



Newsletter

School of Engineering & Applied Science

Miami University, Oxford, Ohio 45056

Volume 1 - Fall 2003

Welcome to the first edition of the SEAS *Newsletter*, which is designed to provide faculty and staff with all the interesting and good news about SEAS.

If you have news items to share, please contact Linda Kramer, Assistant to the Dean at: kramerlp@muohio.edu.

The new academic year brings lots of changes and additions to the School of Engineering & Applied Science. We invite you to meet our new outstanding faculty and staff members found throughout the Newsletter.

New Program & Director

SEAS expansion includes Electrical Engineering & Computer Engineering. Dr. C.S. Chen joins SEAS as the Director of the Electrical and Computer Engineering Program. He will guide the School's efforts in creating the new department of Electrical and Computer Engineering within the next two years.



Dr. Chen's academic and administrative experience was with the University of Akron, where he was the chair of the Electrical Engineering Department. He also held two interim administrative

positions: engineering dean, and associate vice president of research and technology transfer. He currently is serving a five-year term as an electrical engineering program evaluator for ABET.

C. S. Chen

Professor, Department of Computer Science and Systems Analysis

Degrees: Ph.D., M.S. University of Rochester, B.S. National Taiwan University

Research area: Signal processing, control system

Prior appointment: University of Akron

Highlights

- 1 Best Presentations Awards
- 2 Engineering Student Researchers
- 3 PSE News
- 4 New NSG Practicum Option
- 5 CIT receives grant; ACM in Top 10
- 6 SEAS Academic Awards Banquet
- 7 SEAS New Facilities Update
- 8 CSA Alumni Conference

Doug Coffin, PSE, & Anna Dollár, MME, win Best Presentation Awards

Doug Coffin, PSE, won the Best Presentation Award for 2003 of the TAPPI Paper Physics Committee at the International Paper Physics Conference in Victoria, BC, for his paper: "A Buckling Analysis Corresponding to the Flutting of Lightweight Coated Webs."

Anna Dollár, MME faculty member, and colleague P.S. Steif from Carnegie Mellon University in Pittsburgh, won the Mechanics Division Best Paper Award at 2003 American Society for Engineering Education National Conference in Nashville, Tennessee, for their paper: "A New Approach to Teaching and Learning Statics."

Anna Dollár and P.S. Steif also received the Best Presentation Joint Award in the Mechanics Division Session on Improving Statics and Dynamics Classes for: "Learning Modules for the Statics Classroom," and "A New Approach to Teaching and Learning Statics."



Anthony Choi

*Assistant Professor,
Department of
Computer Science
and Systems Analy-
sis*

*Degrees: Ph.D.,
M.S.E.E. University
of Florida -
Gainesville; B.S.E.E.
George Washington
University*

*Research area:
Robotics, autono-
mous mobile robots,
machine learning,
artificial intelligence,
expert systems,
embedded design,
digital design, mC
and mP applications*

*Prior appointment:
University of Florida -
Gainesville*

Manufacturing and Mechanical Engineering Students Involved in Research

More and more opportunities are arising for students to conduct independent research projects and we thought we would pass on some of what our students have been doing. In the past two summers, we have had three students – Chris Mantz (2003), Cole Snider (2003), and Jeff Martin (2002) working on a variety of projects under the auspices of the Miami University Undergraduate Summer Scholars Program. These projects include “Developing Neural Networks for Ionospheric Data Assimilation and Space Weather Forecasting” (with Dr. Qihou Zhou), “Dynamics of Smart Systems for Vibration Isolation” (with Dr. Amit Shukla), and “Neural Network Development for Space Weather Forecasting” (with Dr. Jade Morton). Cole Snider has also submitted a paper to SPIE Smart Structures Conference to be held in San Diego in March 2004.

Jason Smith and Marcus French worked as summer research assistants with Dr. Morton at Wright Patterson Air Force Base during the summer of 2003 as part of Jade’s grant from the Air Force. Jason implemented a custom high speed USB device that interfaces a Global Positioning Systems radio frequency front end and software processing unit. Marcus worked on developing signal processing techniques to mitigate jamming and interference for GPS receivers.

During the 2002-2003 academic year, two students, Mike Loufman and Vlad Vasiliu, received an Ohio Space Grant Consortium Scholarship. Mike’s project was “Simulations of Microfluidic Flows in Narrow Tubes” (mentor – Dr. Jim Moller) and Vlad’s project was “Virtual Demanufacturing” (mentors – Dr. Michael Bailey-Van Kuren and Dr. Jade Morton).

Also during the 2002-2003 academic year, Patrick Galbreath worked on an independent research project with Dr. Jim Moller on “Temperature and Velocity Fields in Ranque-Hilsch Vortex Tubes”. To help fund his project, Patrick applied for and received an Undergraduate Research Award from the University.

During the summer of 2002, Martin Rodgers was one of eight students nationwide selected to spend 10 weeks at the Arecibo Observatory in Puerto Rico working with Dr. Qihou Zhou on a statistical study of the frequency and location of intensive layers of ionized particles in the upper atmosphere. Chris Mantz and Tim Stoever accompa-

nied Dr. Zhou to the *Coupling, Energetics and Dynamics of Atmospheric Regions*

(CEDAR) conference in Longmont, Colorado this past summer to present the results of some of this research.

We are excited about the increased interest by our students in such research areas. You can expect to hear more about such projects in the future.



Fazeel Khan

*Assistant Professor,
Department of
Manufacturing and
Mechanical Engineer-
ing*

*Degrees: Ph.D., M.S.
Rensselaer Polytech-
nic Institute; B.A.
Middlebury College*

*Research area:
Mechanical behavior
of materials (experi-
mental analysis and
numerical modeling)*

*Prior appointment:
Rensselaer Polytech-
nic Institute*

Two students, Mike Loufman and Vlad Vasiliu, received an Ohio Space Grant Consortium Scholarship.



Paper Science and Engineering News

Faculty member, Dr. Cathy Almquist presented a paper on "Catalytic oxidation of VOCs over nanostructured WO₃/V₂O₅/TiO₂ catalysts" at the American Association of Aerosol Research, Anaheim, CA. In addition, she also presented a paper on "The destruction of BOD and toxicity in pulp and paper mill waste waters using photocatalysis on nanostructured TiO₂" at the Eighth International Conference on TiO₂ Photocatalysis: Fundamentals and Applications, Montreal. Dr. Almquist is enjoying teaching an honors class entitled "Human Impact on the Environment."

Professor Mike Waller presented a paper "Basis Weight Gauges: What's New?" at the Instrumentation, Systems & Automation Expo 2003 in Houston, TX. He also met and interacted with the Pulp & Paper Industry Division committee members. It is to be noted that Professor Waller is the chair of the Education Division.

The PSE Senior Design project has been awarded \$2000 to design a paper snowboard for The 2004 Energy Challenge Project Competition by IPST (Institute of Paper Science and Technology) and the DOE (Department of Energy). This year's competition was tougher than in the past. This was the highest number (17 colleges) of proposals to be submitted in the history of the Energy Challenge Program.

The team will design and build two snowboards: one for mechanical and structural properties, and the other for a competitive race in early April in Colorado. First prize in the competition is a substantial sum of

Shashi Lalvani
Professor and Chair,
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neering

Degrees: Ph.D.
University of Con-
necticut-Storrs, M.S.
University of New
Hampshire-Durham,
B. Tech. Indian
Institute of Technol-
ogy

Research area:
Electrochemical
engineering, fossil
fuels, environmental,
materials science

Prior appointment:
Southern Illinois
University-
Carbondale

money. Our team members are Colleen O'Donnell, Joel P. Hahn, Venjamin Vanlear, Michael Loufman of Manufacturing Engineering and Doug Kaplan and Margie Huseman of PSE.

Sarah Dryden and Ben Liguzinski, Miami Paper Science and Engineering seniors, are attending Helsinki University of Technology this fall after a summer internship with Kemra and Metsu in Finland. They will return to Miami University for their final semester.

Ashley Fether (PSE sophomore), undergraduate research assistant with Dr. Coffin, enjoyed making handsheets and helping Dr. Coffin assemble the creep tester this summer.

The PSE Senior Design project has been awarded \$2000 to design a paper snowboard for The 2004 Energy Challenge Project Competition.

New Associate Dean Position

The School of Engineering and Applied Science has created a new position of Associate Dean for Research and Graduate Studies. The new Associate Dean will be a current faculty member who is tenured in one of the departments of the School, and have significant research and scholarship accomplishments.

The announcement of the successful candidate for Associate Dean for Research and Graduate Studies will be made shortly.



Kimberly McErlane

*Assistant Professor,
Department of
Nursing, Hamilton
Campus*

*Degrees: M.S., B.S.
University of Cincinnati*

*Research area: The
care and manage-
ment of individuals
with Diabetes
Mellitus*

*Prior appointment:
Miami University*



Kathy Keister

*Assistant Professor,
Department of
Nursing, Middletown
Campus*

*Degrees: M.S.
University of Illinois;
B.S.N., B.S. Bowling
Green State Univer-
sity*

*Research area: Older
adults-quality of life*

*Prior appointment:
Owens Community
College*

Nursing Practicum - New Option for Miami Students

Miami University's Department of Nursing and Middletown Regional Hospital have teamed up to offer first-year nursing students an opportunity to work with medical professionals, clients, and families as they learn the role of the registered nurse.

Completing its second year, the Intermediate Clinical Nursing Practicum is a six-week program offered during the summer. Students are at Middletown Regional Hospital for eight hours on two consecutive days and receive four hours of college credit.

Students may take a four-day orientation prior to the class, which qualifies them as patient care assistants at the hospital. When the practicum is over, students may be employed at Middletown Regional Hospital on a full or part-time basis.

"Before enrolling in this program I had very little confidence," said second year nursing student Robin Yarber.

"Before enrolling in this program I had very little confidence," said second year nursing student Robin Yarber. "By the time it was over, I had no problem going into a patient's room. My mentor at Middletown Regional, Brenda Singleton, was so encouraging and supportive. I would recommend this program to any first year student."

Students must meet certain criteria to take the course, including a GPA of 2.5, completion of current first level courses and a letter of recommendation from a faculty member.

"We focus on communication, organization, aseptic technique, and bedside skills," said Miami Middletown Assistant Professor and Director of the Nursing Resource Center Donna Workman. "It's an excellent way to reinforce what the students have learned during their first year."

The hospital provides job opportunities for these students and will pay the tuition of the summer course if the student is willing to be employed as a Patient Care Assistant for the rest of the summer. The hospital will also pay the tuition for the second year of the nursing program for any student who is willing to be employed as an R.N. at the hospital for 12 months after he or she graduates.

"Our relationship with Middletown Regional Hospital continues to benefit both of our institutions," said Dr. Eugenia Mills, Chair of Miami University's Nursing Department. "We are able to offer our nursing students another educational choice, while Middletown Regional Hospital helps educate some excellent future nurses."



Computer and Information Technology Receives LTEP Grant

The Computer and Information Technology Department received a \$35,000 grant from the Miami University Learning Technologies Enhancement Program (LTEP) to develop a "Signature CIT Program." This signature is marked by innovative use of current teaching technology, industry involvement in the development and delivery of targeted courses, and the use of an electronic portfolio to showcase the students' best work. Our efforts will be focused at both a course level and a program level.

At the course level we will infuse innovative teaching technology with industry involvement into targeted classes. Five courses in the Computer and Information Technology Department have been identified as the targeted courses. These targeted classes will present some aspects of computer-mediated communications, industry involvement, and a deliverable for a portfolio.

Industry collaborators will help define projects in the course and communicate electronically with students in the course. Each of these targeted courses will have assignments/projects that will feed into the electronic portfolio. The electronic portfolio will highlight their major academic accomplishments for a prospective employer as well as provide a context for assimilating various kinds of academic accomplishments. The project leader is Dr. Cathy Bishop-Clark, and the entire department is involved in the project activities.



Jill Courte
Assistant Professor,
Department of
Computer and
Information Technol-
ogy, Hamilton
Campus
Degrees: M.S., B.S.
Wright State Univer-
sity
Research area:
Gender issues in the
field of computing
and computing
education

CSA ACM Programing Team in Top 10

Congratulations to the CSA ACM Programming Team and to Coach Zmuda.

Our CSA programming team "Miami White" placed in the top 10 out of 128 teams of the East Central Regional Contest on Saturday, November 8, 2003. You can view the standings at: <http://acm.ashland.edu/>.

Team "Miami White" consists of Raj Doshi, Chris Miller, and Alex Argo. Some of their accomplishments are:

- Top-ranked Ohio team
- Cincinnati site champions
- Top-ranked team coming from a non-Ph.D. granting department

The contest (which was distributed across the region) included teams from 71 colleges and universities throughout western Pennsylvania, Ohio, Michigan, eastern Ontario, and Indiana (excluding the Greater Chicago Metropolitan Area).

New SEAS Teaching Award

The School of Engineering & Applied Science values education, commitment, and attention to teaching that is constantly demonstrated throughout the division. The Teaching Excellence Award has been established to hone faculty excellence in the performance and scholarship of teaching. The award will be given annually to a SEAS faculty member and will be presented at the SEAS Academic Awards Banquet, March 3, 2004. For more information about the Teaching Excellence Award, contact Osama Ettouney at: ettounom@muohio.edu.

SEAS Research Award

A newly created faculty award, the SEAS Research Award will be presented to an outstanding researcher on the Oxford campus and on a regional campus. The criteria and procedure for nominating faculty for the Research Award will be announced very soon. The Research Awards will be presented at the SEAS Academic Awards Banquet, March 3, 2004.



School of Engineering and Applied Science Academic Awards Banquet

The first, annual SEAS Academic Awards Banquet will take place March 3, 2004 at 6:00 pm in the Marcum Conference Center. The newly created SEAS Research Awards and the Teaching Excellence Award will be presented. We will also honor high school teachers who were identified by our students for their influence on their high school education and decision to go to college. In the past, the Outstanding High School Teacher Awards were presented as part of the Fall Advisory Council meeting.

Academic Awards Banquet includes dinner and we encourage you to invite your spouse, partner, or significant other. More information about the Banquet will be sent to you next semester.

Computer Science and Systems Analysis Staffing Changes

You will soon see a new face in the Computer Science & Systems Analysis office. Kathy Ketcham will join the CSA staff as a new Program Associate. Kathy has been a Senior Program Assistant in the Housing, Dining, and Guest Services and Meal Plan Office. She began her new duties in CSA on November 19, 2003.

Michele Lea will assume the responsibilities of the Program Associate for the Electrical & Computer Engineering Program and move with the program when it becomes a department in the near future.

New Staff Member in the SEAS Dean's Office

Lisa Abrams joins the Dean's Office as interim Assistant Dean. In addition to assisting SEAS with our recruitment efforts, she is working on the new SEAS First-Year Curriculum, the new Engineering (General) major, and will be the lead SEAS administrator for Miami University's Summer Orientation and Registration Program.



Lisa Abrams

Interim Assistant Dean

Degrees: Ph.D., MS, BS, The Ohio State University

Research area: Polymer and Composite Processing; modeling, analysis, and design

Prior appointment: The Ohio State University, Director of Women in Engineering

CSA Employer's Fair

On October 2, the CSA Department sponsored the 24th annual Employer's Fair. The fair is an evening event that brings together CSA students and employers looking for interns and permanent hires. This year 13 employers sponsored booths. Ninety-four students participated in the fair.

New SEAS Facilities Update

Creating new facilities for SEAS began with a program of requirements which captured the programmatic needs of the School. We projected curriculum and enrollment changes into the future (2007) to help identify our needs.



Front View - Facing High Street

The first phase of the planning is called *schematic design*. Working with our departments, the architects from Burt, Hill, Kosar, and Rittelman Associates developed a layout that represents the needs of the School with the appropriate laboratory space, classroom (learning environment) space, student team space, faculty office, and research space.

The plan is to create one facility that will house the School of Engineering and Applied Science. This facility will consist of new construction that will be connected to a renovated Benton Hall. The new facility will house the departments of



Back View - Facing what is now Goggin

Manufacturing and Mechanical Engineering, Paper Science and Engineering, and Electrical and Computer Engineering. The Dean's office, Computer Science and Systems Analysis department, and the SEAS IT computer labs will be in the renovated Benton Hall.

We are now in the second phase of the process, which is *design development*. We are identifying the actual layout and placement of the walls and supporting infrastructure. Once this has been approved, construction drawings will be created and the project will go out for bid. The plan is to break ground for the new construction sometime next Fall. The current schedule has us occupying the new facility in the summer of 2006. Renovation of Benton will begin in 2006 with occupancy scheduled for summer of 2007.

Important dates for SEAS

- SEAS Academic

Awards Banquet:

Wednesday, March

3, 2004, Marcum

6:00 pm

- Advisory Council:

Friday, April 2, 2004,

Marcum , 8:00 am

- University

Commencement:

Saturday, May 8,

2004, Yager

Stadium, 3:00 pm

- Divisional

Recognition

Ceremony: Sunday,

May 9, 2004,

Goggin, 3:00 pm;

reception

immediately

following the

ceremony.

CSA Alumni Conference

The 2004 conference will take place on October 8, 2004 at the Shriver Center.

"Interaction among speakers with the audience was phenomenal. Additional alumni interaction/additions and perspectives were very valuable."

CSA Alumni Conference

On October 3, 2003, the CSA Department sponsored its second annual Alumni Conference. Fifty alumni from California to Vermont, and 80 students participated in the conference. This event brings alumni back to campus to share career experiences and advice with students; provides role models for our students both professionally and as loyal alumni; and strengthens bonds between our alumni and our department.

The conference, held at the Miami Inn, was organized like a professional conference, with a keynote talk by a prominent graduate, with panel sessions throughout the day, and concluded with an informal reception. The keynote was delivered by Mr. Ed Harbach, partner at Accenture. Ed recently returned to the USA after serving as the head of the practice in Japan.

Panel sessions focused on career development, career case studies, and technologies. A highlight of the reception was a celebration of the CSA Department's 40th Anniversary. Planning for the conference is a primary task for the CSA Alumni/External Advisory Council. Alumni Ted Friedman ('85) and Bruce Petro ('75) were co-chairs of the conference.

Comments from students about the Conference:

"It taught me a lot that I did not know about what is required to succeed."

"I did like how there were several alumni to bring their perspective to the table."

"Interaction among speakers with the audience was phenomenal. Additional alumni interaction/additions and perspectives were very valuable."

Comments like this indicate that the conference is filling a void that we identified in our curriculum concerning our ability to provide career advising to our students.

A significant outcome of the Alumni Conference is growth in external support from alumni. A gift of \$150,000 to support a lab in our new facility is a direct out-growth of the 2002 Alumni Conference. The Conference has also provided a vehicle to shepherd additional recent gifts that total over \$200,000.

