



# Fenn Focus

## New lab enhances mechanical engineering curriculum

Cleveland State University and Parker Hannifin Corporation celebrated their ongoing partnership in engineering with the dedication of a Motion and Control laboratory in the Fenn College of Engineering on November 21, 2001.

Last year, Parker President and CEO Donald Washkewicz presented Cleveland State a \$100,000 gift to equip the new Stilwell Hall lab, which is used primarily by students in mechanical engineering programs.

Undergraduate and graduate students are reaping the benefits of the lab and research is being served well by the facility, enhancing the College's ability to attract grants, students, and faculty of the highest caliber to Cleveland State. The lab is providing resources for the education of future engineers in the application and control of fluid power, and research into the more advanced problems

pertinent to the fluid power industry.

"We thank the Parker Hannifin Corporation for making this motion and control laboratory possible," said Interim Dean John Hemann. "Industry also will benefit by having an employment pool of engineering graduates with practical experience in the current tools of the fluid power trade."

Alumnus Washkewicz, BME '72, added, "I would have liked to

have had a lab like this to work in while I was a student. We intend to visit this lab on an annual basis. Parker plans to

See *PARKER HANNIFIN*, page 10



*Cutting the ribbon to dedicate the lab are (l-r): John Hemann, Interim Dean, Sally Florkiewicz, CSU Trustee, Michael Schwartz, CSU President, and from Parker Hannifin, Patrick Parker, Chairman Emeritus, Don Washkewicz, CEO, Marwan Kashkoush, President, Hydraulics Group, & Larry Schrader, Global Motion & Control Training Manager.*

### Letter from the Dean

*Dear Alumni and Friends,*



Let me begin my letter with a **sincere thank you** for your growing support of the Fenn College of Engineering. The 2000-2001 fiscal year closed as one of the most successful ever for the

College, with alumni gifts increasing by more than 25% and corporate support doubling as well. Cash giving to the College totaled more than \$360,000. Equally important were the numerous in-kind gifts we received for computer software licenses and lab equipment. These gifts enable us to

keep our technology current without spending the thousands of dollars needed to do so. All gifts are acknowledged in the honor roll of donors found in this newsletter.

However, a list of names cannot express the importance of this support in our ability to educate future engineers. The investment by our alumni and friends in the College, its students and faculty, enable us to provide scholarships, support student organizations, support recruitment efforts, educate young people about careers in engineering, build our image, and do much more. These gifts also help the College support general operations as the state continues to decrease its support of

higher education. As you can see, your growing support goes a long way toward enhancing our academic programs.

The Fenn College of Engineering has been a bustle of activity. This newsletter contains more information about the dedication of the Parker Hannifin Motion and Control Lab, new Productivity and Quality Center, directed by Dr. Y.H. Andrew Liou, and web-based engineering education in World-Class Manufacturing and Engineering Management. The College is also participating in multidisciplinary Biotechnology Certificate Programs and working with several alumni to examine

See *DEAN'S LETTER*, page 3

# Student Profile

## Keith Spalsbury

As a senior in mechanical engineering, Keith Spalsbury successfully manages a full schedule at school and home. Commuting every day from his home in Franklin Township, Keith's thoughts move from the new home that he is personally building

for his extended family to his hectic course schedule and finally to finding a job upon graduation this May.

In spite of these responsibilities Keith maintains a relaxed, purposeful and focused demeanor. These personality traits, accompanied by a strong work ethic, have served him

well, whether it was during his cross country bike trip in 1991 or when he and his wife built a solar powered home in Olympia, WA in 1992.

Although Keith is a journey level carpenter, he felt that he wanted to pursue an engineering career because it offered better job security and also fulfilled his interest in the alternative energy and aerospace areas. He was drawn to Fenn because it was close to home and he had heard that it had a reputation for flexibility, small classes and the cooperative education opportunities that he wanted. "I have really enjoyed my education at Fenn College. Whenever I've needed help or advice the faculty and staff have been there for me," he said.

Keith has also made some good job contacts, including his most recent experience at the Nutro Machinery Corporation in Strongsville. Other activities include participation in the American Society of Mechanical Engineers (ASME), Cleveland Engineering Society and the Tau Beta Pi National Engineering Honor Society.

All of these activities have not hampered Keith's ability to succeed academically. Last year he received the Outstanding Engineering Student of the Year Award by the Cleveland Area National Engineer's Week Committee. He also received an award for academic excellence from the College's Engineering Student Enrichment Program, along with scholarships from ALCOA, ASME, Ford Motor Company, Ohio Space Grant, Parker Hannifin and Washington Group International. He is listed in "Who's Who in American Colleges and Universities."

"The scholarships have helped tremendously, both financially and through recognition and encouragement to continue to do my best," states Keith. "I encourage alumni to support Fenn College. Their support generates the extras for students – from scholarships to money for student groups. State funding only pays for the minimum." ■



## Cleveland State & Fenn College Announce New Addition: Productivity & Quality Center

This past October, the Fenn College of Engineering officially launched its newest department: the Productivity & Quality Center (PQC). Led by Industrial & Manufacturing Engineering Professor, Dr. Andrew Liou, the PQC has been established as the consulting and training services arm of the College. Specializing in operational improvement, the Center provides technical assistance in such areas as quality systems, transactional process improvement facility layout, ergonomics, lean manufacturing, time & motion studies/capability assessment and process simulation, along with a host of other services. The keystone of the new Center, however, is the strategic partnership with a world leader in Six Sigma process improvement.

Sigma Breakthrough Technologies, Inc. (SBTI), the second largest provider of Six Sigma training and consulting to Fortune 100 companies, reaffirmed their commitment to Cleveland State through an initial donation to the PQC. Along with the donation, SBTI has asked the PQC to run its public open enrollment training program. SBTI's core business is providing Six Sigma services through corporate-wide contracts. Dr. Steve Zinkgraf, founder of SBTI and one of the originators of Six Sigma at Motorola, had a strong desire to bring this high-powered methodology to the often overlooked Small to Mid-Sized Enterprise (SME) market. He found in Dr. Liou the perfect mix of enthusiasm and results-oriented drive. From this pairing came the SBTI/CSU Regional Training Program, a vehicle that provides training to companies wanting to train a small number of personnel. Currently, the PQC is managing Six Sigma courses throughout the world, in such locations as Cleveland,

Detroit, Austin, Beijing, Kuala Lumpur and beyond. Courses in the Regional Program range from the traditional manufacturing oriented process improvement methodology to training for transactional business improvement, technology development, new product development and launch and asset dependability. Along with the program management role, the PQC also maintains the Regional Program's website, [www.sixsigma-post.com](http://www.sixsigma-post.com). SBTI, however, is not the only excellent partner the PQC has.

NASA, both headquarters and the Glenn Research Center locally, have had a long relationship with Dr. Liou. During the past few years, Dr. Liou has helped NASA create a 'Design for Manufacture

& Assembly' course, known internally as MANU, which continually receives the highest ratings of any course within the organization. NASA has reaffirmed their support for CSU through the PQC, and looks to provide funding in the coming year of close to \$250,000.

Over the next couple of months, the PQC will move into its new home on the first floor of Stilwell Hall; a room being constructed at the south end of the lounge area. In addition, the PQC staff will be working towards finding ways to link CSU's excellent academic staff with opportunities for industrial consulting projects and finding research funding sources. Along with Dr. Liou, the PQC is staffed by Cathy Fisher, Program Specialist – Six Sigma, and Scott Darpel, Six Sigma Program Manager and two-time Fenn College graduate. Please stop by to meet the staff and find out what we have to offer. For more information, contact **Dr. Andrew Liou** at (216) 687-4467 or email [sigmaliou@aol.com](mailto:sigmaliou@aol.com). ■



# Scholarship Awards and Recipients for the 2001-2002 Academic Year

## *ALCOA Foundation Scholarship*

Daniel Lalain, *Electrical Engineering*  
(spring, 2001)  
Kurt McClain, *Mechanical Engineering*

## *American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE)*

### *Gardiner Family Foundation Scholarship*

Sherry Bastawros, *Mechanical Engineering*  
Martha Garcia, *Mechanical Engineering*  
Patrick Laffey, *Mechanical Engineering*

## *Frank J. Ambrose Engineering Scholarship*

Michael Antos, *Industrial Engineering*  
Jacob Berger, *Civil Engineering*  
Anthony Nerone, *Mechanical Engineering*  
Megan Schwind, *Mechanical Engineering*  
Eric Skrout, *Electrical Engineering*  
Bryan Welch, *Electrical Engineering*

## *Avery Dennison Scholarship*

Angela Jukic, *Industrial Engineering*

## *Albert T. Branham Scholarship Fund*

Carla Lamothe, *Chemical Engineering*

## *Allen B. Curtis Endowed Fund for Student Aid*

Carla Lamothe, *Chemical Engineering*

## *Calvin B. Dalton Memorial Fund Funded by URS Consultants, Inc.*

Marcie Abi-Ezzi, *Electrical Engineering*  
Debra Shorf, *Mechanical Engineering*

## *Engineering Dean's Scholarship*

James Bartlett, *Industrial Engineering*  
Matthew Kaltenbach, *Chemical Engineering*

Amanda Murphy, *Industrial Engineering*  
Nicholas Reba, *Chemical Engineering*  
James Strieter, *Electrical Engineering*  
Mark Wallischeck, *Civil Engineering*

## *Engineering Merit Award*

Richard Baxendale, *Mechanical Engineering*  
Christopher Blados, *Engineering*  
Heather Hlasko, *Civil Engineering*  
Robert Murawski, *Electrical Engineering*  
Aaron Schmitkons, *Mechanical Engineering*  
Jacqueline Zassick, *Mechanical Engineering*

## *HNTB Corporation Scholarship*

Jay Bruckner, *Civil Engineering*  
Noemy Roman, *Civil Engineering*  
Rasheed Warith, *Civil Engineering*

## *Lubrizol Corporation Scholarship*

John Bodmann, *Chemical Engineering*  
Eric Varga, *Chemical Engineering*

## *National Electrical Contractors Association Scholarship*

Dragos Dinca, *Electrical Engineering*

## *NASA Minority Engineering Scholarship*

Jennifer Jones, *Electrical Engineering*  
Jael Panagaris, *Chemical Engineering*

## *Ohio Space Grant*

Debra Shorf, *Mechanical Engineering*  
Keith Spalsbury, *Mechanical Engineering*  
Erasmus Ruggiero, *Chemical Engineering*

## *Parker Hannifin Scholarship*

Iyinola Adesulu, *Electrical Engineering*  
Matt Milcetic, *Mechanical Engineering*  
Jael Panagaris, *Chemical Engineering*  
Mandeep Sahota, *Mechanical Engineering*  
Keith Spalsbury, *Mechanical Engineering*

## *Presidential Scholarship*

Steven Long, *Electrical Engineering*  
Ryan Smalley, *Civil Engineering*

## *Provost Scholarship*

Mark Baker, *Computer Engineering*  
Amanda Beach, *Electrical Engineering*  
Thomas Dewitte, *Engineering*  
Andrew Jocke, *Mechanical Engineering*  
Marissa Phillips, *Civil Engineering*  
Timothy Shoda, *Electrical Engineering*  
Michael Wendolowski,  
*Chemical Engineering*

## *Washington Group International Endowed Engineering Scholarship*

Jarion Bradley, *Civil Engineering*  
Paul Korcуска, *Industrial Engineering*  
Mandeep Sahota, *Mechanical Engineering*  
Keith Spalsbury, *Mechanical Engineering*

### **Office of the Dean**

#### **Dr. John H. Hemann**

Interim Dean  
(216) 687-2558  
j.hemann@csuohio.edu

#### **Dr. Paul X. Bellini**

Associate Dean for Operations  
(216) 687-6899  
p.bellini@csuohio.edu

#### **Dr. Joanne M. Belovich**

Associate Dean for Academic Affairs  
(216) 687-2556  
j.belovich@csuohio.edu

#### **Pamela C. Charity**

Director of Undergraduate Affairs  
(216) 687-6912  
p.charity@csuohio.edu

#### **Gregg G. Schoof**

Manager of Student Programs  
(216) 687-5272  
g.schoof@csuohio.edu

#### **Deborah S. Miller**

Development Officer  
(216) 687-5513  
d.s.miller@csuohio.edu

### **Contributing Writers**

Audrey Elkaim  
Barbara Chudzik  
Scott Darpel, '98, '00  
Deborah S. Miller  
Gregg Schoof

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## **Dean's Letter**

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ways to get involved with the restoration of the Hulett Iron-Ore Unloaders through future senior-design projects. Lastly, our search for a dean is down to the final three candidates. We anticipate a new dean will be chosen by January, 2002.

Thanks once again for your investment in the Fenn College of Engineering. The support of all our alumni and friends is very important in advancing the future of this College.

*John H. Hemann*  
*Interim Dean*

# World-Class Manufacturing and Engineering Management at the Fenn College of Engineering

Manufacturing is the largest sector of Ohio's economy employing 1.1 million people and accounting for more than 20% of the gross state product. However, the face of manufacturing is changing, and successful firms will be those that can build a flexible, rapidly responsive, agile organization. In response to this need, Cleveland State University, through the Fenn College of Engineering, has collaborated with eight other universities to provide a certificate program in World-Class Manufacturing and coursework in Engineering Management. Ohio University, The Ohio State University, The University of Akron, The University of Toledo, University of Cincinnati, University of Dayton, Wright State University and Youngstown State University all have strong manufacturing engineering programs and experience in distance learning technology.

The manufacturing certificate program offers 41 one-credit hour classes in a web-

based format, making it convenient for the working engineer. The goals of the program are to provide working engineers the skills needed to stay competitive in the global manufacturing economy, as well as

enable manufacturing corporations in Ohio to both compete in the global economy and to excel in their business. Participants who complete 20 individual modules earn the Consortium's Certificate in World-Class Manufacturing. These credits may be applied toward a master's degree in Industrial or Mechanical Engineering with the approval of the student's advisor. Individuals may register for single modules, enroll in the graduate program, or work toward completion of the Certificate. A bachelor's degree is required for enrollment in any of the classes.

The Engineering Management option within the M.S. Industrial Engineering program is designed for engineers who will advance into positions managing technology, projects, and research and development – positions that require both management and technical expertise. The goals of the program are to develop technical management skills through a curriculum that emphasizes both quantitative

techniques and qualitative analysis, extend knowledge of modern business techniques in engineering, and improve one's understanding of how industry operates in a competitive global environment. The degree requires 30 hours of course work and six hours of design project.

Dr. Paul Petersen, Assistant Professor of Industrial and Manufacturing Engineering, and designer of the web-based course, Production and Inventory Control states, "With the change in life-style of our students, I feel a number of courses can be successfully taught via distance-learning technologies. Our students' schedules are less flexible. Distance learning offers the benefit of helping students fit coursework into their busy lives." The College plans to offer Competitive Manufacturing and Advanced Metal Cutting in the spring, via the internet. Students have the choice of these courses and more from the nine universities via the Web and CD Rom. This allows the student to access the material at his or her convenience.

For more information about the World-Class Manufacturing Certificate, contact the Engineering Dean's Office at (216) 687-2555; [engineering@csuohio.edu](mailto:engineering@csuohio.edu). To learn more about the M.S. Industrial Engineering Program/Engineering Management option, contact the Department of Industrial and Manufacturing Engineering at (216) 687-2044. ■



## What's New?

The Fenn College of Engineering is interested in hearing your good news about job changes, awards and personal achievements (also your input on our newsletter).

Send your latest news to:  
Deborah Miller  
Development Officer  
at: [d.s.miller@csuohio.edu](mailto:d.s.miller@csuohio.edu)  
or call: (216) 687-5513.  
Be sure to include your full name, degree and graduation date.



### Civil Engineering Alumni Reunion

Alumni from Civil Engineering gathered in Stilwell Hall for a wine and cheese reception and to reminisce with old friends and former professors. Enjoying the event are (l-r): David Ferencik, MSCE '97, Craig Hebebrand, BCE '82, MSCE '89, Ted Beltavski, BCE '82, MSCE '86, Ed Adamczyk, BCE '82, MBA '89, and Stephen Tomsic, BCE '93.



# HONOR ROLL OF DONORS

July 1, 2000 to June 30, 2001

*The Fenn College of Engineering would like to thank and recognize the following individuals and organizations for their support of scholarships, laboratories, students and faculty during the previous fiscal year.*  
*Your gift to the Fenn College of Engineering positively impacts our future.*

## *Alumni and Individuals*

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*Mechanical Engineering students (l-r) Kurt McClain, Douglas Wright and Sachin Budhabhatti talk with Don Washkewicz, BME '72, President and CEO of Parker Hannifin Corporation, about their experiences using Parker's equipment during the Parker Hannifin Motion and Control Laboratory dedication.*



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- CASH AND MATCHING GIFT SUPPORT**
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Siemens Automotive Corporation  
The Stanley Works  
United Space Alliance

Every effort has been made to ensure the accuracy of this honor roll. If you have any questions or comments, please contact the Office of Development at 216-687-5513.

# Focus on ALUMNI

## Class Notes

**Mirza F. Alam (MSEE '97)** serves as PAI-Sustaining Engineer for the Precision Analog & Interface Department of Texas Instruments Inc.

**Charles T. Alexander (BEE & BS '01)** accepted a position as engineer at Bacik Karpinski and Associates.

**Jennifer Altsadt (MSIE '94)** has been appointed Director, Business Process Development, at Nordson Corporation.

**Don Anthan (BSET '78, MSEE '81)** was named Dean of the Engineering Division at Lakeland Community College.

**Chris Barranger (BEE '92)** was promoted to Lead Electrical Design Engineer for Telematics/Multimedia Systems Division of Visteon Automotive in Dearborn, Michigan (formerly Ford's Electronics Division).

**Dr. Steven G. Belovich (MSEE '83, DRE '87)** serves as President of SmartData, Inc. SmartData™ is an interactive,

platform-independent data acquisition, archiving, analysis and presentation system. It can be configured as a standalone system for production & quality monitoring, reporting, etc. or as an interactive interface to all corporate IT and manufacturing automation systems. The company is currently seeking venture capital funding.

**Craig A. Black (BEE '75, MSEE '76)** has been appointed Vice President & Chief Technology Officer at Eaton Corporation.

**Rajiv Chokshi (BEE '01)** was named Electrical Project Engineer at van Dijk Pace Westlake.

**Leland Clunk (BIE '76)** has been promoted to plant manager of Thermacore International Inc.

**Gregory Danko, PE (BSMET '92, MSIT '98)** has recently been appointed to President of Competitive Edge. Competitive Edge is an affiliate of Resource Associates Corporation/Total Quality Institute (RAC/TQI) of Reading, PA. The business is publishing, marketing and facilitating learning materials in different languages, designed to maximize that resource.

**William Easterday (BME '97)** has joined the Machinery Business Center of Howmet TMP Corporation, an ALCOA business, as a Project Engineer. The holder of three U.S. patents, Bill looks forward to a long and mutually beneficial relationship with Howmet after nearly three decades serving various Engineering and Product Development roles with Nelson Stud Welding, Inc. a former TRW division.

**John Gardner (BME '81)** has recently moved to Boise, Idaho where he has taken the position of chair of the Mechanical Engineering Department at Boise State University. Previously, he was on the faculty of the Mechanical and Nuclear Engineering Department at Penn State.

**Mark Harold (BME '85)** was named product development manager of Carmanah Technologies Inc. Most recently, Harold held the position of engineering manager for Pacific Insight Electronics, a manufacturer of automotive, heavy truck and marine electronics.

**John D. Hubbard (BSMET '70, MBA '73)** has joined the board of Bodycote International

PLC as Group Chief Executive Designate, and will become Chief Executive Officer on January 1, 2002.

**John Hubiak (BEE '99)** serves as Electrical Engineering Project Engineer for Lucas Aerospace, a division of TRW.

**James L. Johnson (BME '93)** was recently promoted to Assistant Professor with tenure at Lorain County Community College. He had a textbook come out this past summer from Delmar Publishers titled *Introduction to Fluid Power*.

**Donald G. Klimkowicz (BChE '77)** has joined Brush Wellman Inc. as Vice President, Operations.

**Thomas W. O'Boyle (BSE '69)**, senior Vice President and Group Executive for the Eaton Corporation's Truck Group retired on June 30, 2001.

**Michael B. Olex (MSEE '80)** was appointed to the position of Senior Vice President, Operations and Manufacturing for U.S. Genomics.

**Margaret R. Taber (BES/BEE '58)** has been listed in Marquis' 55th edition of Who'sWho in America.

**Nick Visic (BEE '93)** serves as VOEM Account Executive for Future Electronics.

**Merle M. Wysock (BChE '56)** fondly recalls receiving his steel ring in 1983 when his daughter received hers from Vanderbilt's College of Engineering.

### In Memoriam

**Wendell F. Barr (BChE '34)** September 2001.

**John Birtalan (BMetEng '50)** April 2001

**Orison Franklin Browder Jr. (BEE '49)** May 2001

**Melvin Eckhouse (BME '49)** June 2001

**Stanley Gordon (BSE '50)** August 2001

**Robert D. Herman (BME '50)** May 2001

**Robert Harry Kantner (BEE '49)** March 2001

**Leslie Mitchell (BSET '01)** April 2001

**Thomas E. Reim (BEE '59)** June 2001 ■

## Congratulations to Distinguished Alumni

Two alumni were honored during June, 2001's Distinguished Alumni Awards Banquet, held at Executive Caterer's at Landerhaven. Receiving the Fenn College of Engineering Outstanding Alumni Award was **Stephen L. Guard, BSCT '81**. Guard is the Civil Section Manager for CT Consultants, Inc. CT Consultants, Inc. currently employs 23 CSU alumni.

**George Y. Baaklini, BCE '80, MSCE '81, DRE '91**, was the recipient of the George B. Davis Award for Service to the University. This prestigious award recognizes alumni who have generously dedicated themselves to the growth and advancement of Cleveland State University. Dr. Baaklini has been a research scientist, NDE Group Leader and Project Manager at NASA Glenn Research Center since 1988. Through his efforts, more than \$1.9 million in research funds have come to the Fenn College of Engineering and its faculty. ■



▲ *Bob Torok, CSU Alumni Association President, John Hemann, Interim Dean, Fenn College of Engineering, George Baaklini, and Michael Schwartz, CSU President.*



▲ *Stephen Guard and John Hemann, Interim Dean.*

## Dean Announces New Alumni Awards

A new tradition will begin at the Fenn College of Engineering commencing in 2002. The Dean's Distinguished Alumni Award will be presented to outstanding graduate(s) of the Fenn College of Engineering on an annual basis. Our graduating classes date back to the 1930's. Each year, the Dean will choose individual(s) who represents the College's alumni family in an outstanding way.

"The Engineering Alumni Association has been recognizing our alumni for a number of years, with an emphasis on technical accomplishments in the areas of

papers and publications, patents, and other engineering achievements. This award is meant to complement their award, and more formally recognize alumni who have significantly impacted their organizations through management and other contributions, as well as impacting the Fenn College of Engineering," states John Hemann, Interim Dean.

The inaugurate Dean's Distinguished Alumni Award(s) will be presented in the fall, 2002 at the 20th Anniversary Celebration of the Engineering Student Enrichment Program (ESEP). Many alumni who

participated in student organizations throughout the past 20 years were benefactors of ESEP, which provides support for student organizations and competitions, student awards, tutoring, and cultural activities. This program exists for our students because of the generous support of the William Compton (BEE '41) Family, Richard Schindler (BEE '63) and many other alumni who provide annual gifts in support of our students. Watch your mail for more details of this alumni celebration and reunion. ■

## Call For Nominations Fenn College Outstanding Engineer Award

Each year, the Fenn College of Engineering Alumni Association recognizes one of its own alumni who graduated with an engineering degree from Fenn College or Cleveland State University. This tradition, which began in 1977, recognizes an individual who has excelled in his or her engineering career. Nominees are chosen based on a variety of criteria, including: profes-

sional achievement, patents, organizational advancement, awards, publications, etc., continuing education, civic and professional activities, and attainment of a professional engineering license.

You are invited to nominate a friend, colleague or yourself. Nominating is simple. Send in a resume or summary of accomplishments addressing the

above criteria to:

**Fenn College of Engineering Dean's Office**  
**Cleveland State University**  
**2121 Euclid Avenue SH 104**  
**Cleveland, OH 44115**

**Attn: Outstanding Alumni Award**

You may also complete a nomination form on the web and submit it directly online at: [www.csuohio.edu/engineering](http://www.csuohio.edu/engineering). ■

**Deadline for all  
nominations is  
February 15, 2002**

## A Word From Your Alumni President

### *Dear Fenn College of Engineering Alumni*

As a Fenn College of Engineering graduate, you know first hand the value of a college education. Fenn is different from other colleges because the faculty create an intimate learning environment, enabling students to develop personal relationships with professors that many other institutions lack. Regardless of the field that you pursue, the faculty and staff of every department go above and beyond the call of duty to ensure that you have all of the tools necessary to succeed. I can recall many times that secretaries and professors from other departments gave me assistance with many issues, whether it be something as simple as help on a homework problem

or as elaborate as planning student organizational events.

The Fenn College of Engineering Alumni Association exists to support the Fenn College of Engineering. We do this in a number of ways: activities that involve students to promote networking and professional development, networking and education opportunities for alumni, representing our alma mater in the community, and encouraging financial support of the College.

I'd first like to invite you to get more involved in the alumni organization by attending our next meeting, **January 10, 2002 at 5:30 p.m.** in Compton Lounge. With more involvement, we will be able to develop more quality activities that benefit the students, College and ourselves.

Second, I'd like to encourage your financial support to help continue the proud tradition at Fenn College of Engineering. A gift to Fenn College supports not only those students currently enrolled here, but all alumni. Your gifts help the College further its programs. By giving charitably to the college, you help it become even more prestigious, thereby increasing the value of your degree.

I hope this letter finds all graduates of Fenn College gainfully employed or enjoying retirement. We as engineers enjoy a feeling of job security that is rare in today's market. I encourage you to donate as much as you feel comfortable with to Fenn College. Imagine the impact of more than 7,000 alumni donating at least \$25 each...

*Charles T. Alexander, BEE '01*



## Professor Generates More Than \$1.35 Million in Research Grants for Stirling Engine and Combustion Research

Mechanical Engineering Department Chairman, Dr. Mounir Ibrahim, has been awarded more than \$1.35 million in research grants that are effective from August 2000 to August 2003 to conduct research in Stirling Engines and Combustion.

### *Stirling Engine Research*

Dr. Ibrahim received a two-year grant of \$460,000 from NASA Glenn Research Center to develop a multi-dimensional Stirling Engine code for thermodynamics performance. This funding is to develop a reliable Computational Fluid Dynamics (CFD) code that can predict engine performance with the goal of significant improvements in accuracy when compared to one-dimensional (1-D) design code predictions. Stirling Engines are considered by NASA for deep-space missions. In 2000, the Stirling Radioisotope Power System, or RPS, was baselined as the advanced power system that may be used on NASA missions such as Europa and Solar Probe missions. It now appears that long-duration Martian rover missions will be the first application of Stirling RPS.

Working with several co-principal investigators from the University of Minnesota, Gedeon Associates in Athens, Ohio and NASA Glenn Research Center,

Dr. Ibrahim and the team received a \$540,000 grant from the U.S. Department of Energy for Terrestrial Stirling Engine Applications. The team will embark on fundamental research that will advance Solar Dish/Converter Technology by making significant improvements to a crucial component of the Stirling Engine converter, the regenerator. An agreement has also been secured with the Stirling Technology Company (STC). The company will offer information about their regenerator design and provide guidance and critique as the program progresses. Considerable Stirling engine development has taken place over the last 20 years. Development was under the NASA 25 kWe Space Power Research Engine development program, and for power at 55 We (a deep space probe design) and 350 We. Additional work is needed to develop successful engines in the 1-5 kWe range. Improved modeling will allow optimization of the design at this engine size.

### *Combustion Research*

Working with Thomas D. Briselden of Penn State-Erie, Dr. Ibrahim has spent the last two years developing a high-temperature, non-catalytic, infrared heater. There is a U.S. Patent pending on this technology. Grants worth \$350,000 from the Gas

Research Institute, CAMP, Inc. and CNG provided the funding for this research. Currently, commercially available IR gas heaters are: gas catalytic heaters that operate between 400° F to 950° F or gas ceramic heaters that operate between 1400° F to 2000° F. The current invention is a gas fired infrared heater that operates between 600° F to 1200° F and would offer the thermoforming industry, as well as others, a cost-effective product to reduce operating costs while maintaining part quality. With this invention, the heater is non-catalytic, highly efficient, converting convection energy to radiant energy, has excellent temperature uniformity, and has an ideal temperature range for the thermoforming process. Immediate and future applications for the invention include: thermoforming ovens, powder coating curing ovens, and paper drying ovens.

Finally, a brand-new program consisting of two-day workshops and live webcasts on Combustion Basics and Combustion Safety will be starting soon. This program is sponsored jointly by Cleveland State University, Dominion East Ohio, and Combustion Safety, a division of CEC Consultants. For more information about these courses or research projects, contact Dr. Mounir Ibrahim at (216) 687-2580. ■

## Parker Hannifin *continued from page 1*

continue the upgrade of the equipment so this lab remains state-of-the-art.”

The lab is enhancing and allowing the development of new courses by providing hands-on, practical application, through demonstrations and experiments, of fluid power and its control. The lab is enabling students to develop and validate models of control systems for hydraulic components using modern computer-aided engineering tools to compress the design and verification steps into one seamless process. These tools bridge the gap between control theory and the engineering control application, thereby enhancing the learning environ-

ment. Using these processes in the lab, students move seamlessly from control theory, system modeling, and simulation to real-time control of physical systems.

Parker Hannifin also presented scholarships to students Mandeep Singh Sahota, Iyinola Adesulu and Jael Panagaris during the ceremony.

“This partnership between the Fenn College of Engineering and Parker Hannifin Corporation benefits our students, the corporation and industry throughout Northeast Ohio. Maintaining a state-of-the-art laboratory in motion and control, integrating its use into our

curriculum, and exposing our students to the latest developments in technology will enhance their education and ability to be productive engineers. Our engineering graduates form the backbone of Northeast Ohio industry. The investment by Parker Hannifin in this laboratory is a win-win situation for everyone,” stated Dr. Hemann. Dr. Mounir Ibrahim, Chairman of Mechanical Engineering, adds “I’d like to thank Parker Hannifin for its additional \$10,000 gift for the enhancement of the lab. We would like this lab to be a show-case for the Parker Hannifin Corporation.” ■

# Focus on FACULTY

## Mr. Donald Zeller

Department of Engineering Technology

Donald Zeller is an assistant professor of Engineering Technology in the Fenn College of Engineering. He holds degrees from the University of Notre Dame as well as MIT, and brings about thirty years field experience to the classroom. Zeller joined the Fenn College of Engineering as a full time assistant professor six years ago in the hopes of handing over the reigns of technology application to the next generation, but has been teaching part-time at Cleveland State in the Technology Department since 1974. Over the years he has taught a wide range of courses including computer systems technology, advanced circuit analysis, and power electronics, to name a few. He has been commended by many students from various departments as being a great teacher who is passionate about his work.

Zeller presently splits his time between teaching two PLC classes, Programmable Logic Controllers, at the University, and researching information for a Crack Detection system at the NASA Glenn Research Center. The Crack Detection system is an attempt by the aerospace industry to examine jet engines for cracks or fatigue while still in the air in the hopes of defusing problems before they arise.

Other research also includes an applica-



tions project for Saint -Gobain Crystals & Detectors formerly Bicon Inc., a multi-divisional company that works with growing crystals for scanners. For four years Zeller worked on the team that designed a control box, which regulated the temperature and rate of growth in the furnace.

Since the Engineering Technology program at CSU is a 2+2 program, most of Zeller's students already have their associate's degree in Technology from an accredited junior college and work part-time while attending the university. The nature of the course, being a hands-on applications class, allows them to immediately integrate what they learn from his class in their jobs. "It's a neat feeling to see my students taking what I teach them in the classroom and applying it in actual job related situations," exclaims Zeller.

Even Dr. Fred Shoenig retired director of the AMC, required his student workers to first take Zeller's PLC course before working on any projects. One might say he teaches the ABC's of PLC's. The course is taken not only by students in Engineering Technology, but also Electrical, Industrial and occasionally Chemical Engineering majors. Considering the significance and

importance of this course, Zeller works hard to keep all the equipment for the students state-of-the-art. Donations from Rockwell Automation, AutomationDirect, and Microtek help keep his courses at the forefront of technology. During his career, Zeller has brought the University more than \$430,000.00 worth of in-kind gifts and continues to bring equipment, and software to help the Department and College.

Above being a teacher though, Zeller is a mentor to his students. He not only gives them the basic information they need to succeed in the world of industrial factory automation, he attempts to imbue them with the enthusiasm and commitment he himself brings to the field. "To successfully solve a problem, to see something that you designed with your own hands work, is a great feeling." A feeling he hopes his students enjoy, and will continue to enjoy throughout their duration in the field.

"I like seeing the results of my labor," Zeller comments, "and teaching gives me instant feedback." With such a strong and diverse group of people, both students and faculty, who are dedicated to helping each other reach higher highs, the feedback is almost always positive.

To reach Don Zeller call (216) 687-2559 or email him at [d.zeller@csuohio.edu](mailto:d.zeller@csuohio.edu). ■



Parker Hannifin presented three scholarships to engineering students during the laboratory dedication. Pictured (l-r) are: Marwan Kashkoush, President, Hydraulics Group, Dan Serbin, Vice President, Human Resources, Mandeep Singh Sahota, Patrick Parker, Chairman Emeritus, Jael Panagaris, Paul Klein, Director, CSU Career Services, Iyinola Adesulu, John Hemann, Interim Dean, Fenn College of Engineering, Mounir Ibrahim, Chairman, Mechanical Engineering Department and Michael Schwartz, CSU President.

## Former Dean of Engineering Celebrates 90 Years

Friend, advisor, professor, administrator...Dr. William Patterson fulfilled all of these roles during his 35-year tenure at Fenn College and Cleveland State University.

Dr. Bill Patterson started at Fenn College in 1936 after graduating with his doctorate in mathematics from The Ohio State University. As an assistant professor in mathematics, Dr. Patterson recalls, "I truly enjoyed teaching and the close relationships I was privileged to have with so many of my students." He served as faculty advisor for the Lambda Tau Delta fraternity for many years, coached Fenn's varsity tennis team, and was Director of Student Activities for a year. Through all these positions his fondest memories are of talking and bantering with the students. "How proud I am of so many alumni who have accomplished so much in life for themselves, their families, and other beneficiaries because of their Fenn education and experience," states Dr. Patterson in his memoirs.

Dr. Patterson went on to serve Fenn College as Registrar and in the College's personnel department from 1944 to 1952. During this time he participated in the interviewing, testing and counseling of veterans. He ironed through the intricacies of the G.I. Bill of



*Dr. William Patterson*

In 1952, G. Brooks Earnest appointed Dr. Patterson Dean of the Engineering College. He worked with faculty to strengthen and improve programs, so that by the end of the 1950's, the Engineering School had gained full accreditation from The Engineers Council for Professional Development. "The Engineering School faculty took justifiable pride in our graduates for they proved to be well prepared for the State of Ohio's examination to qualify for a professional engineer's license," states Dr. Patterson. "Throughout the 1950's Fenn made steady progress in gaining recognition and respect for its cooperative

Rights with the Veterans Administration, a bill, coupled with Fenn's cooperative education plan that attracted many veterans to the school. He also saw the passing of Fenn's first president, C.V. Thomas and subsequent appointments of Edward Hodnett and G. Brooks Earnest.

education plan, academic standards, and the quality and success of its alumni."

In 1960, Dr. Patterson was appointed the first Provost of Fenn College, having jurisdiction over all academic affairs of the college. He formed a cabinet of academic leaders who were instrumental in developing a ten-year plan for Fenn. He played a very large role in Fenn College transforming to Cleveland State University. "On March 10, 1965 the Cleveland State University and the Fenn College Trustees signed the necessary papers making Fenn the nucleus of a most promising Cleveland State University effective September 1, 1965." Dr. Patterson completed a successful term as provost and went on to serve the University as Budget Officer until his retirement in 1971.

Dr. William Patterson truly played a remarkable role in the development of Fenn College and transformation into Cleveland State University. Many alumni sent well wishes to him as he celebrated his 90th birthday in September, 2001. In honor of his tremendous contribution toward the growth and development of Fenn College and Cleveland State University, an endowed scholarship will be established in his name. For more information about this scholarship, call (216) 687-5513. ■

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## Cleveland State University

FALL/WINTER 2002

# Fenn Focus

Fenn College of Engineering  
Cleveland State University  
2121 Euclid Avenue SH 104  
Cleveland, Ohio 44115

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