

AU Engineering News

Volume 6, number 2

December 2004

Also in this issue ...

Student News

Moschiano receives McMahon Award ... page 2

ASM/TMS Joint student chapter news ... page 2

ME's compete in Formula SAE ... page 3

Keramos reports activities ... page 3
St. Pat to return to Alfred in 2005 ... page 3

Science on Wheels for Fall 2004 ... page 3

Engineers set the pace in swimming, tennis ... page 8

Program News

Engineering & Materials Science Day draws future scientists to campus ... page 4

Hafner joins technical staff as microscopist ... page 4

Goodbye Ward, Hello Ward ... page 4

Conference News

Fuel Cell workshop links industry and University ... page 6

Biomedical Ethics conference receives grant support ... page 6

Research and Faculty News

AU Glass scientists develop new biohazard technology ... page 5

UGrad research to be presented at Cocoa Beach Conference ... page 5

Faculty News ... page 7

Short Courses and Outreach

Short Courses for 2005: Enterprise Resource Planning - a new course ... page 7

Undergrad Seminar finishes lively program for Fall '04

All Alfred University undergraduate engineering students are required to attend seminar each semester that they are on campus. The School of Engineering faculty are constantly seeking speakers to present interesting and thought-provoking presentations.

For Fall 2004, the speakers that helped us meet these included:

- Mario Bochiechio, Carpenter-Certech, Inc. (Process Control through Statistics).
- Dr. Stephen Carson, Arkema Inc. (Planning for Your Career or What Do I Want To Be When I Grow Up, And How Will Alfred Help Me?).
- Lt. Benjamin Zittere, US Navy (Naval Nuclear Power).
- Dr. Elizabeth Vileno, Corning, Inc. (The Science of RF and Microwave Processing in Industry).
- Dr. Chong-il Park, Kyocera America, Inc. (Electronic Packaging from a Ceramic Point of View).
- Andy London, Heraeus Incorporated (Ceramic Technology in Microelectronics).
- Barry Hemley, Dr. Doug Wing, Dr. Mark Vaughn, and Dr. Bryan Wheaton, all from Corning, Inc. (Panel Discussion—Career Paths in Engineering).

Seminar has ambitious objectives; namely, (a) to further our students' understanding of professional ethical responsibilities, (b) to help them understand the impact of engineering solutions in a global and societal context, (c) to provide them with models that demonstrate the need for life-long learning, and (d) to add to their knowledge of contemporary issues. Not all of the objectives are met in a single presentation, but over the course of the semester we can meet all of them.



Barry Hemley, Dr. Doug Wing, Dr. Mark Vaughn, and Dr. Bryan Wheaton, all from Corning, Inc.



Dr. Elizabeth Vileno



Dr. Steve Carson

Pye to present 2005 Scholes Lecture



Dr. L. David Pye

Dr. L. David Pye, dean emeritus of the NYS College of Ceramics at Alfred University and long-time member of its faculty, will present the annual Scholes Lecture on April 7, 2005. He will speak on the history of glass science at AU.

In addition to serving as the Dean of the College, Pye helped establish the NSF Industry-University Center for Glass Research (CGR) in 1985. Pye has been widely honored by the world's glass community and is a fellow of the American Ceramic Society and the American Institute of Chemists and is an Honorary Member, The German Society of Glass Technology.

Moschiano receives McMahon Award

Holly Moschiano was awarded the McMahon Achievement Award on October 14, 2004, at the conclusion of the 2004 McMahon Lecture presented by Dr. Chong-il Park, Vice President of the Research and Product Technology Center for Kyocera America, Inc.

The McMahon Achievement Award was established to honor the late John F. McMahon who always led the NYS College of Ceramics to consider the vital needs of industry while maintaining a strong academic tradition of fundamental research and education.

The Award is presented annually to an undergraduate returning from Co-op based on review of performance by their industry supervisor for her outstanding Co-op performance.

Moschiano received her award for her work with Dr. William Miller, IBM Microelectronics Division, Hopewell Junction, NY.



From left, Dean Alastair N. Cormack; Dr. Chong-il Park, 2004 McMahon lecturer; award-winner Moschiano; and her advisor Dr. James Shelby, John F. McMahon Professor of Ceramic Engineering.

ASM/TMS Joint Student Chapter News

The Alfred University ASM/TMS Joint Student Chapter is currently in its fourth year of existence. ASM is the American Society for Materials and TMS is The Mining, Metals and Materials Society (a lot of M words in one acronym letter).

This year, the ASM, TMS and the American Ceramic Society (ACerS) national chapters combined to form the Materials Advantage program, a single low-cost membership that provides students access to the materials science and engineering professional's most preeminent societies. The \$25 membership fee now includes student membership all three organizations. Student members also now receive the trade



journals for all three organizations: JOM, Advanced Materials & Processing, and Ceramics Bulletin.

Locally, our student chapter received a \$500 grant this past summer from the Schwab Fund through the Deitch family. This generous alumni support is greatly appreciated and nearly doubles our funds for on-campus activities. Any students with ideas for activities or who would like to help with previously planned activities can contact the student chapter

officers with their suggestions.

This year's officers are: Chris Montean, Chair; Brandon Striker, Vice Chair; Jennifer Peek, Secretary; and Glen Jewell, Treasurer.

Faculty advisor Dr. Alan Meier, assistant professor of metallurgy, reports that Chris Montean will be going on co-op at PNNL and Glen Jewell will be on semester abroad in Spain in the spring, so they're looking for students interested in helping Striker and Peek in the spring.

Mechanical Engineers compete in Formula SAE

By Chris Sorokes

A team of engineers from Alfred University's School of Engineering will be entering the Formula SAE® competition in May of 2006. The team effort, extending over a period of about one year will result in a car to be taken to the annual competition

Society of Automotive Engineers (SAE) sponsors the Formula SAE® competition for student members to conceive, design, fabricate, and com-

pete with small formula-style racing cars. The restrictions on the car frame and engine are limited so that the knowledge, creativity, and imagination of the students are challenged.

Each year, 140 college teams meet in Pontiac, Michigan, in order to display their knowledge in an international automotive design competition. The budget for the car is limited, so the competition challenges the students not only to design a perform-

ance car which meets organization rules but also to maintain cost efficiency.

The estimated cost for the competition will be approximately \$25,000 to that raised by the team through fund raising and sponsorship donations. For more information or to contact the team, please visit their website at www.saxonracing.com.

(Continued on page 6)

Keramos reports activities

By Heidi Schulze

The students of Keramos have enjoyed participating in community and fundraising activities this semester. The faculty-student BBQ was a hit in September with a record turnout, most likely due to the gorgeous weather.

Six members had fun helping in the Alfred community's UNICEF (United Nations International Children's Emergency Fund) Drive on October 28. The drive was coordinated through the Union University Church of Alfred. Keramos volunteers rode hay wagons accompanying the children in their door-to-door collection. Rain and cold weather didn't dampen anyone's happy spirits.



The previous Friday and Saturday nights, you might have happened to encounter a foul demon, Romans or a cowgirl selling delicious sweets on Main Street. Really Keramos members in disguise (and with no poison tarts for the

unsuspecting), the bake sale's profits will go to support the activities of Keramos throughout the year, including inductions, a faculty-student mixer, and attending conferences. Thanks to everyone who donated the baking mixes that made it all possible!

Keramos members have also spent a couple of the November Saturdays raking leaves, another fundraiser to directly support students' travel to different professional conferences. A big thanks to Dr. Paul Johnson, professor ceramic engineering, for this opportunity!

Inductions this semester were in the form of a spaghetti dinner on Thursday, November 18th.

Heidi Schulze is a sophomore majoring in Materials Science and Engineering

St. Pat to return to Alfred in 2005

By Kathryn Goetschius

Nearly 20 years after it was cancelled, the St. Pat's festival will return to Alfred University for spring 2005. St. Pat's was a part of campus life from 1933 to 1986.

Preserving the best of the St. Pat's traditions, while offering new events that will appeal to today's students, is the goal of the St. Pat's Board, a group of students that is trying to revitalize the event.

Scheduled events include a parade, a ball, an open house for prospective engineering students, and a favors sale. The festival will start on Thursday, March 17, 2005, during undergraduate seminar. The seminar will be followed by the parade and the arrival of St. Pat. The culminating event will be the St. Pat's Day Ball, co-sponsored by the St. Pat Board and the Student Alumni Association, on

Saturday night, March 19, 2005. All students and faculty, as well as alumni, are invited.

Currently the Board is working on the production of the favors. The mug, designed by an art student, will be produced over winter break in the Mud Lab.

Kathryn Goetschius is a junior in material science and engineering.

Science on Wheels for Fall 2004

By Kathryn Goetschius

Science on Wheels - a program that encourages students' interest in science and engineering - started out the fall semester with a demonstration for the Alfred University engineering. Polymers, ceramics/superconductors, glass, scanning electron microscope and the Van der Graff generator were among the stations offered during the two seminars.

Members of both Science on Wheels and Society of Women Engineers also assisted AU engineering recruiter, Andrew Corman, in doing a science discovery day in conjunction with Corning Inc. at the Wings of Eagles Museum (National Warplane museum). Demonstrations by AU students included superconductors/liquid nitrogen, Van der Graff generator, polymers.

Most recently, Science on Wheels

hosted about 120 students from Bath at AU campus. Despite having short notice, the demonstrations were successful, if that can be measured in terms of the number of visitors who were both interested - and dirty - from mud lab!

Science on Wheels plans on having Alfred-Almond seventh and eighth graders as well as physics students on campus during Engineering Week in Spring 2005.

Engineering and Materials Science Day draws future scientists to campus

Area high school students were invited for the annual Engineering and Materials Science Day, October 28, 2004, an opportunity to show their stuff in a scholarship exam competition and then see what Alfred University's School of Engineering has to offer. Approximately 110 students from 12 high schools in Western and Central New York competed in the scholarship exam; the two top winners receiving \$4,000 (\$1,000 a year for four years) scholarships to AU's School of Engineering.

Dr. Alastair N. Cormack, dean of the School of Engineering, welcomed the competitors and their teachers. After the exam, participants enjoyed lunch in Ade Dining Hall, and then toured AU's science and engineering labs prior to the awards presentation.

The two first-place scholarship winners were Brennan Hardy (Canisteo-Greenwood High School) and Daniel Balonek (Byron-Bergen High School). Second 2nd place winners were Greg Balonek (Byron-Bergen High School) and Pete Coats (Allegany-Limestone Central



At right, Dean Cormack congratulates 1st place winner Daniel Balonek, accompanied by Ms. Brianna Wood of Byron-Bergen High School. At left, 1st place winner Brennan Hardy, accompanied by Ms. Devette Carpenter of Canisteo-Greenwood High School.



School). Third place winners were Andy Timbrook (Alfred-Almond Central School) and Yohana Jonchhe (Hornell High School).

In addition to the scholarship, the first place winners received a \$50 cash award and a graphing calculator donated by Texas Instruments. Second and third place winners received \$25 and \$15 cash awards, respectively.

The day also included a morning informational program for high school teachers and guidance counselors. For information on next year's Engineering and Materials Science Day and scholarship exam contact Marlene Wightman, wightman@alfred.edu, director, Continuing Education/Conferences.



Greg Balonek,
2nd place



Pete Coats,
2nd place



Yohana Jonchhe,
3rd place



Andy Timbrook,
3rd place

Hafner joins technical staff as microscopist

By Heidi Schulze

Dr. Robert Hafner has joined the School of Engineering staff as technical specialist in electron microscopy, stepping in for retiring microscopist Ward Votava.

Hafner received his PhD in science education. Before arriving at AU, Hafner worked in electrical and computer engi-

neering at the University of Wisconsin-Madison. Changing career paths, he spent two years receiving SEM training then worked with SEM imaging and scanning laser confocal microscopy at Northwestern University.

This current job allows Hafner to combine his experience of science education with his technical background. "It

will be very hard to replace Ward; he built this place," says Hafner.

He looks forward to meeting all the faculty and staff and learning about the research programs. He is ready and willing to help in any way he can in the utilization of this imaging facility.

Goodbye Ward, Hello Ward

By Heidi Schulze

Ward E. Votava, technical specialist in optical and scanning electron microscopy and an adjunct instructor of ceramic engineering, has retired from his 37 ½ years with the NYS College of Ceramics at Alfred University.

Votava graduated from Alfred State College and applied for a job at AU; his career began June 16, 1966, working with Drs. Van Derck Frechette and Daniel Rase in optical microscopy. While working, he continued his education part time, receiving a bachelor's degree in May 1972,

right before the first SEM arrived in January 1973. With all his knowledge from undergrad classes, he was a perfect candidate to operate the new SEM.

Votava has developed a breadth of knowledge of advanced microscopy. In

(Continued on page 8)

AU Glass scientists develop new biohazard technology

Dr. William C. LaCourse, professor of glass science, and Dr. Matt Hall, assistant professor of glass science, are working with Santanoni Glass of Alfred, NY, to develop a novel biohazard detector composed of ultra-fine metal wires



Bill LaCourse



Matt Hall

coated with nano-porous glass. The novel sensors will make it possible to detect airborne biohazards, such as anthrax, faster and in smaller quantities than any such device now on the market.

LaCourse, who founded Santanoni Glass, and Hall have obtained a \$100,000 National Science Foundation Small Business Technology Transfer grant they say will allow them to take the sensors from a prototype made in the laboratory to a commercial product.

The microscopic glass-coated fibers, so small as to be virtually undetectable,

will be ten or even 100 times more sensitive than current sensors, said LaCourse, explaining because of the nano-scale pores in the surface of the glass that coats the wire, one gram of glass has the surface area equivalent to half a football field.

While the most sensitive devices now on the market detect contaminants at a level of 10 or 100 parts per million, the vast surface area of the glass-coated wires makes it possible for them to detect amounts as small as one part per million in a sample, he said.

In addition, the novel devices should allow for "rapid, in-situ" analysis, which will allow a quicker response should a contaminant be detected. Currently used sensors

must be heated to release contaminants over time; with the glass-coated wire devices, however, an electric pulse sent through the wire releases all the contaminants into a gas chromatograph at once, so that the concentration can be measured more easily and more accurately.

The pores in the surface of the glass can be designed to permit absorption of a specific size of molecule, and the glass can be coated to attract a particular species, such as anthrax, nerve gas or other biohazards. Bundles of the glass-coated wires, each designed to detect a specific and separate contaminant, could be placed together around the perimeter of an area to be protected, immersed in water, or even sewn into clothing.

Research will be completed in the AU laboratories, and Santanoni Glass will produce the glass-coating for the wires.

Undergraduate Research to be Presented at Cocoa Beach Conference

Two presentations based on work by undergraduates in Dr. Alan Meier's group will be presented at the 29th International Conference on Advanced Ceramics and Composites in Cocoa Beach, FL, January 23-25, 2005.



Alan Meier

Meier is an assistant professor of metallurgy and materials engineering.

"Reactive Air Brazing of LSCoF and Alumina with Ag-V2O5 Alloys for SOFC Applications," by Nate Zink, Al Meier, K. Scott Weil, and John Hardy.

"Brazing of Porous Alumina to Monolithic Alumina with Ag-CuO and Ag-V2O5 Alloys," by Mike Lamb, Sam Camardello, Al Meier, K. Scott Weil, and John Hardy.

The work is based on senior thesis projects performed by Zink (BS, CE '04), Lamb (BS, MSE '04), and Camardello (BS, MSE '04). Zink is currently an MS student in the SoE.

The work was a collaborative effort with Dr. Weil and Hardy (CES alum) at PNNL who provided materials, helped

define a relevant research problem, and provided their technical expertise.

Earlier this year, three students from Meier's group presented the results of undergraduate research projects at the 106th Annual Meeting and Exposition of the American Ceramic Society in Indianapolis, IN on April 19 and 20th, 2004:

"Pressureless Infiltration of Porous Alumina Preforms with Ag-CuO and Ag-V2O5 Alloys", by Erin Schmutz, Wendy Breed*, and Al Meier.

"Surface Preparation of AlN for Metallization; Effect of Temperature on Surface Reactivity", by Christina Deitch, Andrew Crawford*, Al Meier, and Bob Fagan was presented by Andrew Crawford.

"Air Brazing of PZT with Ag-CuO, Ag-V2O5, Ag-PbO and Ag-PbO-TiO2 Alloys", by Erik Pavlina, Phil Monteleone*, Alan Meier, and Jim Weigner. (* indicates presenting author)

Also from this work, a paper entitled "Surface Preparation of Aluminum Nitride for Metallization: Effect of Temperature on Surface Reactivity", by Christina Deitch,

Andrew Crawford, Al Meier, and Bob Fagan has been accepted for publication in the journal "Materials and Manufacturing Processes." The work is a continuation of work previously published in the same journal ("Surface Preparation of Aluminum Nitride for Metallization", by Rob Campman, Dawn Mandich, Al Meier, and Bob Fagan, Materials and Manufacturing Processes 18 [6] pp. 877-890 (2003)).

Deitch (BS, CE '04) began her work on a summer research project funded by faculty discretionary funds and completed her work through a senior thesis/independent study project while Crawford (senior, GSE) was supported by a CEER Summer Fellowship.

Co-author Mr. Bob Fagan (CES '83) at Saint Gobain Microelectronics provided AlN substrates and technical expertise on microelectronics substrates. Co-author Mr. Jim Weigner at Lockheed-Martin provided PZT and other materials along with his technical expertise on piezoelectric materials and devices. Travel funds were provided by the Pam and Gene Bernstein Faculty Student Development Fund.

Fuel Cell workshop links Industry and University

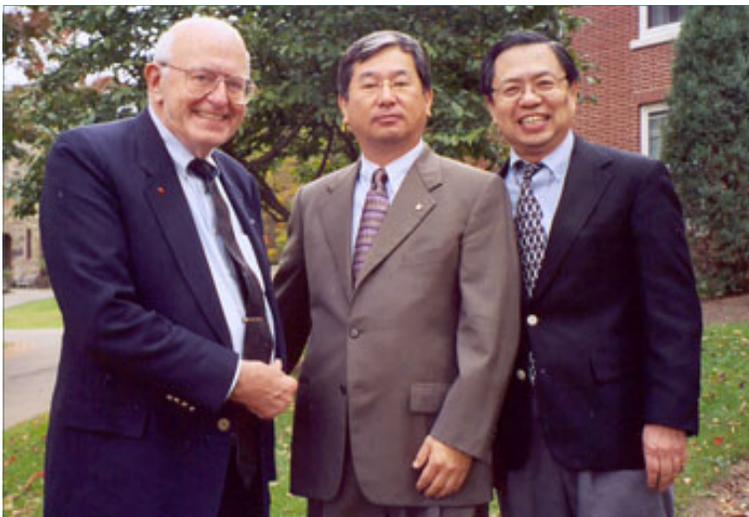
Alfred University's School of Engineering hosted a half-day workshop, "Materials Issues for Fuel Cells" on October 14th in the AU Nevins Campus Theater. The workshop was co-sponsored by AU's Center for Advanced Ceramic Technology (CACT) and the SUNY Research Foundation.

The 67 attendees represented ten New York State research universities and over twenty industrial and venture capital concerns. The workshop provided a lively forum for discussion on advances and networking opportunities among the scientists and engineers. The proceeding of the workshop has been prepared as a CD with distribution limited to workshop participants to promote further collaboration and to enable the preparation of proposals for joint research collaborations between university and industry scientists and engineers through funding secured from State and Federal agencies.

Individuals interested in inclusion in future workshops on this topic are invited to contact Marlene Wightman, director, Continuing Education/Conferences, wightman@alfred.edu.



Keynote speaker
Dr. Harry Tuller, Professor of Ceramics and Electronic Materials, Massachusetts Institute of Technology, presented an "Overview of Materials Issues Confronting Fuel Cell Technology Development."



From l-r: Dr. Richard Spriggs, McMahon Professor of Ceramic Engineering emeritus and McMahon Award lecturer 1988, Dr. Chong-II Park, 2004 McMahon Award Lecturer, and Dr. George Onoda, professor emeritus of ceramic engineering, McMahon Award lecturer 1986. The annual John F. McMahon Award lecture and luncheon preceded the afternoon workshop.

Biomedical Ethics Conference receives grant support

Dr. Subrata Saha, professor of biomedical materials and engineering science, has been awarded a grant of \$3,500 from the State University of New York for organizing the Third International Conference on Ethical Issues in

Biomedical Engineering, to be held on the AU campus from June 4-6, 2005.

The grant is part of SUNY's Conversations Across the Disciplines program. Complete conference information and call for papers has been posted at

<http://nyscc.alfred.edu/conferences/biomed/>.



Subrata Saha

Formula SAE

(Continued from page 2)

Current AU Formula SAE team members include Keenan Hansen, Paul Kiser, Jesse Karkheck, Peter Logar, Tim Hasselberg, Mark Ehman, Willie Brown, David

Vitulli, Andrew Aylward. Chris Sorokes, Stephen Peifer, Mike Hanes, Kevin Brucher, Chris Suozzo, Nick Martucci, Clive Bogel, Alex DiLorenzo, Alex Karp, Adam Morgan, and team advisor Dr.

Joseph Rosiczkowski, associate professor of mechanical engineering.

Chris Sorokes is a sophomore mechanical engineer

Short Courses for 2005: Enterprise Resource Planning - a new short course offering: June 20-21, 2005

Dr. Wilfred V. Huang, AU professor of management information systems, will offer an intensive training workshop for business executives, managers and engineers interested in developing an understanding of the potential for and impact of a corporate wide information system. This course can be used as an introduction to Enterprise Resource Planning (ERP) but also to experience the power of ERP after the integration.

Using SAP R/3 (version 4.7), the ERP software for Fortune 500 companies,

participants will learn by doing the ERP configuration from scratch. Each will create a company, a plant, general ledger accounts, and other facets in order to understand and appreciate the potential for an enterprise wide information system to increase the effectiveness and efficiency of the firm. Participants in this program will be exposed to SAP modules on Financial Accounting (FI), Cost Controlling (CO), Production Planning (PP), Material Management (MM) and Sales & Distribution (SD).

Complete information on this and other short course offerings can be found at <http://engineering.alfred.edu/cems/du/opat/shor/shor.html>. Custom-designed or on-site short courses to meet the needs of your organization are also available. Contact Marlene Wightman, director, Continuing Education/Conferences, wightman@alfred.edu.

Faculty News

Graduate student Nathan Empie and Dr. Doreen Edwards, associate professor of materials science and engineering, presented a poster at the Fall Materials Research Society (MRS) meeting; Nov. 29 - Dec. 3, 2004, Boston, MA; titled "Kinetics of Linear Defect Formation in Gallia-Doped Rutile." Their manuscript has been accepted for publication in one of the symposium proceedings associated with the meeting.



Doreen Edwards

Dr. Matt Hall, assistant professor of biomaterials and glass science, presented an invited review dealing with glass research at Alfred University for fuel cells and the hydrogen economy, at the ACerS Glass & Optical Materials Division Fall Meeting, Nov. 7-12, Cocoa Beach, FL.



Matt Hall

Dr. Subrata Saha, professor of biomaterials, received a grant of \$3,500 from the State University of New York (SUNY) as a part of their Conversations Across the Disciplines program for organizing the 3rd International Conference on Ethical Issues in Biomedical Engineering that will be held June 4 to 6, 2005. This conference is being co-sponsored by all

major bioengineering societies. Further information regarding this conference can be obtained from the website: <http://www.nyscc.alfred.edu/conferences>.

Saha was an invited speaker at the American Academy of Pain Management's (AAPM) 15th Annual Clinical Meeting; San Antonio, TX, September 9th to 12th, 2004. The title of this one hour talk was:

"Electromedicine: Facts or Myths?" The co-author of this paper was Dr. Ajay Kashi, a graduate student in the AU BMES program (Kashi is also a dentist). The talk was based on a chapter entitled "The Role of Electromedicine in Pain Management" written by Dr. Saha and Dr. Kashi for the next edition of the Handbook of Pain Management, to be published by AAPM and the CRC press.

Saha presented a paper "Role of Microstructural Variables on the Stress Generated Fluid Flow in Bone" at the 6th International Bone Fluid Flow Workshop, in Seattle, WA, Sept. 30 - Oct. 1, 2004. The co-author of this paper was Dr. R. H. Kufahl.

Saha also presented a paper entitled "Strengthening of the Bone-PMMA Interface" at the 5th Combined Meeting of the Orthopaedic Research Societies of Canada, USA, Japan and

Europe, held at Banff, Alberta, Canada, October 10-13, 2004.

Dr. Jim Shelby, John F. McMahon professor of ceramic engineering, reports his group just returned from the ACerS Glass & Optical Materials Division Fall Meeting, Nov. 7-12, Cocoa Beach, FL, where they presented 6 papers, including one from each of the 5 women graduate students in my group.

Shelby also just received a \$25,000 mixer for producing glass microsphere/polymer composites for use in his group's NASA project dealing with radiation protection for manned space flights. Two graduate students will be working on this project.

Shelby's graduate student Michelene Miller has recently produced the first cobalt colloids ever formed in an oxide glass. As a result, the glass is ferromagnetic, even though it remains an oxide glass. In a sense, this is a ferromagnetic glass-ceramic.



Jim Shelby



Subrata Saha

Votava

(Continued from page 4)

1980, NYSCC Dean Richard Ott re-assigned Votava to the University of Florida in Gainesville for a change of scenery, especially welcomed during Alfred's winter months, where he was able to learn the newest cutting edge technology on the University of Florida's recently purchased a TEM. In 1992, Ward again spent the winter semester below the Mason-Dixon line at the Southwestern Research Institute in San Antonio, Texas working with an Atomic Force Microscope (AFM).

Votava feels very privileged to have worked with the world-class faculty on unusual projects. For instance, Votava worked with Dr. Daniel Sass, an internationally recognized AU geology professor, to create an unusual "rock" calendar where he was assigned the job of taking the detailed pictures of various exotic fossils. Votava was also part of the team to study "moon rocks" from NASA's Apollo moon mission in 1969.

In 1993, Votava was the first Technical Specialist to win the prestigious SUNY Chancellor's Award.



Votava with the "original" SEM. Since it arrived in January 1973, constant upgrading has kept it state-of-the-art. Thanks, Ward!

Dr. James Varner, professor of ceramic engineering, has worked with Votava from the beginning and together they have solved many problems for different contracts and industries by observing fracture surfaces. Together they developed CES 252, Microscopy and Microstructural Characterization, encompassing optical microscopy and SEM imaging, Votava writing the lab manual for the SEM half. The construction of a CES 252 website, designed by Votava, greatly helps the students. "Ward always went beyond the minimum of what was

expected," says Varner, "Ward always put the students first."

Daily working with a SEM does not provide an environment of adequate sunlight - Votava refers to himself as a mushroom, living and thriving in the darkness. Nonetheless, everyday he's enjoyed coming to work; even if a machine malfunctioned, he looked forward to spending time in the lab. Varner credits Votava for the good condition of the instruments in the lab today. "He takes a personal interest in the machines," describing the quality of the lab as well as the personal commitment given to the students.

Votava has left AU with a world class, best-on-the-market, facility for scanning electron microscopy. Votava has also passed along some good advice to newly arrived Dr. Robert Hefner, saying that the key for running this lab, is used for thesis and contract research by many students, is the ability to listen for the "sounds of the lab". A student heard is an accident prevented. More good advice - be prepared for interruptions!

Engineers set the pace in swimming, tennis

Martin and Striker are All-American Swimmers

Ballard is Empire 8 Conference Tennis Player of the Year



Alicia Ballard
(senior, EE) Empire
8 Conference
tennis "Player of
the Year"

The Alfred University School of Engineering is proud of the diverse talents and interests of its students and of all of their achievements — especially outside of the class and lab! Special congratulations go to those who achieve at such a high level in both their sport and in academics.

Nearly 20% of our undergraduates compete in intercollegiate sports.

Alfred University competes in NCAA division III, a division limited to those colleges and universities giving only academic scholarships. AU is a member of the Empire 8 Athletic Conference and is affiliated with the Eastern College Athletic Conference (ECAC), which sponsors championships in 20 men's and women's sports at the Division III level.



Brandon Striker
(sophomore, CE)
All-American
Swimmer



Kevin Martin
(Senior, EE)
All-American
swimmer

AU ENGINEERING NEWS IS AN ABBREVIATED VERSION OF OUR ON-LINE NEWSLETTER. FOR COMPLETE NEWS AND UPDATES, GO TO <http://engineering.alfred.edu/newsletters/soe>

CONTACT US AT
AU SCHOOL OF ENGINEERING
2 PINE STREET
ALFRED, NEW YORK 14802-1296

EMAIL: SOENEWS@ALFRED.EDU