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www.gvsu.edu/chem

2007 Arnold C. Ott Lectureship in Chemistry

The 2007 Arnold C. Ott Lecturer in Chemistry was Virginia Cornish, associate professor of chemistry, Department of Chemistry at Columbia University. Dr. Cornish is the recipient of a Beckman Young Investigator Award, a Burroughs-Wellcome Fund New Investigator Award in the Toxicological Sciences, a Camille and Henry Dreyfus New Faculty Award, and a National Science Foundation Career Award. Two lectures were held: a chemistry seminar on "Co-opting Nature's Machineries for Chemical Synthesis" in 123 Manitou Hall, Allendale campus; and an evening lecture on "Bringing the Biotechnology Revolution to the Cell" at the Hager Auditorium of the Cook-Devos Center for Health Sciences in downtown Grand Rapids. The evening lecture, which was free and open to the public, was preceded by a reception in which students and faculty were able to interact with Dr. Cornish.



Dr. Virginia Cornish

A Word from the Chair

For many years, "growth" has been the main issue that has driven our agenda in the GVSU Chemistry Department. As always, we invest a great deal of time hiring new faculty and staff in order to meet the needs of our students as enrollments continue to increase. This effort truly is an investment that pays big rewards, for we know that hiring wonderful faculty and staff pays off in the long run. If you are an alumnus who has been away from GVSU for even a short while, you will certainly notice that there are a lot of new names and faces in the department directory. I would encourage you to get to know all of the people who make up the Chemistry Department for as an alumnus, you are part of our extended departmental family.

This year, we are especially glad to welcome three new tenure track faculty to the department. Nathan Barrows joins

us as a sixth member of our Chemistry Education group. GVSU has one of the largest groups of Chem Ed faculty in the country. As a group they are a tremendous resource helping to make all of our faculty better educators and scholars. We are also very pleased to welcome Cori DiCarlo and Andrew Lantz to our Analytical Chemistry group. It has been quite some time since we hired an analytical chemist, so to get two in one year is a special treat. Cori is an electrochemist and Andrew studies capillary electrophoresis, so together they provide quite an expansion of our abilities in the area of analytical chemistry.

In addition to new tenure track faculty, we are pleased to add Kristina Mack as our fifth affiliate faculty (and our first with a specialization in organic chemistry). Karen Matchett also joins us as a lab supervisor for organic lab support. Both

Kristina and Karen came to the department first as adjunct and then as visiting faculty. We also welcome Jennifer Glaab as our new Office Coordinator, taking over from Virginia Goode who retired last fall. Looking ahead, we also plan on celebrating the retirement of Gary Richmond and Sandy Bacon this year.

Finally, we all mourned the death of professor emeritus Dick Atkinson this past summer. I know that many of you donated gifts in honor of Dick to the department's Weldon Fund endowment for the support of student research. We thank all who made donations and assure you that this is also a good investment that will pay dividends for years to come in the form of enhanced research and learning opportunities for our students.

Todd A Carlson, Chair



"Dick was one of the most influential people in my professional career.

It was his love of chemistry and love of life that guided me through GVSC and that set me on my career path those many years ago. He will always occupy an honored part of my memories of college."

Terry Balko

Dr. Atkinson's Passing: A Reflection from Gary Richmond

I was saddened to learn of the passing of Dick Atkinson who was a colleague and friend of mine for almost forty years. As a new member of the department about a year after Dick, I was made to feel very welcome by the first faculty members and by Dick who showed me around Grand Rapids. Many subsequent faculty, including some outside the department, enjoyed the hospitality of Dick and his wife Peggy and were made to feel right at home as their lives at Grand Valley started. We all remember Dick as a true gentleman with a pleasant spirit, a quiet sense of humor, and a kind word for everyone (and his bright red academic regalia from Harvard). We remember Dick's love of gardening, cooking, his years in Boy Scout leadership, and music as a church choir member and as someone who could play the bassoon.

Dick developed the beginnings of organic and biochemistry courses at Grand Valley, the nature of which continues, especially in our laboratory instruction. He was highly respected as an outstanding teacher and was honored as such by the Michigan Board of University Governors Award. I recall the special welcoming sound to his voice as students came to his office for help and how his unending patience brought out the best in them. His research activities attracted many and led to a publication in the Journal of Organic Chemistry with six student authors. Dick's committee work and organizational efforts on Upward Bound over the years were valued contributions to the development of Grand Valley. His sound judgment made him an ideal choice as chair of the divisional personnel committee.

Dick was proud of the many students whose lives he influenced and he enjoyed following them after graduation. An excellent student tribute comes from Terry Balko, class of 1970, who wrote, "Dick was one of the most influential people in my professional career. It was his love of chemistry and love of life that guided me through GVSC and that set me on my career path those many years ago. He will always occupy an honored part of my memories of college."

Dick's influence has flowed through the university, students, and the larger community. Beyond his lasting contributions, we will miss his wise counsel and kind friendship.

Gary Richmond

Chemistry Faculty Member Honored with the Educational Support Program (ESP) Professor of the Year Award

Chemistry faculty member, Felix Ngassa (Assistant Professor), was one of three university faculty members honored as ESP Professors of the Year 2006/2007. The awards were made at the ESP's annual banquet on March 30, 2007. The associate director of ESP, Karen Mead, said faculty members were nominated for "their teaching styles and going the extra mile to help students overcome obstacles". ESP is a TRIO grant program for students who are among the first generation in their family to attend college.



Department Faculty News

Associate
Dean
Sherril
Soman



Sherril Soman is currently serving as an associate dean of CLAS, temporarily replacing Maria Cimitile who is on sabbatical.

Min Qi was promoted to full professor. She is planning to take her sabbatical leave next year.

Gary Richmond is on the last lap of his phased retirement this fall. He will be retiring from GVSU at the end of 2007. He will greatly be missed as an instructor, but will still be part of the GVSU chemistry family. We hope to see him at our annual chemistry activities such as Science Olympiad and Chemistry Department picnics.

Target Inquiry Program Raises the Bar for High School Chemistry

In January 2006 ten area high school chemistry teachers began Target Inquiry (TI), a long-term and innovative professional development program developed by Deborah Herrington and Ellen Yezierski with the goal of improving the frequency and quality of inquiry-based instruction in high school chemistry. Herrington and Yezierski have secured over \$165K from GVSU and over \$1.4 million from external grants to support the TI program and its study. Thus far, the teachers have exceeded the faculty's expectations and have grown into a strong community of scholars devoted to instructional reform. The following accomplishments would not have been possible without the contributions of many faculty, high school teachers, and students.

The teachers completed a summer mentored research experience accompanied by a reflective seminar (taught by Sherril Soman) in 2006. Research work completed under the guidance of faculty mentors Karpen, Kovacs, Leonard, Matchett, McBane, Qi, Schaertel, Smart, and Winchester, was presented at the 233rd American Chemical Society National Meeting in Chicago in March 2007. The TI directors gracefully acknowledge the support of faculty mentors as well as Janet VanRhee for her administrative support of all aspects of the project. The literacy and action research expertise of Caryn King from the College of Education (who teamed with Julie Henderleiter) during the teachers' Chemistry Education Research course in Winter 2007 is also greatly appreciated. In summer 2007 Julie Henderleiter and Sherril Soman guided the teachers as they authored 18 new conceptually rich, inquiry-based laboratory activities (and teacher guides) for high school chemistry which will be published on the TI web site in fall 2007. It is essential to rec-

ognize the dedicated TI teachers who will be implementing their new activities during this academic year and carrying out action research projects in their classrooms. The teachers and their affiliated schools are: Brian Brethauer, Allendale HS; Kevin Conkel, Hudsonville HS; Tim Ewald, Black River Public HS; Debra Johnson, North Muskegon HS; Peter Larsen, Holland HS; Gretchen Ludeman, Kelloggsville HS; Susan Munster, Muskegon HS; Alice Putti, Jenison HS; Sarah Toman, West Michigan Christian HS; Brian VanZanten, West Ottawa HS.

Although the TI program has only been in existence for two years, evaluation data has been extremely positive and these findings have been disseminated through over 15 posters and oral presentations at local, national, and international conferences. To name a few, student researchers Cynthia Luxford (CHM major) and Laura Kennedy (graduate research assistant) presented posters at the 233rd American Chemical Society National Meeting in Chicago in March 2007. Herrington and Yezierski shared their

most recent findings at the Gordon Research Conference on Chemical Education Research and Practice at Bates College in June 2007. Moreover, the project has generated four papers (1 published, 2 submitted, 1 in preparation). The TI research team now includes undergraduate students Ryan Wissner and Karen Luxford, with more students expected to join by the end the fall semester.

The next cohort of ten teachers has been selected and will begin the program in January 2008. Herrington and Yezierski continue to direct TI and its study as well as plan the dissemination of the program to partnering universities. They are seeking corporate partners to fund future teacher cohorts and encourage interested alumni to contact them through the Chemistry office.

TI is supported by the National Science Foundation (ESI-0553215), The Camille and Henry Dreyfus Foundation 2005 Special Grant Program in the Chemical Sciences, and GVSU. More information is available at www.gvsu.edu/targetinquiry.



*TI Teachers and Chemistry Faculty:
Henderleiter, Herrington, Soman, and
Yezierski.*



Chemistry Department Honors Students

In April of 2007, the chemistry department honored many of its most outstanding students for the 2006/2007 academic year. A total of eight awards in various categories were granted. The award winners in the different categories were the following.

Outstanding Freshman Award: Michelle Dionne was the recipient of this award, which recognizes a student who must have completed CHM 115 and is either enrolled in or must have completed CHM 116 by the end of the current academic year. In addition, an eligible student must have fewer than 25 earned credits.

Outstanding Sophomore Award: Brandon Haines was the recipient of this award, which recognizes an outstanding student who must have completed CHM 245-248 by the end of the current academic year. In addition, an eligible student must have fewer than 55 earned credits and be a declared chemistry major.

Outstanding Junior Award: The recipient of this award was Angela Bopra. To be eligible for this award, a junior must be a declared chemistry major with at least 30 credits of chemistry completed, and have fewer than 85 earned credits. In addition, a junior must be enrolled in CHM 358 and 355.

Outstanding Senior Award: Kyle DeKorver was the recipient of this award, which recognizes a graduating senior with an overall GPA of 3.5 or greater. Other eligibility requirements for this award are: research participation; service to the department; chemistry-related extracurricular activities; and general attitude.

American Institute of Chemists Award: Brittlund Winters was the recipient of this award, which recognizes a graduating senior who meets all or most of the criteria for the Outstanding Senior Award.

Outstanding Analytical Chemist Award: Jennifer Heldt was the recipient of this award, which recognizes a declared chemistry major who is outstanding in CHM 222.

Organic Chemist Award: The recipient of this award was Elise Miller. The award, sponsored by PolyEd (the polymer education committee of the A.C.S.), is given to a student whose overall GPA is greater than 3.3 and whose performance in the two semester Organic sequence is outstanding.

Senior Chemical Education Award: Brittlund Winters was the recipient of this award, which is given to a graduating senior who is a Chemical education major.

2006 Distinguished Alumna-in-Residence

The Distinguished Alumni-in-Residence Program of the College of Liberal Arts and Sciences is an opportunity for various departments in the college to invite outstanding alumni back to campus to share their post-graduation experiences with students, faculty, and staff at GVSU. Our department's Distinguished Alumna-in-Residence for 2006 was Dr. Ann Visser, Senior Scientist at Savannah River National Laboratory. Dr. Ann Visser graduated from Grand Valley State University in 1997 with a B.S. in Chemistry. She completed her Ph.D. in Inorganic Chemistry in 2002 from the University of Alabama working in the group of Professor Robin Rogers. At the University of Alabama, Ann won an

award for Outstanding Research by a Doctoral Student. Her research focused on the use of metal ion extractants, designed for use in traditional solvent extraction, applied successfully in Aqueous Biphasic Systems and Ionic Liquid Systems. At Savannah River National Laboratory, Ann has been very productive, winning the Laboratory Director's Award in May and November of 2005. As part of her activities, she organized a symposium on f-element chemistry in ionic liquids at the Rare Earth Research Conference in Keystone, Colorado in June of 2005. Her research work has also been the basis for numerous presentations at national meetings.



Dr. Ann Visser



New Faculty 2007-2008

Nathan Barrows has joined the faculty as an Assistant Professor of Chemistry. In 1996, he graduated with highest honors from Montana State University with a B.S. in Chemistry. After graduation he taught high school chemistry for several years in Nampa, ID before returning to graduate school. At the University of Northern Colorado, he earned an M.S. in Chemistry for his work with dihaloaziridines under Dr. Marcus K. Meilahn and received his Ph.D. in Chemical Education (2005), with Dr. Loretta L. Jones as thesis advisor. Following graduate school, he was a postdoctoral researcher at Arizona State University in the chemical education research group led by Dr. Janet Bond Robinson. His research interests include problem solving in organic chemistry, conceptual change, concept inventory development, and professional development of secondary science teachers.

Cory DiCarlo has joined the faculty as an Assistant Professor of Analytical Chemistry. He is a graduate of Northern Illinois University, receiving his Ph.D. in Analytical Chemistry in 2003, working under the direction of Drs. Petr Vanysek, James Erman and Lydia Vitello. He has worked in industry for Alberto-Culver's Analytical Testing lab and as an adjunct professor at College of DuPage, Harper College of Palatine, and Illinois Central College. As a postdoctoral researcher for the United States Department of Agriculture's New Crops and Processing Technology Division, he developed electrode-bound, wall current powered, redox enzyme systems to transform soybean oil into sunscreen agents. After completing his postdoctoral work, he was employed as an Assistant Professor at Clarion University of Pennsylvania. Current research areas include SAM modified electrode surface composition,

enzyme-electrode based sensors and enzymatic systems, protein-electrode interactions, electrochemical impedance based sensors, and ultra-low cost battery systems.

Andrew Lantz has joined the faculty as an Assistant Professor of Analytical Chemistry. He is originally from Rochester, Minnesota and graduated from St. Olaf College in 2001 with a B.A. in Chemistry. After college, Andrew worked as a laboratory technician in the Biochemical Genetics Lab at the Mayo Clinic, testing for various metabolic genetic disorders via GC-MS. Afterwards, he attended Iowa State University for his graduate studies in Analytical Chemistry, under the guidance of Dr. Daniel Armstrong. He recently completed his Ph.D. in May 2007, and is excited to be joining the GVSU faculty this fall. His research interests include the separation and analysis of microorganisms by capillary electrophoresis, binding constant and interaction parameter measurements, and enantioseparations of pharmaceuticals and other natural products of current interest.

In addition to the tenure track positions, our department also has three new Visiting Instructors joining us this fall. **Christopher Anderson** received his Ph.D. from the University of California, Irvine, under the direction of Professor Scott Rychnovsky and did postdoctoral studies in computational chemistry with Professor Ken Houk at UCLA. He is currently teaching CHM 115. **Shannon Biros** received her Ph.D. in chemistry from The Scripps Research Institute and did post-doctoral research at UC Berkeley. She is currently teaching CHM 230 as well as some CHM 242 laboratory sections. **Daniel Solomon** has an MS from Michigan State University and teaches CHM 109 and 115. The department also has new adjuncts helping out with the teaching of some of our labs: Fawzi Abbas, Dan Gerbens, Daniel Jackson, and Erick Lindsey.



Dr. Nathan Barrows



Dr. Cory DiCarlo



Dr. Andrew Lantz

Student Scholarship Day

The Chemistry Department was well represented at the 12th Annual Student Scholarship Day in April 2007. More than a dozen Chemistry students presented their research results in either oral or poster form. The following students represented the Chemistry Department for Student Scholarship Day 2007:

Ryan Ward. "Reaction of Lithium Nitride with Organophosphines". Sponsor: John Bender

Jesse Ondersma. "Progress Towards the Synthesis of Apomorphine". Sponsor: Matthew Hart

Laura Kennedy. "Whose Science is it Anyway?: Models of Science According to Chemistry Students, Faculty, and Teachers". Sponsors: Deborah Herrington & Ellen Yeziarski

Cynthia Luxford. "Target Inquiry: How Does a Chemistry Research Experience Impact Teachers'

Perceptions of Science Inquiry". Sponsors: Deborah Herrington & Ellen Yeziarski

Richard Lacoursier. "Investigation of Cis and Trans 1,2-Cyclohexanediols". Sponsor: Dalila Kovacs

Tadas Kasputis. "Cis-1,3,5-Cyclohexanetriol Interaction with Metal Catalysts in Aqueous Solutions". Sponsor: Dalila Kovacs

Angela Bopra. "Defining the Role of a Unique Omega-Loop Insertion in the Class D Lactamase OXA-1". Sponsor: Dave Leonard

Katherine Hamilton. "Regioselective Bromination of Aromatic Compounds". Sponsor: Felix Ngassa

Erick Lindsey. "Development of Efficient Catalyzed Synthesis of Aryl Ethers". Sponsor: Felix Ngassa

Matthew VanGessel. "Sonogashira Coupling in the Synthesis of Modified 2'-Deoxyribonucleoside Derivatives". Sponsor: Felix Ngassa

Hehl Brent. "Exploring Important Protein Interactions in the Mammalian Diaphanous-Related Formins". Sponsor: Brad Wallar

Jonathan Rawson. "Probing the Specific Amino Acid Residues Involved in the Regulation of the Diaphanous-Related Formins". Sponsor: Brad Wallar

Chad Meece. "Asymmetric Synthesis of Chiral Silanes: Eliminating the Doppelganger". Sponsor: Randy Winchester

Benjamin Eovaldi. "The Effect of Dihydrotestosterone on Vascular Reactivity in Coronary and Pulmonary Arteries". Sponsor: Randy Winchester

Terry Balko, a 1970 graduate, recently retired from Dow AgroSciences as a Senior Scientist after almost 37 years. Terry writes, "I leave with 12 published patents (with several more pending) as well as a number of publications. My love and passion for organic chemistry was spawned and nurtured in the chemistry labs of Loutit Hall. When I arrived at Lilly in 1970 (I started as an agricultural chemist with Lilly and then was part of a JV with Dow-DowElanco--and then when Lilly sold out became Dow AgroSciences), I was better prepared than my colleagues who came from schools such as IU. I still have fond memories of those days--we were a close knit group---Dick, Irene Pare, Charlie Knapp, Gary, John Weldon, Steve Lull, June Allen and many others. I was very lucky to spend my life doing something that I loved doing and getting paid well to do it."

Regina Ludwig, a 1997 graduate, is a research chemist with Henkel, located in Madison Heights. Gina recently served as a representative for more than 159,000 members of the National American Chemical Society (ACS) during a visit to the nation's capital. ACS invited Ludwig as one of three representatives of the organization to support President Bush's American Competitiveness Initiative.

Lisa Franklin-Mondie, a 1998 graduate, got her Pharm. D from Midwestern University in September 2007 and is now in the process of owning her own pharmacy. Lisa and her husband are the proud parents of two girls. She writes, "If it were not for my professors at GVSU who really truly concerned about their students and pushed us to do our best, I would not have made it this far".

Shannon Biros, (see right) a 2001 graduate, received her Ph.D. in chemistry from The Scripps Research Institute and did a post-doc at UC Berkeley. She is currently a Visiting Assistant Professor at GVSU. It is great to have alumni come back and serve their alma mater.

Brian Wysocki, a 2003 graduate and his wife had a baby girl Reese Elizabeth Wysocki on August 10, 2007. Brian also

got a new job as "a chemist on batteries" for a military contractor, BAE Systems. He writes, "I have worked for BAE Systems for two weeks now and things have been going well. Basically, I will be in charge of their lithium ion battery division, where I will be analyzing failed batteries, then developing solutions to solve the problem. I will also be creating batteries and then testing them at various conditions to find their specs. Since I have been there I have been doing something new everyday, which keeps things interesting. I don't think my time in education is finished, but for now I am glad to have made the change as it will give me more options when we move back to Michigan in the near future". Brian and his wife will be graduating and receiving their Masters degree in December of 2007.

Jaime Curtis, a 2004 graduate, is currently doing her Ph.D. in Chemistry at Michigan State University. Jaime recently got engaged and his fiancé is also a chemistry graduate student. Jaime was recently awarded the MSU Excellence in Teaching Award, the highest graduate student teaching award. Jaime writes, "I try to get my students interested, make time for them when they need help, and put effort into preparing for class, all of which I assumed was a requirement after watching my professors at GVSU; but it seems that here that is enough to deserve an award. I guess that just shows how good of teachers you guys are, I have good role models! "

Kyle DeKorver & Brittlund Winters, 2007 graduates, recently got engaged and will be getting married on December 28, 2007. It should be noted that Kyle's and Brittlund's romance will forever be remembered as "chemistry made in Padnos Hall". Kyle is currently pursuing his Ph.D. at the University of Wisconsin, Madison. Brittlund plans to teach high school for a couple of years before embarking on a graduate program in Chemical Education. We wish Kyle and Brittlund good health and prosperity in their future together.

Alumni News



Dr. Shannon Biros

Departmental Research Update

Research in the department remains active. Many faculty members attended regional, national and international meetings in which the results of their research were presented. The department has also maintained as its priority the active involvement of undergraduate students in research. The preceding academic year saw an increase in the number of student presentations at regional and national meetings. The proceeding section summarizes a few examples of faculty research update.

Debbie Herrington and Ellen Yeziarski continue their research on Target Inquiry (TI). Plans are underway for the second cohort of teachers to start research under the guidance of chemistry faculty mentors in the summer of 2008.

John Bender is working on a collaborative project with the AWRI on ^{31}P NMR of river water. His research student, Mike Bishop, received a Weldon fellowship this past summer to work on the ^{31}P NMR project.

Matthew Hart continues his research in the area of bioorganic chemistry. He had a funded Student Summer Scholar working on some research projects this past summer.

Julie Henderleiter worked on a funded PTI-FTLC grant on "Facilitating the Learning of Chemistry through Animations and Visualizations". This work was done in collaboration with Mary Karpen and Felix Ngassa.

Mary Karpen worked on a funded PTI-FTLC grant on "Facilitating the Learning of Chemistry through Animations and Visualizations". This work was done in collaboration with Julie Henderleiter and Felix Ngassa.

Dalila Kovacs continues her research on hydrogenation and green chemistry.

Jim Krikke continues his work of troubleshooting the instruments in the department and making sure faculty and students can use all the instruments more efficiently.

Christopher Lawrence continues his research in computational chemistry. Two of his students, Alex Gilde and James Marr, presented their work at the Midwest Undergraduate Computa-

tional Chemistry Consortium Conference over the summer. Alex's presentation was on "Water Evaporation From Tropospheric Aerosols", while James' presentation was on "Vibrational Spectroscopy of Carbonmonoxymyoglobin".

Dave Leonard and his research students, Brian Smith and Angela Bopra, attended the American Society for Biochemistry and Molecular Biology meeting in April, where they presented posters of their research work. Angela won honorable mention in the undergraduate poster session. Dave also worked with two undergraduate students this past summer: Kyle Schneider's project was on "Synthesis and characterization of a deacylation-deficient mutant of OXA-I beta-lactamase"; and Jennifer Buchman's project was on, "Site-saturation mutagenesis of Valine 117 of OXA-I beta-lactamase".

Steve Matchett got a paper published with two undergraduate students in the *Journal of Organometallic Chemistry* on "Electronic control of the competitive π donation in heteroatom substituted $\text{CpFe}(\text{CO})_2(\text{olefin})\text{BF}_4$ complexes and the resulting influence on the symmetry of the metal to olefin bond".

George McBane continues his research in computational and experimental physical chemistry. He had a funded Student Summer Scholar working on some research projects this past summer.

Felix Ngassa continues his research on transition metal-catalyzed syntheses of modified nucleosides. He had a funded Student Summer Scholar, Erick Lindsey, working on "Sonogashira Coupling in the Synthesis of Modified Deoxynucleosides" this past summer. He also collaborated on a PTI-FTLC grant with Mary Karpen and Julie Henderleiter in the summer. Some of his research was also published in the *Journal of American Chemical Society* in February of 2007. The Ngassa group currently has two undergraduates doing research this fall.

Rachel Powers and her research students, Jenna Tomlinson and Rachel Kubiak, presented a poster "The Synthesis of Non-beta-lactam inhibitors for AmpC" at the 234th national meeting of the American Chemical Society in Boston.

Min Qi presented a poster on "Kinetics of Polychlorinated Biphenyls and Lead in Goldfish" at the 5th International Conference on Marine Pollu-

tion and Ecotoxicology in June of 2006. The work was done in collaboration with Dr. Xu in the Psychology Department of GVSU and students Adams Werts and Brian VanZanten. Min received a research grant from R&D in April of 2007. The funds will support her research project "Organic Residues Analysis in Farmlands, Crops and Food in Xi'an City and the Wei River". The project will be conducted in Xi'an, China, where she will be on sabbatical leave in the winter of 2008. Min also visited China in May of 2007, where she collected soil and crop samples from the Wei River near Xi'an. She will conduct a preliminary study this fall and use the data to finalize her sabbatical leave research plans.

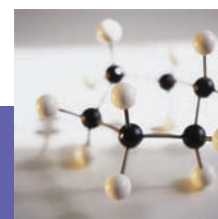
Stephanie Schaertel continues work on her project involving building a low cost Raman spectrometer for detecting protein structure. The Schaertel group has submitted a paper to the *Chemical Educator* on research work done last summer with two Target Inquiry teachers (Debra Johnson and Peter Larsen).

Robert Smart continues his research on the synthesis of Polyimide and PBO materials.

Sherril Soman continues her research on the use of lab practical data to assess the changes in the CHM 115 and CHM 116 lab experience.

Brad Wallar and his research students, Brent Hehl and Jonathan Rawson, attended the American Society for Biochemistry and Molecular Biology meeting in April, where they presented posters of their research work. Brent won honorable mention in the undergraduate poster session.

Randy Winchester continues research in the area of asymmetric synthesis. In the spring Tim Ewald presented the research on asymmetric nucleophilic substitution using Grignard reagents at the National ACS meeting in Chicago. In the summer, two students continued research into the synthesis of chiral silanes. Chad Meece worked looking at steric effects on enantioselective substitutions. Chad presented his efforts at the fall 2007 national American Chemical Society meeting. Paul Vogel joined the group this summer and is working on a project to develop t-butylphenylsilane derivatives as chiral auxiliaries.



GVSU Students Present Chemistry Research At The 233rd and 234th



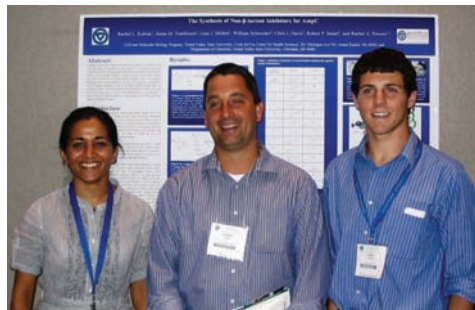
National Meetings of the ACS

The GVSU Chemistry Department was conspicuously present at the 233rd national meeting of the American Chemical Society in Chicago, IL, as many students and faculty made it to the spring meeting for either oral or poster presentations. The bulk of the presentations came from the first cohort of TI teachers, who presented research completed at GVSU under the guidance of chemistry faculty mentors. Other student presentations came from the research groups of Deborah Herrington, Dalila Kovacs, Felix Ngassa, and Ellen Yezierski.

The department was also represented at the 234th national meeting of the American Chemical Society in Boston, MA. Undergraduate students working under the guidance of chemistry faculty Robert Smart and Rachel Powers presented their research results at the Boston meeting.



Student Erick Lindsey in Chicago



Professor Smart with Uma Mishra & Chris Davis in Boston

Chemistry Department Instrumentation News



**The
400
MHz
Varian
NMR.**

Several new additions or upgrades were made to the Chemistry Department's list of instrumentation. A new Jasco FTIR was recently installed and is equipped with a diamond plate Attenuated Total Reflectance (ATR) accessory. This facilitates high sample throughput in a lab setting by eliminating the need for sample preparation. In addition, the ATR in the older Jasco unit has been upgraded to

a diamond plate due to the wear the zinc serenade plate was showing after a year of heavy student use.

Several of the older instruments have also received upgrades. The Perkin Elmer FTIR, also equipped with a diamond plate ATR, has a new computer that should prove to be more stable. The Varian AA was also upgraded with a new computer and the latest software version. The Perkin Elmer luminescence spectrometer (LS-50B) now has a new computer with a software upgrade as well. The Hewlett Packard 5890 GC with dual flame ionization detectors (FID) had new columns installed and gas flows adjusted to optimize its performance. A second HP 5890 was received as a donation. It has both flame ionization (FID) and electron capture (ECD) detectors (useful for low

levels of halogenated compounds) and is currently being repaired before installation is complete.

Several of the department's high performance liquid chromatographs (HPLCs) were given performance checks and any minor problems corrected. Some of our older equipment that was not in use has been sold to generate funds for the department. We anticipate selling more of our unused equipment in the near future. This has allowed us to open up some much needed space in our storage area, which was reorganized this summer.

Finally we have another solvent purification line coming for hexane. This line will allow us to dismantle the last still that was commonly used. A big safety plus!

Please update us
on news about you!

Send Information To:
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Remember to include
your graduation year.