

ENGINEERING News

Kazuo Inamori School of Engineering
Alfred University

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AU XG Racing takes 1st in California competition Students take on industry design teams

Extrême Green Racing (XGR) is the "Formula 1" of downhill or gravity racing. The exclusive competition features some of the world's most prestigious auto manufacturers and design teams - Bentley; Mazda; Aston Martin; Porsche Design; and Greg Vehlies Racing competed in the most recent trials held in Lake Tahoe, CA. Alfred University, Tonji University (Shanghai) and the Art Institute (Colorado) were educational competitors.

In the summer of 2006, Stephen Peifer (BS ME 2007) and Mike Hanes (BS MSE 2007) were "Team Primal", finishing 6th on a grueling downhill at the treacherous Tuna Canyon Road in Malibu, CA. Team Primal was the first "un-sponsored" university team to compete. XGR has also been called "Extreme Gravity Racing."

While still on campus last spring, Peifer turned the project into an official University club, with Dr. Joe Rosiczkowski, associate professor of mechanical engineering, acting as faculty advisor. The club has completely redesigned the vehicle for competition - "It's a whole new car, a new design," Peifer said. Although similar in looks to the



AU Extreme Green Racing at Lake Tahoe:
Front row (l-r): Elizabeth Larsen, Karl Urban,
Stephen Peifer; second row (l-r): Bill Lain,
Jamie Lain, Joseph Kovac; back row (l-r)
Andrew Aylward, David Vitulli.

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AU highlighted in BusinessWeek for technology transfer



BusinessWeek magazine has included Alfred University in its group of twelve small universities with big research and technology transfer impact!

To read about all twelve go to

http://images.businessweek.com/ss/07/10/1017_innovative_universities/index_01.htm

Pye installed as American Ceramic Society President

Dr. L. David Pye, emeritus professor of glass science and former dean, was installed as president of the American Ceramic Society on September 17, 2007, in Detroit, MI. Pye is also an Alfred University alumnus (BS CE 1959, PhD ceramic science 1968).

A long-time member of the faculty as a professor of glass science, Pye was dean of the NYS College of Ceramics during its centennial celebration in 2000. He was founding director of the National Science Foundation Industry-University Center for Glass Research at the NYSCC in 1985. He was instrumental in creating the PhD program in Glass Science at Alfred University, unique in the United States.

Pye has previously served ACerS as chair of the Glass and Optical Materials Division, a trustee, and most recently as chair of its Globalization Task Force study group. He is the most recent in a string of AU alumni and faculty members who have served as president of the American Ceramic Society since its founding 109



Dr. L. David Pye

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CDC presents 3rd annual Engineering Career Fair October 4, 2007

Business was brisk at the Alfred University Career Development Center (CDC) as engineering undergraduate and graduate students polished their resumes and personal presentations in preparation for the Engineering Career Fair, noon-4pm, October 4, 2007. Forty-five companies were represented, necessitating the almost complete take-over of Powell Campus Center for the event. The number of companies has grown steadily over the past few years, up from just 20 in 2005!

All engineering students were encouraged to attend, not just those approaching graduation. Over half the companies were looking for candidates for internships and Co-op, too. And then there were the many door prizes contributed by the companies to win!

By 1 pm, well over one hundred students of the nearly 300 total attendees had already arrived and an excited buzz of talk enlivened the atmosphere as contacts were made and the discussions were well underway. Excitement was also sparked by the door prize drawings throughout the afternoon.

New this year is the evening networking event at the CDC; participating companies could host their candidates and also the engineering faculty members for a casual evening to get to know each other better. Students were invited by "golden ticket" (five from each participating company) - perhaps more highly valued than the door prizes! The fascinating architec-



At the 2007 CDC Career Fair, a diverse group of 45 potential employers met with students. Pictured (l-r) Noble Environmental Power, the FBI and Corning Inc.

ture of the Steinheim Castle gave the evening a "house party" atmosphere that all enjoyed.

Twenty-four companies held on-campus interviews the following day. While the evaluations have yet to be tabulated, it is safe to say that the career fair and networking event were an overwhelming success.

Now, who did win that plasma TV?



At the Networking reception, (l-r) seniors George Keith (GSE); Bradley Grillo (ME); Mark Roscup (CE); Dan Gaede (MSE); and Byron Duke (ME).

Materials Advantage News

Materials Advantage kicked off the new academic year with its highly successful 2nd annual Engineering BBQ to welcome both freshman and returning Engineers to campus. Earlier in the year, Senior CE Victoria Knox represented AU's chapter at an American Ceramic Society planning meeting in Cleveland in May. Materials Advantage officers for 2007-

2008 are Knox, Eric Walton (junior MSE), Matt Williams (senior CE) and Mike Christofferson (senior, MSE). Knox also attended MS&T 2007 in Detroit in September. AU's chapter did not compete in the ceramics mug drop or putter competitions this year, due to the early date of the meeting, but hope to compete again in 2008!

The Material Advantage Student Program provides a single low-cost membership that provides access to the materials science and engineering professional's most preeminent societies: the American Ceramic Society, the Association for Iron & Steel Technology, ASM International, and The Minerals, Metals and Materials Society.

XGRacing

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AU's 2007 XGR racer boasts advanced aerodynamics and sophisticated suspension.

vehicle he and Hanes built, "It's a lot more sophisticated, and we optimized the

aerodynamics."

This year's trial competition was on a shorter course (about 75 meters), each team also having to demonstrate the vehicle "efficiency" – measured by how high up the slope the vehicle could travel after crossing the finish line. (Imagine the track as a tilted oval, with the finish line at the base.) AU won on both time and efficiency!

Finish times in this year's trials :

1. Alfred University - 12.511 s (also won Most Efficient)
2. Tonji University (China) - 12.865s
3. Bentley - 12.865 sec (Tonji finished better in efficiency)
4. Art Institute (Colorado) - 13.082s
5. Aston Martin - 13.616 s
6. Greg Vehlies Racing - 14.969 s
7. Mazda (time not available)

The 12-member 2007 Alfred

University XGR team includes:

Andy Aylward (senior ME); grad student Jamie Lain (BS ME 2007, now with Dresser-Rand); Karl Urban (senior ME); Dave Vitulli (senior ME); Elizabeth Larsen (junior ME); and Joe Kovac (senior ME). Students from Alfred State College's mechanical engineering technologies curriculum are also participating in the club. Peifer, also with Dresser-Rand, returns on weekends to work with the team.



ACers Taps Wightman for Employment Center

Marlene Wightman, Director of Continuing Education and Outreach, was asked by the American Ceramic Society to assist with running the ACerS Employment Center at September's MS&T meeting in Detroit.

Working with Marsha Stout and Tricia Niswonger from ACerS, Wightman coordinated the connection of job seekers with potential employers seeking anything from entry-level BS engineers to PhD scientists. Wightman also ran a great team of AU undergrad assistants in the Center, a job she really enjoyed!

Wightman organizes all exhibition materials for the Inamori School of Engineering and the Center for Advanced Ceramic Technology.



Engineers in AU Sports - Engineers star in Football, Tennis, XC, Swimming and Diving!

AU Football ranked 14th in nation

Alfred University football is racking up an impressive 2007 season, undefeated in both Empire 8 and non-conference play. Engineers making significant contributions to this season's success include Senior (EE) place kicker Chris Reynolds, senior (ME) tight end Kasey Kryder, senior (MSE) wide receiver Ben Stanton and junior (ME) nose guard Joe Yesesky.

AU women's tennis team plays in NYS championships, Butterfoss and Lewis win Empire 8 honors

AU made its first appearance at the NYS Championship tournament since 2004, with the help of engineers Jodie Butterfoss (senior CE) and Elana Lewis (junior MSE).

Lewis, and her first doubles partner senior Katie Calfee earned Empire 8 Second Team honors in doubles. The duo compiled a 10-1 record in doubles play,

including a stellar 7-1 record in Empire 8 matches. Calfee earned First Team All-Star honors in singles competition.

Butterfoss was given honorable mention for singles after finishing 6-4 in second singles this year. A four-time all-Empire 8 selection (First Team three times) Butterfoss was the conference Rookie of the Year in 2003 and in 2004 was given honorable mention by the NYSWCAA in singles and doubles. She has a 38-8 career singles record.

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"Infinity Project" enhances learning in ELEC 106 - Discoveries Lab

Many freshman engineers get their first technical experience in ELEC 106 - Discoveries Laboratory, a hands-on laboratory in which freshman electrical engineers and all "undecided" engineering students will build motors, generators, lasers, solar-cell power generators, programmable robots and more.

New this year, Dr. Xingwu Wang, professor of electrical engineering, has enhanced the ELEC 106 curriculum by incorporating the innovative "Infinity Project," a computer-based exploration of engineering through a variety of modern digital technologies. Students innovate, create, design, experiment and learn all along the way.



Using Infinity, each student learns firsthand how to use math and science to design and create a wide variety of new and exciting technologies - the Internet and cell phones, digital video and movie special effects and electronic music - and learns how engineers use advanced development tools in everyday engineering work. Students learn to use mathematical and computational tools in designing,

developing, testing, debugging, and finally producing a finished product that works.

The Infinity Project was launched in 1999 a fun way to bring math and science to life for students through engineering. Texas Instruments provided key initial support and significant continuing sponsorship. Additional support has come from National Instruments, Tyco Electronics, the US Department of Education, the National Science Foundation and the Texas Engineering & Technical Consortium.



Dr. Xingwu Wang

Snyder presents McMahon Award Lecture

Dr. Robert L. Snyder, professor and Chair of the School of Materials Science and Engineering at The Georgia Institute of Technology, presented the 2007 John F. McMahon Award Lecture on October 25th in Roon Lecture Hall, Science Center. His lecture, titled "The New World of MSE: Nano and Bio Technology," explored the impact of recent



Dr. Robert L. Snyder

leaps in understanding in the use of surface free energy as a tool in materials manipulation and in understanding of the genetic code of the entire biosphere which are underway; creating a tidal wave of information that is going to transform our technology to the core. For a complete abstract of his

talk, go to http://engineering.alfred.edu/lectures/mcmahon_lecturer.html

The McMahon Award Lecture was created in 1980 by Alfred University alumni to honor Dr. McMahon for his contributions to ceramic science and engineering. Each year, a distinguished ceramic scientist or engineer delivers the lecture and receives the John F. McMahon Award.

Alumni notes and news

Michalski and Mott to serve AU

Dr. Terry Michalske (BS CE 1975, PhD ceramic science 1979) and Richard Mott (BS CE 1980) are among the latest engineering alumni to serve as Alfred University trustees.

Michalske is director for biological and energy sciences at Sandia National Laboratories and also head of the Department of Energy's Combustion Research Facility. His work on the stress corrosion fracture of silica has earned several international awards, including



Dr. Terry Michalske



Richard Mott

the Ross Coffin Purdy Award (1985) and the Weyl International Glass Science Award (1989). He is co-recipient of an

R&D 100 Award (1994) for development of the Interfacial Force Microscope. Michalske presented the 2005 Samuel R. Scholes Jr. Lecture in Chemistry on the AU campus.

Richard Mott has been president, chief executive officer and director of Kyphon, Inc., since September 2002. Kyphon develops and markets medical devices designed to restore and preserve spinal function; Mott has overseen the growth of the company from \$36 million

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CACT co-sponsors New Energy Symposium

The second annual New Energy Symposium, presented by New Energy New York (NENY) and the College of Nanoscale Science and Engineering (CNSE), at SUNY, July 30 - 31, 2007. The event was presented by NYSERDA and sponsored by the Capital District Transportation Authority (CDTA); Plug Power; Heslin Rothenberg Farley and Mesiti, P.C.; Skansa; EYP Architecture & Engineering; the Center for Advanced Ceramic Technology at Alfred University; General Motors; and Air Products.

The event attracted more than 450 attendees and involved representatives from over 65 leading energy companies from New York State and beyond. It featured the first-ever New York Hydrogen Expo, organized in partnership with the National Hydrogen Association and Energetics, Inc. The Expo included a "Ride &



Pictured at the New energy Symposium (l-r): Dr. Steve Arrasmith, AU; Dr. Vasantha Amarakoon, AU; Dr. Guven Yalcintas, VP Technology Transfer, SUNY RF; and John Olenick, President, ENrG (ENrG is an industrial partner of CACT working on solid oxide fuel cell materials development).

Drive" at which individuals were able to test drive hydrogen-fueled vehicles made by several automakers, including Toyota, General Motors, Hyundai, Mercedes-Benz and BMW.

Two hands-on alternative energy workshops targeted toward middle school

and high school teachers were presented by The NEED Project and MRS Enterprises LLC. The CDTA provided hybrid buses to transport attendees throughout the event.

Panel discussions featured panelists representing companies including General Electric, General Motors, Plug Power, UTC, EYP, KeySpan Energy, New York Power Authority, NYSERDA, Earthrise Capital, Lazard Capital, New York Solar Energies Industry Association, BP Solar, CDTA, AWS True Wind and Northeast Biofuels, among others.

Keynote speakers represented government, industry and academe.

The CACT at AU is a Charter member of NENY and the New York Fuel Cell Network.

To learn more about New Energy New York, go to <http://www.neny.org>.

LECO Mobile Lab brings enhanced analytical solutions for AU researchers and CACT clients

On July 21st, the Center for Advanced Ceramic Technology hosted a visit of the LECO mobile analytical laboratory to the Alfred University campus. The visit, coordinated by Marlene Wightman, was arranged at the request of Paul Johnson (BS CE 1978, MS CE 1984) of CeraGen LLC, a CACT Affiliate Company. CeraGen, NYSERDA and the CACT are working together on nitride ceramics development.

LECO has the only fleet of mobile laboratories in North America featuring a hands-on experience with LECO instrumentation and specialists. The unique mobile laboratories offer the opportunity to see state-of-the-art instrumentation in action, and to discuss everything from methods to maintenance with skilled technicians. Of particular interest to CeraGen was the THC600 Series simultaneous Nitrogen/Oxygen/Hydrogen analyzer.



Paul Johnson (at center) of CeraGen LLC and Dr. Sreeksumar Chockalingam discuss testing options in the LECO mobile analytical lab.

Specimens could be evaluated on the spot with a variety of devices, a facility put in use by grad student Matt Brophy. Remarkd Brophy, "All the techniques for classifying and quantitatively measuring the different elements were very interesting and inventive. The equipment I used tested nitrogen, oxygen and

hydrogen content of a solid or liquid sample. I personally utilized it for determining stoichmetry of nitrogen to oxygen on an oxynitride powder, SrTaO₂N ... the tech support was knowledgeable and helpful."

Nitrogen and oxygen analyses of silicon nitride powders and their precursors are critical to their processing requirements and resultant properties. As a result of the visit, CeraGen and the CACT have successfully worked with LECO on raw materials analyses. Testing procedures have been established and a number of samples have been completed.

The visit was open to all faculty, students and staff.

Alumni

in annual sales in 2002 to \$400 million this year.

Prior to joining Kyphon, Mott was a senior executive officer at Wilson Greatbatch Technologies, Inc. 1993 to March 2002. He has over 18 years of management experience with companies such as Galileo Electro-Optics Corporation and Linvatec, a division of Conmed Corporation.

He is a former member of the Alfred University Alumni Council.

Royston tapped as SPACEHAB president

James D. Royston (BS EE 1989) has been appointed president of SPACEHAB, Inc, of Houston TX.

SPACEHAB, Inc., incorporated in 1984, (<http://www.spacehab.com>) is a leading provider of commercial space

products and services to NASA, international space agencies, Department of Defense, and private customers worldwide. The Company offers end-to-end space access solutions, space systems development, mission integration and pre-launch processing facilities and services, and large-scale government program support services.

For most of his tenure with the Company, Royston supported the Astrotech Space Operations subsidiary as senior vice president and general manager leading complex operations of the multi-location spacecraft processing facilities, while continually attracting new customers from both the government and commercial sectors.

Short Courses for lifetime learning

For those interested in increasing their expertise in the field of ceramics and glasses, or those just being introduced, Short Courses are a good option. Designed for professionals in the ceramics and glass industry, these intensive courses offer a chance to update your knowledge of the field in a short period of time. Courses range from detailed, in-depth examinations of very specific topics to broader introductory classes.

On-campus course offerings are posted on the web at

<http://engineering.alfred.edu/shortcourses/>

Short courses can also be designed for your Company's specific needs and conducted on site! Contact Marlene Wightman, Director of continuing Education and Outreach, wightman@alfred.edu, to discuss your needs.

Pye

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years ago. He succeeds Dr. Katherine Faber, a 1975 graduate (BS CE 1975). Past ACerS presidents include Dr. John F. McMahon (BS CE 1923), dean of the New York State College of Ceramics from 1949 to 1965, and Charles Fergus Binns, who was founding director of the

New York State School of Clayworking when it was established in 1900.

Pye is a past president of the International Commission on Glass; a member of the World Academy of Ceramics; an honorary member of the German Society of Glass Technology; and an honorary fellow of the British Society of Glass Technology.

Pye is currently a visiting professor at the Johns Hopkins University; technology advisor to the Sarnoff Corporation; and a member of the external advisory committee of the Savannah River National Laboratory.

Dr. Scott Misture, associate professor of materials science, brought his "gang" to Brookhaven [National Synchrotron Light Source, located at SUNY Brookhaven] in early September to do some powder diffraction. Present were James Ovenstone, postdoc (not pictured) and (from r-l) Michelene Miller, Ph.D. student, and Meredith Ragan (senior MSE) and Misture. At far left is Jianming Bai, the beamline scientist from Oak Ridge National Lab. This work was funded by NSF and a corporate sponsor.



Solid State Ionics update

17th International Conference on Solid State Ionics (SSI-17) June 28 - July 3, 2009 Fairmont Royal York Hotel Toronto, Canada

The 17th International Conference on Solid State Ionics continues to gather support from the technical community! We are pleased to announce that SSI-17 will have available six Dokiya student travel awards worth \$600 each. The Electrochemical Society is now a co-sponsor of SSI-17. More information on

sponsorship or application for travel awards will be on the conference website when available.

Dr. Alastair N. Cormack, dean of the Inamori School of Engineering and Van Derck Fr chette Professor of Ceramic Science, is the conference organizer

It's not too early to plan your submission to this important international event. Submission of Abstracts is effective September 1, 2008 until January 15, 2009 via the website, where detailed



A.N. Cormack

information about the conference program and events will be posted as they become available (www.SSI-17.net). Additional information can be obtained from Marlene Wightman, Director of Continuing Education and Outreach.

The SSI conferences, held every two years, promote international collaboration and cooperation and

provide a forum for scientists and engineers to discuss fundamentals, innovations and applications in the field of ion transport in solids.

Inamori School of Engineering at MS&T 2007

The faculty and students of the Inamori School of Engineering were hard to miss at MS&T 2007 in Detroit last month! Eleven members of the ceramics, glass and materials science faculty and their students were responsible for over 30 presentations, including an invited lecture by Dr. Doreen Edwards, associate professor of materials science and engineering, on "Structure Defect Chemistry and Transport Phenomena in Tunneled Titanates." Edwards was also co-chair of the session "Structure and Properties."

Other session chairs included Dr. Arun Varshneya, professor of glass science and engineering, co-chair of the

special award symposium honoring Dr. Alfred R. Cooper; Gary Del Regno, business program coordinator for CACT, chair of "Microwave & Plasma Processing and Electrophoresis"; and Dr. Alan Meier, assistant professor of metallurgy, co-chair of the sessions "Brazing and Other Joining Methods" and "Joining of Ceramics"

Next year's MS&T is at the David L. Lawrence Convention Center - Pittsburgh, PA, October 5-9, 2008.



Dr. Al Meier (at right) with student Victoria Knox (senior CE).

Misture at Denver X-ray Conference

Dr. Scott Misture, associate professor of materials science, was a member of the organizing committee for the successful Denver X-ray Conference, held 30 July - 3 August in Colorado Springs, CO.

At the meeting, he also served as judge for two evening poster sessions.



Edwards made Associate Dean

Dr Doreen Edwards, associate professor of ceramics engineering and materials science has been appointed to the position of Associate Dean in the Inamori School of Engineering.

Edwards will coordinate all SoE degree programs, lead SoE strategic planning efforts, and oversee SoE marketing activities in addition to continuing with the responsibilities of the Graduate Program Director.



We congratulate our MS&T 2007 winners !

The Inamori School of Engineering held a prize raffle at the recent MS&T 2007 meeting in Detroit. Thanks to all those who stopped by our booth on the exhibition floor and entered the prize drawing!

Prizes, either an Inamori School of Engineering hat or sweatshirt, were awarded at the alumni reception.



Pictured at right with Dean Alastair N. Cormack, our winners were (l-r): Dr. Alp Sehirlioglu (MS CE 2000), NASA Glenn Research Center; Dr. Ron Palmer, Institute for Clean Energy Technology, Mississippi State University; Dr. Cormack (always a winner, but no sweatshirt this year!); and Mike Wallace (BS CE 2005), now a grad student at Penn State.

SoE and CACT at MRS Fall meeting

November 27-29, 2007
Hynes Convention Center
Boston, MA

The Inamori School of Engineering and the Center for Advanced Ceramic Technology, NYS College of Ceramics, looks forward to greeting you and discussing your research needs at the MRS Fall Meeting Exhibition! Our location:

Booth 825
Hynes Convention Center (Level 2)
900 Boylston Street
Boston, MA 02115
Tuesday, September 18 – 11:00 am to 7:00 pm
Wednesday, September 19 – 10:00 am – 5:00 pm

Note the new Exhibition hours:

Tuesday, November 27 – 11:00 am to 5:30 pm
Wednesday, November 28 – 11:00 am to 8:30 pm – Join us for a Society Reception in the Exhibit Hall from 7-8 pm!

For free exhibition passes contact: Marlene Wightman,
wightman@alfred.edu.

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Coach Andy Crawford leads successful XC season

Andrew Crawford (PhD candidate in glass science) was appointed head coach of the men's and women's cross country teams at Alfred University in August 2007. A former cross country and track standout at AU, Crawford was an assistant coach of the men's and women's cross country and indoor and outdoor track and field teams from 2005-2007.

The team put in solid performances this season, most recently at the Empire 8 men's and women's Cross-Country Cham-

pionships, hosted by RPI and held at Saratoga Springs State Park. AU Men secured a solid 5th place finish anchored by senior EE Matt Karczewski, while AU Women edged out RIT to finish second.

AU swimming and Diving starts 2007-2008 season

Alfred University Men won in their first season competition 126-66 over Nazareth on 10/20/07 with ample contributions from our engineer-athletes!

Matt Lobban (freshman MSE), Ray Wright (junior ME) and Scott Sarkissian (junior EE) were members of the 2nd place 400 SCM free relay team. Lobban

also finishing 1st in the 800 SCM freestyle; Sarkissian contributed a 2nd place finish in the 100 SCM butterfly.

Dan Murphy (freshman CE) placed 2nd in the 50 SCM freestyle, while Dan Steere (freshman CE) placed 3rd in 100 SCM freestyle. In addition, sophomore Kameron Chambliss (MSE) contributed a 1st place finish in 1m diving with an outstanding exhibition performance in 3m diving.

Although the AU Women were disappointed with a loss, we congratulate sophomore Megan Jones (BMES), member of the 1st place women's 400 SCM freestyle relay team.

AU Engineering News is a print version of our on-line newsletter, published four times a year. For complete news and updates, go to <http://engineering.alfred.edu/newsletter>

AU Engineering News is edited by Dr. Anna E. McHale. Questions or comments about our newsletter can be sent to her at soeeneews@alfred.edu.

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