

AU Engineering News

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NCM9

The 9th International
Conference on the
Structure
of Non-Crystalline
Materials

11-15 July 2004

Corning, NY and
Alfred University

See story page 5

Seminar Rockets To The Top!

By Krista Carlson

Seminar is an important part of undergraduate education in the School of Engineering, bringing a variety of scientists and professionals to the Alfred University campus. Currently there are three undergraduate seminar programs: Undergraduate CEMS, Undergraduate ME/EE and Freshman seminar.

Freshmen in the CEMS program used to attend the same seminar as the upper classmen but now they attend a seminar designed for first year students as a valuable learning experience. Freshman seminar teaches new students about the different engineering programs, helps students with scheduling, and most importantly tries to teach them how to develop studying



Eggs away! Rocket launch tests the skills of our Freshmen engineers!

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Society of Glass Technology is Hot

By Krista Carlson

The Society of Glass Technology (SGT) set up their first official student chapter at Alfred University just last year. AU glass faculty suggested the idea to SGT due to an increased interest in the School of Engineering's glass engineering science program.

SGT members have worked with Science on Wheels; particularly with the glass station when children came to AU. Thank you notes from the children showed that a lot was learned - the children never knew "fibers could be made from glass" and thought the

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Science On Wheels Rolls Out A New Year Of Learning Fun

By Krista Carlson



Science on Wheels (SOW) is a program where AU students do science experiments with middle school children, benefiting both the youngsters being taught and also giving the university students a chance to develop valuable leadership skills. SOW has been very productive this year,

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Science on Wheels demonstrates bonding to a group of Alfred-Almond Central school 4th graders. Linking arms, the students find how rigid bonding makes for a strong material!

AU Engineers Honor Scholarship

Alfred University's Keramos and Tau Beta Pi inducted a total of 18 new members into their chapters on November 13, 2003.

Keramos is a professional ceramic engineering fraternity, established in 1902, whose purpose is to promote scholarship and character in the students, along with encouraging mental development and interest in the professional world. Admission into Keramos is based on academic achievement as measured by a student's GPA. Sophomores, juniors and seniors majoring in Ceramic Engineering, Glass Science, BMES, and Materials Science and Engineering are eligible. The AU Keramos chapter is advised by Dr. Matt Hall.

Tau Beta Pi is an engineering honor society incorporating all fields of engineering. It is the second oldest honor society in the country and was founded at Lehigh University in 1885. Its purpose is to recognize students possessing a distinguished scholastic record and exemplary character. Undergraduate students in their junior year must be in the top 1/8th of their class and in their senior year in the top 1/5th of their class to be eligible for membership. The AU Tau Beta Pi Chapter is advised by Dr. Scott Misture.



Keramos inductees (L-R): Front Row: Andrea Jaromin, Elise Hejna, Melodie Schmitt, Melissann Ashton-Patton, Janelle Villone. Back Row: Patrick Wilson (Junior, MSE), Christopher Suozzo, Mark Naylor (junior, GES and A&D), Christopher Gaglio (soph, MSE), Tim Nedimyer (soph, CE), John Rich (soph, MSE), Brian Riley (soph, GES), Katherine Rider (soph, CE), Dan Steele (soph, CE), Aaron Hedlund (senior, MSE). (Kevin Ball (senior, CE), Nick Coleman (senior, GES) and Ryan Troyer (soph, CE) were not present)



Tau Beta Pi inductees (L-R): Melodie Schmitt, Amanda Youchak (junior, GES and A&D), Andrew Crawford, Stephen Sanford (junior, MSE), Kathryn Geotschius (soph, BMES), Greg Kajfasz (junior, ME), Christopher Suozzo (junior, undecided), Matthew Johnson, Janelle Villone, Heidi Schulze (junior, MSE) (J. Dustin Broderick (senior, ME) was not present)

New Biomaterials Group at AU

By Steve Florczyk

The Alfred Biomaterials Society (ABS), a student chapter of the Society for Biomaterials, is AU's newest engineering organization. ABS already has a membership of 17 graduate and undergraduate students. The society's faculty advisor is Dr. Matt Hall.

ABS co-sponsored the Biomedical Engineering in NY (BioNY, see page 5) conference. Several ABS members attended BioNY conference and presented papers or posters

Posters were presented by Ashleigh Cooper (MS student, BMES), "Antibody Absorption of Treated Glass Surfaces for a Miniature ELISA System";

V. C. Ram Mohan (MS, BMES), "Profiliometric Roughness Analysis of Metal TMJ Prostheses"; Debamitra Dutta (PhD, Ceramics), "Processing of Controlled Porosity Ceramic-Polymer Composites Using Rapid-Prototyping" and "Processing of Moderate Strength Open Celled Porous Polymer Composites"; and Nakul Karkare (MS, BMES), "Laboratory Investigations to Improve the Life of Cemented Arthroplasties".

Presentations were given by V. C. Ram Mohan, "History of Temporomandibular Joint Implants"; Gary Del Regno, "Determination

Methodologies for Solubilities of Calcium Phosphates"; and Nakul Karkare, "Growth Factors in Bone Substitute Materials: A Review". Research in progress was presented by Steve Florczyk (senior, CE), "Manufacture of Nanoparticles from Bone"; and Nakul Karkare, "A Method for Better Interdigititation of Bone Cement into Bone" and "An Improved Device for External Fixation of Bones".

ABS is AU's first biomaterials organization and it works closely with the Biomedical Materials Engineering Science program. Steve Florczyk is a senior in ceramic engineering.

Glass is Hot!

(Continued from page 1)

"explosion of the Prince Rupert drop was awesome!" They also got to look inside the glass furnace (with a protective shield) - a lot hotter than an oven at home! They learned how different elements produced different colors in the glass and about the importance of annealing. Each child also received a glass "AU" and learned how they had been made by SGT's members.

Last spring, SGT sponsored a field trip to the Guardian float glass plant in Geneva. Just recently the student chap-

ter had the pleasure of having dinner with former president of SGT, Dr. Adrian Wright. Dr. Wright was interested in meeting the AU SGT students after hearing vice-president Jake Amoroso (senior, GES) talk about his Co-op experiences while on Study Abroad at the University of Sheffield last semester.

Field trips planned for the upcoming semester include a trip to the Corning Glass museum and the Philips light bulb plant.

Krista Carlson is a senior in glass engineering



SGT members preparing glass ornaments for Science on Wheels: Krista Carlson (senior, GES) stamps hot glass while Mark Dey (senior, GES) pours. technical specialist Jim Thiebaud looks on.

Science on Wheels

(Continued from page 1)

already visiting 4th graders at Alfred-Almond Central School. SOW will travel to Wellsville in December.

The team demonstrates science and engineering concepts at several experiment stations set up in the visited school. AU Students at each station do the experiment with the kids and then explain them in terms they can understand. For example in the liquid nitrogen group, changes in bonding in a rubber ball before and after it is dipped into the liquid nitrogen are explained by having the children link hands. Children hold hands and move around to simulate bonding in the rubber ball before it is dipped into the liquid nitrogen. They then link elbows to show how the bounds are now a lot stiffer after it has been dipped, not allowing the ball to bounce as it had done before. Experiment stations include:

Liquid Nitrogen - how temperature affects bonding and demonstrate superconductivity.

Cornstarch putty and slime making - a very popular and messy spot! The team shows how mixing different materials can form materials with different properties



A "chalk-talk" helps explain the principles of Mechanics.

Mechanics - lever arms and other mechanical devices are demonstrated.
Laser - students see the optical properties of laser light

Chemistry - The team shows how different color flames are produced by burning different materials plus other experiments with chemicals reactions.

Trips to other schools are in the works for next semester. SOW is also trying to bring grades 4-6th here from different schools for engineering week in February. Last year, Alfred-Almond students visited and the children had the opportunity to pour glass and watch fibers being drawn from the fiber draw tower.

SOW plans to help with Dr. Carl Boehlert (Asst Prof, MSE) in his outreach effort for high school students and in the Scanning Electron Microscope Education program, another outreach program where non-engineering majors, high school students, and teachers come to Alfred University to use the scanning electron microscope (The SEMED program will be profiled in the January 2004 Newsletter. Meanwhile, you can check out the SEMED program at <http://semmed.alfred.edu>.

Microscope - microscopic organisms are examined under a microscope and the team explains the SEM.

Van DeGraff generator - demonstrate the effects of electricity.

Materials - samples of ion exchanged glass, fiber glass, space shuttle tile, and a metal that goes back to its original shape after being heated are examined to demonstrate the different properties and uses of materials.

AU's 2003 Materials Science Day

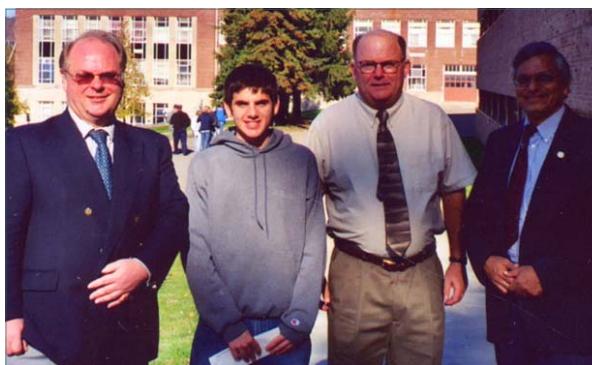
By Rebecca Cochran

The Alfred University School of Engineering hosted the annual Engineering and Materials Science Day on October 30, 2003. This event is an opportunity for area high school teachers, guidance counselors, and students to learn about the engineering programs offered at AU and to compete for valuable scholarships and prizes. Student attendees are selected for their interest in an engineering career. Dr. Alastair Cormack, Interim Dean for the School of Engineering, and Mr. Scott Hooker, Director of Admissions, gave the welcoming remarks.

Following the opening remarks, all of the students took the School of Engineering Dean's Scholarship Exam. A \$1000 renewable scholarship towards AU tuition is rewarded for the highest score in either Electrical/Mechanical Engineering or Ceramic Engineering/Materials Science. In addition, the first place winners also receive a cash prize of \$50. Awards are also given to second and third place finishers in both portions of this exam as a cash prize of \$25 and \$15 respectively. While the students were taking the



Stacie Woods (Canisteo HS), Electrical/Mechanical Engineering Scholarship winner, with Dr. Arun Varshneya, her teacher Davette Carpenter, and Dean Cormack.



Brian Willsey (Hornell HS), Ceramic Engineering/Materials Science Scholarship winner, with Dean Cormack, Guidance Counselor David Cregan, and Dr. Arun Varshneya.

exam, their teachers and guidance counselors had a demonstration of the Scanning Electron Microscope Program (SEMED) for high school teachers and

students by Dr. Carl Boehlert (Asst. Prof., MSE).

After lunch, AU faculty and students presented engineering lab tours and demonstrations. These tours included the Scanning Electron Microscope, glass and optical fiber demonstrations, polymeric materials, computer modeling, electrical engineering laboratory, and the mechanical engineering laboratory.

Concluding remarks included the announcement of this year's scholarship winners: Stacie Woods (Canisteo HS) in Electrical/Mechanical and Brian Willsey (Hornell HS) in Ceramic Engineering/Materials Science. For Electrical/Mechanical, the second and third place winners were Joseph Pecoraro (East Rochester) and Mike Calarco (Jamestown HS). The second and third place winners in Ceramics/Materials Science were Cathy Walker (Wayland-Cohocton) and Daniel Mauro (Alfred-Almond CS).

Rebecca Cochran is a senior in ceramic engineering.

Off-campus Opportunities Expand Engineering Horizons

By Gabrielle Gaustad

AU's undergraduate engineers enjoy great opportunities to broaden their understanding through off-campus work

Co-op Profile: Holly Moschiano

Holly Moschiano (senior, GES) is currently on Co-op at IBM Microelectronics Division's East Fishkill Facility (Hopewell Junction, NY) working on the materials aspects of the substrates that go into the Z, X, I, and P series IBM servers. The Z series has been touted as one of the world's most sophisticated enterprise servers. Her division is also involved with making processors for such college favorites as Sony's PlayStation, Nintendo's GameCube, and the next generation Microsoft X-box.

Moschiano's favorite part of working at IBM is the feeling of accomplishment when things are running smoothly. She also finds it very interesting to see the entire manufacturing

(Continued on page 7)

Study Abroad: Quist-Chaffee at the University of Sheffield

Logan Quist-Chaffee spent the Spring 2003 semester at the University of Sheffield in Sheffield, England. He took several engineering classes including Optical, Magnetic and Electrical Properties of Materials, Introduction to Materials, Composites and an Aerospace Engineering class. Although the classes Quist-Chaffee took were engineering classes, the course structure and the way classes were taught was different from the way classes are taught in AU.

There are no tests and few papers. In British universities, a student's entire grade is based on the final examination: a 70% or above is an A and a 40% or above is a passing grade.

At Sheffield, Quist-Chaffee lived in a "hall of residence" on

(Continued on page 7)

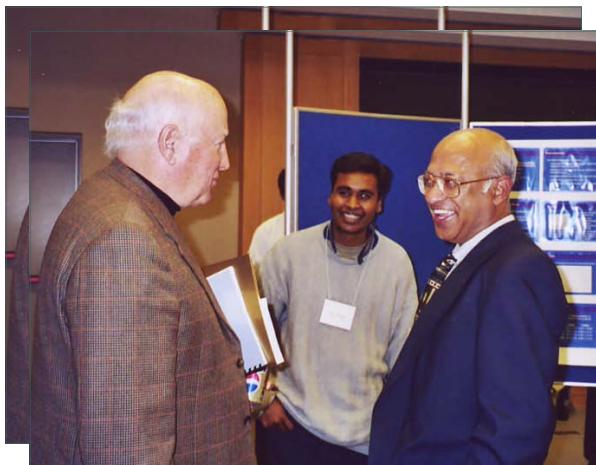
BioNY Conference draws over 100 to AU

The Biomedical Engineering in NY Conference was held October 31st through November 2nd, 2003 at Alfred University. The conference was organized and chaired by Dr. Subrata Saha, Professor of Biomaterials and was attended by approximately one hundred researchers, students, and clinicians. Biomedical Engineering in New York State was represented by Alfred University, University of Rochester, University of Buffalo, SUNY at Stony Brook, Syracuse University, Rochester Institute of Technology, and Rensselaer Polytechnic Institute.

The meeting featured a keynote address from Dr. Russell Bessette, Director of New York State Office of Science, Technology, and Academic Research (NYSTAR) on the future of biomedical engineering in New York State. Discussion of a Bioengineering Alliance of New York was held over lunch on Saturday. Dr. Sam Hulbert (AU PhD '64), the founder of the Society for Biomaterials, and the President of

Rose Hulman Institute of Technology, gave an informative and enjoyable talk on the status of artificial organs following Saturday evening's dinner.

Sessions included: Biomedical



Dr. Sam Hulbert, President, Rose Hulman Institute, and Dr. Saha enjoy the evening poster session,

Engineering Programs in NY, a brief overview of several programs in the state; a Panel Discussion on the Future of Biomedical Engineering: Industrial Perspective; Tissue/Cellular Engineering; Biophysical Modeling; Biomaterials; Bioengineering Applica-

tions and Education; and Research in Progress.

A student poster session was judged by a group of faculty and research scientists with awards given for the best posters. The award winners were: first place, Evren Azeroglu, "Effects of Endocardial Infarction on Epicardial Deformation," Dept. of Biomedical Engineering, SUNY at Stony Brook; second place, Joseph Dorsheimer, "Surface Analysis and Electrical Characterization of Gel-Like Channels for Microfluidic Application," AU School of Engineering; third place, Katherine Rider, "Differential Staining of Bone in Formalin-Fixed, Paraffin-Embedded Tissue: The

Good, the Bad, and the Ugly," AU School of Engineering; and honorable mention, Isidore Madou, "A Computer Model of N- and C-Type Inactivation in Voltage-Gated Potassium Channels," Computer Science and Engineering, SUNY Buffalo.

NCM9: The 9th Int'l Conference on the Structure of Non-Crystalline Materials

Dr. Alastair N. Cormack, Professor and Dean of the School of Engineering, is chair of the organizing committee of the 9th International Conference on the Structure of Non-Crystalline Materials (NCM9), scheduled to be held in Corning and Alfred, NY from 11-15 July 2004. The meeting will be based in Corning, NY, but the poster sessions will be presented at Alfred University. NCM9 continues the tradition started in Cambridge, England in 1976. Recent



Alastair Cormack

meetings in the international series were held in Sardinia, Italy (1997) and Aberystwyth, Wales (2000).

Topics center around the structure of non-crystalline materials and generally include non-periodic structures of any kind: short and medium range order in glasses, structural inhomogeneities leading to phase separation and atomic arrangements in the intergrain region of nanophase materials. Session topics also include experimental techniques

that probe the structure of non-crystalline materials and investigations of static and dynamic disorder phenomena and associated relaxations.

Other members of the organizing committee are Bruce Aitken (Corning Inc.), Alexis G. Clare (AU), James E. Dickinson (Corning Inc.), Hong Li (PPG), Sabyasachi Sen (Corning Inc.), and Arun K. Varshneya (AU).

For further information please go to NCM9 website, ncm9@alfred.edu, or e-mail to wightman@alfred.edu.

AU Engineers active at ACerS Fall Glass Meeting

The Glass and Optical Materials Division of the American Ceramic Society met for their annual Fall Meeting at the Radisson Hotel in Corning, NY, October 12-15, 2003. The current chair of the Division is AU graduate Dr. Jeffrey Kohli (AU PhD '91, now with Corning Inc.). The meeting, consisting of three symposia - Optical Materials, Glass Science, and Glass Technology - was attended by over 200 people from the international technical and scientific community.

Alfred University was well represented by faculty, students and post-doctoral researchers from the School of Engineering. Professor Emeritus L. David Pye organized a special luncheon so that AU students could meet with prestigious Corning scientists such as S. Donald Stookey,

Roger Araujo and David Morse. About eight grad students attended; SoE glass professors Dr. Arun Varshneya and Dr. Thomas Seward joined the group.

In the Glass Science symposium, Dr. Alastair Cormack (Professor and Dean, SoE) and grad students Jincheng Du and Todd Zeitler presented three papers. Dr. Xianglong Yuan, Cormack's recent grad student (now a post-doc with Dr. Lynn Hobbs at MIT), presented three papers. Also presenting papers in this symposium were grad student Doug Rapp with Dr. James Shelby (Prof, GES) and graduate student B. Rangarajan with Varshneya. Grad student Elizabeth Birtch and Shelby presented a paper in the Optical Materials symposium.

Seward, Dr. William LaCourse (Prof, GES) and Margaret Rasmussen (Director, AU's Paul Vickers Gardner

Glass Center) gave invited presentations. Grad student Brian Wheaton presented a paper in this session with Dr. Alexis Clare (Prof., GES). All three sessions in the Glass Technology symposium were organized and chaired by AU faculty.

Dr. William Carty (Prof, CE) and Dr. Simon Rekhson (Cleveland State University) organized the session on "Glass Forming/ Glass Melting" and Seward teamed with Clare to organize the session on "Process Modeling and Measurements." Papers by Drs. Michael Dolan and Scott Misture (Assoc. Prof, MSE); Dr. Ungsu Kim and Carty; and grad student Christopher Tournour with Shelby rounded out the AU presentations.

7th Int'l Conference on Advances in Fusion and Processing of Glass

Over 140 participants from 14 countries attended the 7th International Conference on Advances in Fusion and Processing of Glass held at the Crowne Plaza Hotel (Rochester, NY) July 2003.

The conference was organized and co-chaired by Drs' James R. Varner and Thomas P. Seward, professors in the School of Engineering, and Dr. Helmut Schaeffer, director of the Research Association of the German Glass Industry (HVG) and the German Society of Glass Technology (DGG). Proceedings will be published in the American Ceramic Society's Ceramic Transactions series.

Glass experts from industry and academia exchanged ideas, experimen-

tal results and statistical data on worldwide commercial glass melting and processing. Invited speakers from Finland, Germany, the Netherlands, Russia and the United States addressed varied topics: advances in the glass melting process, glass melt properties, materials for glassmaking, control of redox dependent properties, computer modeling and process control, and secondary processing. There were more than 50 oral and poster presentations.

The conference concluded with a one-day workshop on "Evolutionary and Revolutionary Strategies for Keeping Glass Viable through the 21st Century." The workshop was chaired by Seward,

CGR director, and Glass Manufacturing Industry Council executive director Michael Greenman. The workshop was sponsored by GMIC, the CGR, and the US Department of Energy Industrial Technologies Program (DOE-IPT).

Dr. L. David Pye, professor emeritus of glass science and founding director of the CGR, inaugurated this series of international conferences on glass in 1988 at AU. With the strong support of the HVG and the DGG, the conference series now alternates between the United States and Germany. The eighth conference in the series will be held in Germany in 2006.

GlassResearcher to be Published by American Ceramic Society

The NSF Industry-University Center for Glass Research and the American Ceramic Society (ACerS) have entered into an agreement to publish the **GlassResearcher** as a quarterly supplement in the ACerS Bulletin, beginning in January 2004. ACerS, its Glass and Optical Materials Division, and CGR expect this joint effort will better inform a broader audience about important scientific and technological advances in glass.

CGR was established in 1985 with membership representing all segments of the glass industry. The lead site is located at the New York State College of Ceramics at Alfred University, with sites for research on glass surfaces, interfaces and coatings at the Pennsylvania State University and research on refractories used in glassmaking at the University of Missouri at Rolla.

The **GlassResearcher**, CGR's technical review journal, began twice yearly publication in 1990. Circulation has grown to an international distribution of over 7,000 copies per issue. By agreement with ACerS, the CGR's editorial review board will continue to select topics and identify authors for each issue following their established policy.

Faculty Briefs

Dr. Doreen Edwards (Asst Prof, CE) presented two invited talks at the 55th Pacific Coast Regional and Basic Science Division Meeting of the American Ceramic Society (Oakland CA, Oct. 19-22, 2003) titled "Structure-Property Relationships in Beta-Gallia Rutile Intergrowths" and "Fluorite-Related Indium-Containing Oxides".

Edwards also presented the second talk at the University of Illinois Ceramics Graduate-student Seminar Series, on October 23. She had a chance to visit with several AU Alums now grad students at U of I with Dr. David Payne. The students - Alp Seralogalou, Miye Kurata and Jim Carroll - are all doing well.

Dr. Wallace B. Leigh (Prof., EE), Wei Liu, and Zain Horning will present "Use Of A Block Autorouter and Cell Library for Analog CMOS" at the 3rd Annual NYS Conference on Microelec-



Doreen Edwards

tronics Design (Columbia University Jan 14-15, 2004).

Dr. Subrata Saha, professor of Biomaterials, published an Op Ed article "The Biomedical Industry and the Need for Tort Reform" in the July/August 2003 issue of the IEEE Engineering in Medicine and Biology Magazine (pp. 154-155). The coauthor of this article was Pamela Saha MD, a staff psychiatrist at the Jones Memorial Hospital, in Wellsville, NY. Saha is working towards forming a Consortium for Tort Reform at AU to address this urgent need of our society.

Saha presented a seminar to the combined meeting of the local chapters of the ASME and ASM at Wellsville on November 13 on his research results on the mechanical properties of bone and its replacement materials.



Subrata Saha

Dr. Xingwu Wang (Prof., EE) and co-authors Peter Lubitz (NRL) and Jack H. Linn (Intersil), have contributed the paper,

"Nano-magnetic FeAl and FeAIN thin films via sputtering", to "Ceramic Engineering & Science Proceedings", Vol. 24, Issue 3, 2003, the proceedings of the 27th International Cocoa Beach conference on advanced Ceramics and Composites. Wang is also lead author on the paper "Nano-magnetic Coatings on Metallic wires," presented at the 52nd International Wire And Cable Symposium, Nov. 17-20, 2003 in Philadelphia, PA. Co-authors on this work are R.E. Miller, Yuandan Liu (AU); Robert W. Gray, Jeffrey L. Helfer (Biophan Technologies Inc.); Richard W. Nowak, and Kevin P. Mooney (SUNY at Buffalo).



Xingwu Wang

Study Abroad

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campus. Consisting mainly of singles, with the exception of a few doubles, each "hall" also has at least one pub on the premises. In his free time, Quist-Chaffee would spend time running, going to the gym to work out or playing games with other international students. Movies were also available on campus or "in hall" each week. On some nights, he would head down to one of the pubs "in hall" or in Sheffield to relax with some friends.

Quist-Chaffee joined Sheffield's Global Span Club, organizing coach trips to cities and attractions throughout the UK. He had the opportunity to visit York, Windsor and Stonehenge for the day. The club also took a weekend trip to Edinburgh, Scotland.

Quist-Chaffee highly recommends study abroad at Sheffield.

(The Study Abroad program is available to all AU students. Within the AU School of Engineering, the CE, GES and

MSE programs currently have arrangements with ceramic engineering and materials science programs abroad so students can spend a semester away without worrying about falling behind in their degree requirements. The SoE's Study Abroad Committee is working toward similar arrangements for BMES, EE and ME programs.)

Co-op

(Continued from page 4)
cycle from raw material to finished product. She has made many great contacts for after graduation, some with AU alumni in the Fishkill area. A great aspect of Co-op is to gain good experience on your resume with the current struggling economy.

She has found that Co-op is an excellent opportunity to learn about the "real-life" work environment, including problems and set-backs.

Moschiano's least favorite part of Co-op is when things don't go quite as planned - there are always unforeseen set backs to any large project. Different from on-campus, where if it doesn't work then you can just go home and not deal with it; in the work environment it's important to understand why things don't work and then work on it until it's fixed. Being submerged in work that has value and is important to a company has really changed her perspective on ap-

proaching work and learning.

Working at IBM has been a great experience for Moschiano and she would recommend it to anyone!

(A Co-op is a credit-bearing paid experience that consists of full-time work in industry or with a research organization. For more information, go to alfred.edu/cdc/Student.htm.)

Gabrielle Gaustad is a senior ceramic engineer.

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Team Grimace Back From Competition

By Dustin Broderick

"Team Grimace" - Dustin Broderick (senior, ME), Bryan Crandall (BS ME, '03), and Joe Goodsell (senior, ME), has returned from MechWars -7, held October 24-26 in St. Paul, MN. The team made the over 2000 mile journey as part of their senior project. Battle-bot "Grimace" is still functional; although it did receive a few "character building" dings.

Over 120 competitors were on hand, 25 in Grimace's middleweight (120 lb) division. The first opponent drawn for Grimace was "Stanley", an agile, wedge-style robot and last year's champion. After an intense battle and highly debated final decision, the victory was given to Stanley. Repairs followed, as the match proved to be devastating for the Grimace's spinning blade weapon.



Broderick, Goodsell and Crandall prepare Grimace for Battle at MechWars-7.

The second match proved that driving skill, maybe more than robot design, has a significant effect on the result of the match. To our dismay, Grimace found its way into an arena hazard, a 25 lb bar rotating at 2500 rpm which ultimately sent Grimace packing and gave the victory to "G1". The competition was a truly unique educational experience for the students!

Broderick presented the results of the team's efforts at the 4th Penn-York conference on Undergraduate Research at Canisius College in Buffalo with a talk entitled "Physics of Robot Combat."

Seminar

(Continued from page 1)

skills. They also have had several small group sessions with upper classmen to offer advice about school and adjusting to campus life.

Freshman seminar students are given projects to promote creative thinking and build group skills. Past projects included an egg drop (fun but messy) and building a boat that to take several people across the McLane pool (fun and wet!).



Freshman rockets on the launch platform; designs as diverse as the student teams that built them!

Program director Dr. Linda Jones (Professor, CE) decided this year to put a twist on the traditional egg drop. Students built rockets that held their pilot, the egg, and had to have it survive the trip. Students were given a rocket kit to assemble but had to come up with their own parachute design and cushioning system for the egg. Students could win by having their rocket go the highest, coming the closest to a target, or by just having their pilot survive.

Beginning with the spring semester 2004, the undergraduate engineering seminars program will be restructured. All freshman engineers will participate in Freshman Seminar (EGR 171); all other SoE students will attend Undergraduate Seminar (EGR 371).



Eggs away! Rocket launch in front of eager spectators.