snyder** gave a presentation titled DAWN Operation in Batch Mode: Effects of Sample Vial Orientation on Variability in Mw Determination at the International Light Scattering Colloquium, Santa Barbara, CA, October, 1999. He gave two presentations at Board of Regents Meetings titled Laser Surface Thermal Lensing (STL) as a Tool for Probing the Dynamic-Mechanical Properties of Polymer Thin Films: Applications in Detecting Solid State Phase Transitions and in Optical Sensors.
Debbie Heyl-Clegg and students gave three presentations at the American Chemical Society (ACS) regional meeting in May, 2000:

Studies Toward Confirming the conformational Role of the Val$^5$-Val$^6$ Address Domain Residues of Deltorphin II Through QSAR and Molecular Dynamics. Deborah Heyl, Stephen E. Schullery, Sakambari Tripathy, David W. Rogers, Don Eranda Jayamaha, Medha D. Sanvordekar, and Carol Mousigian.

Substitution of Tyr$^1$ in a Nonselective Opioid Deltorphin Analog: QSAR Studies Utilizing Amino Acids with Acid/Base Capabilities at the Side Chain. Malika Jayamaha, Kutralanathan Renganathan, John Traynor, Stephen Schullery, and Deborah Heyl.

Aromatic Amino Acid Replacements at the N-Terminus of a Nonselective Opioid Deltorphin Analog: A QSAR Study. Kutralanathan Renganathan, John Traynor, Stephen Schullery, and Deborah Heyl.

Maria Milletti’s research students presented a number of papers at meetings:

Determination of Silylene Character in Five Transition Metal Substituted, Base Stabilized Silylene Complexes. An Ab Initio Study. Hrant Hratchian (Poster), 55th ACS Fall Scientific Meeting, Midland, MI.

The Nature of the Transition Structure for the Synthesis of (3-(2,3,4,5-tetramethylcyclopentadienyl)propoxy)titanium Dichloride: An Ab Initio Study. Jason Sonnenberg (Poster), 55th ACS Fall Scientific Meeting, Midland, MI.


Who says chemistry is all hard work? Pictured above are students and faculty having fun during the annual Chemistry Club picnic at Clark and Avis Spike’s homestead.
Other Activities

Thanks are in order to Don Snyder and Don Phillips for serving as Poster Coordinators for the 16th Annual Biennial Conference on Chemical Education at the University of Michigan. The conference was held from July 30 to August 3, 2000, in Ann Arbor, MI.

Biomed Expo Hosted by EMU

On Thursday, October 26, several hundred researchers, businesspeople, students, and faculty went to the convocation center at EMU to attend the Biomed Expo. This was an event designed to highlight biotechnology in Michigan, and the fact that we have ample resources for starting and growing viable biotech companies. The expo included materials for grant writing, planning for initial stock offering, working with regulators on licensing, easing technology transfer efforts, and collaboration with other companies. Students were encouraged to bring their résumés and talk to the 45 exhibitors. Extra special thanks go to Dr. Elizabeth Butch who organized the booth for EMU and made sure that our students were aware of the excellent opportunity to make industrial contacts. The expo was a success by all accounts!

Promotions and Tenure

Steve Pernecky and Vance Kennedy were both promoted to Associate Professor, and Kennedy was awarded tenure this year! They came to EMU as in the fall of 1995 and 1996, respectively. Dr. Pernecky has been working hard to revise the Biochemistry-Toxicology curriculum. Dr. Kennedy is the new coordinator for General Chemistry (121-124). They both have active research programs that involve undergraduate and graduate students, and have been active in the Chemistry Club. Congratulations to both!

Sabbatical Leave for Brabec

Mike Brabec is currently spending a five-month sabbatical leave at Palacký University, department of medicinal chemistry and biochemistry, Olomouc, Czech Republic. He is teaching biochemistry in the English Language Institute, and is also conducting research in the department, collaborating with Professor Vilim Simanek, head of the department.

Leave and Award for Brewer

Steve Brewer has enjoyed several months of leave, traveling to the Badlands, Devil’s Tower, Yellowstone, and Glacier National Parks. At Yellowstone Steve and his wife Ruby saw “a badly hungover bear, a family of elk headed by a thoroughly polygamous old bull, and a young buffalo bull who was quite unmoved by the eruption of Old Faithful.” Later, in Arizona, they observed other fascinating fauna: “Mexican wolves, a coyote, javelinas, somnolent feral cats, centipedes, scorpions, and the U.S. Border Patrol.” On a professional note, Dr. Brewer was made an Anachem Fellow, an award recognizing his outstanding career as an analytical chemist. Congratulations!!

Students Awarded Scholarships Through Pfizer Global Research and Development

Two students, Kiara Donahoo and Jonathon Nzoma, are being awarded with scholarships through the EMU foundation by Pfizer Global Research and Development. Both students are general biochemistry majors. Special thanks go to Mike Brabec and Wade Tornquist for their hand in the development of the scholarship. All of us at EMU and the administrators of the Toxicology program at Pfizer hope that the program will be funded by Pfizer for quite a few years to come.
EMU Representation at the National ACS Meeting

Students from the research groups of Dr. Heather Holmes and Dr. Maria Milletti will present their results at the National ACS Meeting in San Diego in April, 2000. Presentations include posters by Nicole Trease and Mike Pratt, Hrant Hratchian, Shaun Beier, Adam Gracon, and Dean Zdravkovski.

Thanks to the Lecturers

Familiar faces in the foyers this year include our fabulous lecturers Julie Frentrup, Raymond Hough, Sharon MacKellar, Vicki Paulissen, and Charles Kotulski. This faithful fivesome annually affords first-rate instruction to the fine students who fill our 100-level courses for non-majors. Joining the group are David Rogers and Christa Graham. Both are EMU alumni. Welcome, and thanks to all!

The pictures on this page are from Saturday Morning at the Lab. Arthur Howard is shown doing chromatography (above), Mas Yamauchi is pulling the iron out of cereal with magnets (above, right), Wade Tornquist is making a cool treat (ice cream) with liquid nitrogen (right), and Maria Milletti shows students about acids and bases with cabbage (below).