College of Engineering
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September 2001

Administrative Appointments

Dr. Issam Harik, civil engineering, has been appointed Chair of the Department of Civil Engineering for a four-year term effective July 1, 2001.

Dr. Alan Male, CRMS and mechanical engineering, has been appointed Interim Director of the College's Electron Microscopy Facility for a one-year term effective July 1, 2001. Dr. Male will continue in his current role as Associate Dean for Research and Graduate Studies and Director of the Centerfor Robotics and Manufacturing Systems during the term of this appointment.

Dr. Vijay Singh, electrical and computer engineering, has been appointed as Interim Director of the College's Center for Micro-Magnetic and Electronic Devices for a one-year term effective July 1, 2001. Dr. Singh will continue in his current role as Chair of the Department of Electrical and Computer Engineering during the term of this appointment.

New Faces

Dr. Robert Adams, electrical and computer engineering, is an assistant professor in the department. Dr. Adams received his Ph.D. degree from Virginia Polytechnic Institute & State University where he was also employed. His areas of interest are in electromagnetics and wireless communications.

John Barnett, biosystems and agricultural, is a research engineer joining the department staff in July 2001. John received his BSAEN degree from UK in Spring 2001. He is interested in the bioenvironmental area, and is working primarily on research projects and data acquisition at the new UK College of Agriculture Animal Research Center in Woodford County. John works with

faculty members Drs. Dwayne Edwards, Joe Taraba, Rich Gates, Steve Workman and Jose Bicudo on their projects at the farm.

Dr. José Bicudo, biosystems and agricultural engineering, joined the Department in January 2001, as an Assistant Extension Professor specializing in livestock systems engineering, particularly dairy and beef facilities and forage/pasture systems. A native of Brazil (pronounce his first name the Portuguese way,"Joe-say"), Dr. Bicudo holds a degree in environmental engineering from Mauá School of Engineering, São Paulo, Brazil and a Ph.D. from University of Newcastle upon Tyne, England. He is also a national of Portugal, where he worked for seven years at the National Laboratory of Civil Engineering in Lisbon (1990 to 1997). In 1997 he came to the United States, working first as a post-doctoral research associate in the Department of Biological and Agricultural Engineering, North Carolina State University with UK BAE alumnus Dr. Phil Westerman (B.S. '69, M.S. '72, Ph.D. '74). He later served as an extension engineer in the Department of Biosystems and Agricultural Engineering, University of Minnesota in 1998 with statewide responsibilities as a swine environmental specialist.

Lee Brion, engineering computing services, joined the staff as a Information Systems Support Specialist in August 2001. Lee comes to Computing Services with an extensive background in electronic engineering. Since he just arrived, his name does not appear in the Engineering Directory. His telephone number is 257-1752.

Dr. Czarena Crofcheck, biosystems and agricultural engineering, joined the faculty in April 2001 as an assistant professor in April of 2001. Dr. Crofcheck completed her Ph.D. degree at UK under the direction of Drs. Fred Payne, BAE, Pinar Menguc, ME. Her dissertation topic was characterization light scattering in milk for fiber optic applications. Dr. Crofcheck received her B.S. and M.S. degrees in chemical engineering from Michigan State University and UK, respectively. Her future research efforts will focus on downstream bioprocessing and bioseparations. She is planning to collaborate with Drs. Sue Nokes and Payne, complementing their current research endeavors.

Dawn Gaye, Shaver Engineering Library, is a Library Technician. Dawn will be responsible for monograph ordering for the Science and Engineering Libraries Team and serials maintenance for the Engineering Library. Dawn

has been with the University for more than 20 years and comes to us from Special Collections and Archives.

Dr. Ari Geertsema, chemical and materials engineering, has been appointed as associate professor in the department as well as the director of the Center for Applied Energy Research. Dr. Geertsema received a Ph.D. in chemical engineering from the University of Karlsruhe in Germany in 1976 and an M.B.A. from the University of Potchefstroom in South Africa. He has more than 30 years of experience in industrial chemistry, chemical engineering, plant operations, and research and development. Most recently, he served as gas processing manager at the Commonwealth Science and Industrial Research Organization in Australia. His professional awards include the 1994 Industrial Chemistry Medal from the South African Institute of Chemistry for promoting industrial chemistry and university-industry interactions and the 1993 Stokes Award from the International Pittsburgh Coal Conference for leadership in commercialization of coal conversion technologies.

Dr. Paul W. Goodrum, civil engineering, has joined the department as an assistant professor in the area of construction management. He received his Ph.D. degree from the University of Texas at Austin.

Danielle Green, electrical and computer engineering, is a Staff Support Associate responsible for student records.

Dr. Bruce Hinds, chemical and materials engineering, has joined the department as an assistant professor. Dr. Hinds received his Ph.D. in Inorganic Chemistry from Northwestern University in 1996. Later post-doctoral research at North Carolina State University and Tokyo Institute of Technology were with Physics and Electrical Engineering departments. His research interests include semiconductor interface states, thin film processes, inorganic chemical synthesis, molecular electronics and nano-scale device fabrication.

Dr. Jane Hayes, computer science, joined the department as an assistant professor n January 2001. She received her Ph.D. degree in Information Technology from George Mason University. Prior to joining the University of Kentucky, Dr. Hayes served as Corporate Vice President and Manager of the Integrated Systems Technology Operation at Science Applications International Corporation (SAIC). She has more than 15 years experience in

software engineering, software verification and validation, software testing and over 8 years experience on software safety systems.

Dr. Marwan K. Khraisheh, mechanical engineering, has joined the ME faculty as an assistant professor. Dr. Khraisheh, who received his Ph.D. degree from Washington State University. His research interests include manufacturing processes, superplasticity, deformation of advanced materials, and solid and fracture mechanics. He is a member of the American Society of Mechanical Engineers AMD-MD joint committee on constitutive equations.

Dr. Daniel Lau, electrical and computer engineering, has joined the faculty as an assistant professor. His areas of research interests are image processing and digital communications. Dr. Lau received his Ph.D. degree from the University of Delaware. Prior to joining the ECE Department, Dr. Lau was employed at Aware, Inc. as an ADSL Engineer.

Mary McBeath, Engineering Administration, is the College's new Business Officer, effective September 4. Mary (her last name is pronounced "McBeth") comes to the College from the UK NSF EPSCoR Office, to become the new College Business Officer, effective Tuesday, September 4, 2001. She will work with Tom Moore in learning various operations of the College during the Fall semester before Tom leaves in December. Mary is a CPA, and holds a BS degree in accounting from UK. She has more than 12 years of experience as an accountant and auditor, and formerly worked with the Kentucky Transportation Cabinet and the Kentucky Inspector General's Office. She is also experienced in grant writing and contract administration.

Wayne McBride, Kentucky Transportation Center, is an Engineer Technician with the Center's Pavement and Materials Section. He began employment in July 2001.

Mr. Paul Piwowarski, computer science, joined the CS faculty in August 2001. Dr. Piwowarski's primary responsibilities will be in teaching undergraduate survey courses.

Brad Rister, Kentucky Transportation Center, joined the Center in March 2001 as an Engineer Associate II - Research in the Pavement and Materials Section.

David Schultz, Kentucky Transportation Center, is an Engineer Associate I - Research. He also joined the Center's Pavement and Materials Section in March 2001.

Dr. Mukesh Singhal, computer science, has been appointed as the Gartner Group Chair in Network Engineering as well as a professor of computer science. Dr. Singhal is a former program director for the National Sciene Foundation's Operating Systems and Compilers Program, Division of Computer-Communications Research. He received his B.E. degree in electronics and communications engineering from the University of Roorkee and his Ph.D. degree from the University of Maryland. His research interests are in the area of distributed computing systems, operating systems, and computer security; wireless networks and mobile computing, high-speed networks; and databases, reliable systems, and performance modeling. Dr. Singhal is a Fellow of the Institute of Electrical and Electronic Engineers, is Editor of the publication Computer Networks, and is Associate Editor of the IEEE Transactions on Data and Knowledge Engineering. He has authored four books, published more than 65 refereed journal publications, presented more than 80 presentations, and has directed 21 doctoral students.

Rick Spencer, engineering communications, joined the communications team in May 2001. He is responsible for the College's web site. Rick's previous educational background is in philosophy but over the past year he has developed proficiencies with variety of web design tools, and dramatically improved his understanding of network administration. His love for web design shows: over the summer he launched a movie review website with some friends, retooled the College of Engineering homepage not once, but twice. He is currently working on an Associates Degree in Computer Information Systems-Networking at LCC. You may reach Rick at 257-3343 or <rlspen0@engr.uky.edu>.

George Spiggle, electrical and computer engineering, is an Electronics Technician, primarily in charge of equipment in the Department's research laboratories.

Eric Thigpen, engineering computing services, joined the staff in August 2001 as an Information Systems Technical Support Assistant. Most recently Eric worked in Information Services in McVey Hall. A former Marine, he is pursuing a degree in telecommunications. Eric also did not make the

Engineering Directory before it was published. His telephone number is 257-3489.

Dr. Lee T. Todd, Jr., electrical and computer engineering, in addition to his appointment as UK's eleventh president, has rejoined the department as a professor. A former recipient of UK's great teacher award, Dr. Todd was on the then electrical engineering faculty for nine years before leaving to found the high-tech companies, Projectron and DataBeam. He received his BSEE degree from UK in 1968 and his M.S. and Ph.D. degrees from the Massachusetts Institute of Technology in 1970 and 1973 respectively.

Dr. Fuqian Yang, chemical and materials engineering, who received his Ph.D. degree from the University of Rochester, has joined the department at the assistant professor rank. Dr. Yang's research interests include micromechanics of advanced amterials, characterization of materials properties by using such techniques as nanoindentation and atomic force microscope, grain boundary diffusion, grain boundary migration and electromigration, micromechanics of thin films, microelectronicomechanical systems (MEMS), electromechanical behavior of piezoelectric materials, particle adhesion, slurry wiresaw slicing, electrorheology, magnetorheology and their applications, and mechanics of flexible media.

Dr. Tongguang (Tony) Zhai, chemical and materials engineering, is a new assistant professor in the department. He earned a D.Phil. degree from the University of Oxford, England. Dr. Zhai's research interests are primarily concentrated in the areas of processing, properties and microstructure of aluminum alloys, fatigue life prediction and fatigue of metallic materials, optimization of the mechanical properties through microstructure control in metallic materials, failure analysis, materials characterization using transmission electron microscopy, scanning electron microscopy, electron back scatter diffraction, nanosecond time-resolved acoustic microscopy, X-ray diffraction.

Congratulations to faculty who were promoted and/or tenured in 2001

Dr. Gail Brion, civil engineering, to Associate Professor with Tenure.

Dr. Stephen Gedney, electrical and computer engineering, to

Professor.

Dr. Ranu Jung, biomedical engineering**,** to Associate Professor with tenure.

Dr. Andrew Klapper, computer science, to Professor.

Dr. Barbara Knutson, chemical and materials engineering to Associate Professor with tenure.

Dr. Sue Nokes, biosystems and agricultural engineering, to Associate Professor with tenure.

Dr. Steve Workman, biosystems and agricultural engineering, to Associate Professor with tenure

Retirements

Dr. Raymond Distler, associate professor of electrical engineering, retired in December 2000 after 43 years of service on the EE faculty.

Dr. Charles Hamrin, professor and former chair of chemical engineering, retired on June 30, 2001 after 33 years of service.

Awards and Honors

Dr. Zhi Chen, electrical and computer engineering, has been elected to Senior Member of Institute of Electrical and Electronics Engineers (IEEE). Currently, eight percent of the organization's 340,000 members are Senior Members. In addition, Dr. Chen will be listed in Who's Who in America, 56th ed., Marquis, 2001.

Dr. Don Colliver, biosystems and agricultural engineering, has been named President-elect the 50,000 member American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE).

Dean Thomas Lester, engineering administration, received Rodney D. Chipp Memorial Award from the Society of Women Engineers. The award celebrates and recognizes a man who has contributed significantly to the acceptance and advancement of women in the engineering field. He received the award at the SWE National Conference, Denver, Colorado, June 30.

Lou Takacs, engineering administration, received the Clement J. Freund Award from the American Society of Engineering Education. The award honors an individual in business, industry, government or education who has made a significant positive impact on cooperative education program in engineering and engineering technology. He received the award at a special ceremony at the ASEE annual conference in Albuquerque, New Mexico on June 27. Lou was honored for his sustained contributions to cooperative education over many years, and the enthusiasm with which he has advocated cooperative education throughout his distinguished career.

Dr. Greg Wasilkowski, computer science, has received the 2001 Prize for Achievement in Information-Based Complexity. The prize consists of $3000 and a plaque. Among Wasilkowski's seminal contributions to information-based complexity are analyses of the following: average case complexity of high-dimensional integration and approximation, complexity of path integration, average complexity of global optimization, probabilistic analysis of clock synchronization in distributed networks, and an upper bound on the exponent of discrepancy.

Journal Publications

Dr. Stephen Gedney, electrical and computer engineering, published the paper "High-Order Method of Moment Solution of the Scattering by Three-Dimensional PEC Bodies using Quadrature Based Point Matching," **Microwave and Optical Technology Letters**, June 5, 2001.

Dr. Vijay Singh, electrical and computer engineering, has been notified that his article "Modeling of Electron Transport and Luminance in SrS:Cu,Ag a.c. Thin Film Electroluminescent Display Devices" (with A. Aguilera, A. Garcia, and D. Morton), has been accepted for publication in the **IEEE Transactions on Electron Devices Journal.**

Dr. Jun Zhang, computer science, published the journal article, "Enhanced multi-level block ILU preconditioning strategies for general sparse linear systems", with Y. Saad, in the **Journal of Computational and Applied Mathematics**, Vol. 130, Num. 1-2, pp. 99-118, 2001. Additionally, he published the papers, "A class of multilevel recursive incomplete LU preconditioning techniques", in the **Korean Journal of Computational and Applied Mathematics**, Vol. 8, Num. 2, pp. 213-234, 2001 and "Unconditionally stable finite difference scheme and iterative solution of 2D microscale heat transport equation", with J. Zhao, in the **Journal of Computational Physics**, Vol. 170, pp. 261-275, 2001.

Books and Other Publications

Dr. Sergio Serrano, civil engineering, has published the book **Engineering Uncertainty and Risk Analysis: A Balanced Approached to Probability, Statistics, Stochastic Modeling, and Stochastic Differential Equations**. The book is 472 pages, with 151 solved problems, 50 computer programs (MAPLE), 136 figures, 51 data and statistical tables, 152 proposed problems, 145 answers to problems, a bibliography and index. It is softcover and its ISBN number is ISBN: 0-9655643-8-X. An accompanying instructors manual is also available. For more information visit: http://home.earthlink.net/~hydroscience

Presentations

Drs. John Baker and Vincent Capece, mechanical engineering, Paducah program, and **Dr. Rhonda Lee**, chemical engineering, Paducah program, presented the paper “Integration of Finite Element Software in Undergraduate Engineering Courses" at the 2001 ASEE Annual Conference and Exposition, June 24-27, 2001, Albuquerque, New Mexico.

Dr. Vincent Capece, mechanical engineering, Paducah program, presented the paper “Numerical Investigation of Linear Oscillating Cascade Aerodynamics,” AIAA Paper No. AIAA-2001-3998, at the 37th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Salt Lake City, Utah, July 8-11, 2001.

Dr. J. Robert Heath, electrical and computer engineering, presented the paper "Modeling, Design, Virtual and Physical Prototyping, Testing, and Verification of a Multifunctional Processor Queue for a Single-Chip Multiprocessor Architecture", with A. Tan, **Proceedings of the 2001 IEEE International Workshop on Rapid Systems Prototyping**, Monterey, California, 6 pps. June 25-27, 2001.

Dr. Heath also presented the paper "Routing Algorithms for Programmable Logic Device Design and Manufacturing Test Development", with N. J. Vocke, C. E. Stroud and J. Emmert, *Proceedings of the 2001 IEEE AUTOTESTCON Conference,* Valley Forge, Pennsylvania, 15 pps. August 20-23, 2001.

Dr. I. Jawahir, mechanical engineering and CRMS, attended the 50th General Assembly CIRP Meeting held in Nancy, France, August 19-25, 2001 and the 4th CIRP International Workshop on Modeling of Machining Operations, Delft, Netherlands, August 17-18, 2001. Dr. Jawahir served as a session chair for the 4th CIRP International Workshop and is currently serving as the Vice Chairman of the international working group through 2002. He also presented the paper entitled, "On Modeling the Influence of Thermomechanical Behavior in Chip Formation during Hard Turning of 100Cr6 Bearing Steel." Additionally, Dr. Jawahir will also be attending the STC meeting on Cutting and Optimization in Nancy, France.

Dr. Rhonda Lee, chemical and materials engineering, Paducah program, presented an invited research poster entitled "The Effect of Particle Morphology on Bulk Powder Handling" at the International Fine Particle Research Institute s (IFPRI) 2001 annual meeting, June 6, at the University of Florida, Gainesville.

Dr. Alan Male, CRMS, presented the paper "Improving Columnar to Equiaxed Transition During Solidification of Welds" at the MAX International Conference, Cleveland, Ohio, May 5.

Dr. James McDonough, mechanical engineering, presented two papers at PARALLEL CFD 2001 Egmond aan Zee, Netherlands, May 21-23. They are "A multilevel, parallel, domain decomposition finite-difference Poisson solver" (with A. Schueller) and "Parallelization of a chaotic dynamical

systems analysis procedure" (with T. Yang). He also chaired a session on parallelization of inconpressible flow simulations.

Dr. Dusan Sekulic, CRMS, a paper based on his brazing program research entitled "Modeling and simulation, Aluminium brazing" at the 6th International Brazing, High temperature Brazing and Diffusion Bonding Conference, Aachen, Germany, May 10, 2001.

Dr. Sekulic was also invited to present his research at the University of Novi Sad in Belgrade, Yugoslavia, May 11. His lecture was part of a new series established to promote interactions between that institution and their alumni and international research community. During his visit, Dr. Sekulic also visited with colleagues at the University of Belgrade and the Vinca Institute.

Dr. Naresh Shah, CFFLS and chemical and materials engineering, presented the poster "Hydrogen Production by Catalytic Decomposition of Methane" with **Dr. Devadas Panjala and Dr. Gerald Huffman,** at the 17th North American Catalysis Society Meeting, Toronto, Canada, June 3-8, 2001.

Dr. Vijay Singh, electrical and computer engineering, gave the keynote address at the VII International Conference on Advanced Materials conference, Cancun, Mexico, August 28.

Dr. Andrew Wala, mining engineering, along with mining Ph.D. student Jason Stoltz, attended the 7th International Mine Ventilation Congress, Krakow, Poland, June 17-22, 2001. At the Congress, Dr. Wala presented the paper "Numerical and Experimental Study of a Mine Face Ventilation System for CFD Code Validation" co-authors **Dr. Jamey Jacob,** mechanical engineering, and Jason Stoltz. Dr. Wala also chaired the session on Ventilation Networks and Simulation Tools.

Dr. Yuming Zhang, electrical and computer engineering and CRMS, presented the paper "Single-Pass Arc Welding of Heavy Section Materials" at the MAX International Conference, Cleveland, Ohio, May 5.

Research Funding

The **Department of Biosystems and Agricultural Engineering** has increased its research funding from an annual average of $248,000 over the previous three years to over $1.4 million in 2000-2001. With the addition of several recently awarded grants, BAE is on track to top that funding level for external grants in 01-02.

Dr. Vincent Capece, mechanical engineering, Paducah program, has received a research grant from the Battelle Memorial Institute for his project "An Experimental Investigation of Flutter Precursors in Compression Systems." He is also the recipient of a grant from the NASA Glenn Research Center for his project " An Experimental and Computational Investigation of Airfoil Unsteady Aerodynamics at Large Mean Incidence."

Dr. Richard Gates, biosystems and agricultural engineering, is the principal investigator on a grant from the USDA-IFAFS entitled "Reducing ammonia emissions from poultry houses by enhanced manure and diet management". The grant is for $874,000.

Dr. J. Robert Heath, electrical and computer engineering, is the principal investigator on the project "Development, Prototyping, and Experimental Evaluation of a High Performance Processor Architecture for 2-Dimensional 5 X 5 Correlation of Full Page 600 DPI Images", funded by Lexmark International, Inc. The project runs from May 2001 - May 2002 and is in the amount of $25,000.

Dr. Timothy Stombaugh, biosystems and agricultural engineering, has received funding for his proposal " Sensors for Delineation of Spatial Management Zones" from the USDA-CSREES NRI. The grant is funded for $130,000.

Dr. Miroslaw Truszczynski, computer science, is the principal investigator, and **Drs.Victor Marek and Raphael Finkel**, computer science, are co-Principal investigators, of the grant "Computational knowledge representation" from the National Science Foundation. The grant is in the amount of $550,000 and runs from 2001-2004.

Professional Activities

Dr. James McDonough, mechanical engineering, served as a member of the International Organizing Committee for PARALLEL CFD 2001, Egmond aan Zee, Netherlands, May 21-23.

Dean Thomas Lester, engineering administration, has been nominated to the Secat Board of Directors and will serve as vice-chair.

Dr. Alan Male, CRMS and mechanical engineering, attended the CIRP Scientific and Technology Meeting, Nancy, France, August 20-26, 2001. The Center for Robotics and Manufacturing Systems is an associate member of CIRP and Dr. Alan Male is the associate member representative.

Dr. M. Pinar Mengüç, mechanical engineering, chaired the Third International Symposium on Radiative Transfer, Antalya, Turkey, June 17-22, 2001. More than 100 participants made 70 presentations. The best 37 papers will be published in a special issue of the **Journal of Quantitative Spectroscopy and Radiative Transfer**. Dr. Mengüç also chaired the Symposium in 1995 and 1997.

Dr. Sue Nokes, biosystems and agricultural engineering, served as Meetings Chair for the Institute of Biological Engineering annual meeting, Sacramento, California, July 27- July 30, 2001.

Dr. Jun Zhang, computer science, was appointed as Associate Editor of the **Korean Journal of Computational and Applied Mathematics**. He will serve a three year term from July 2001 to June 2004.

Public Service and Outreach Activities

Dr. Jose Bicudo, biosystems and agricultural engineering, developed beef facility guidelines (Model Cattle Handling Guidelines) for the Governor's Office of Ag Policy and the Agricultural Development Board. These guidelines were presented and adopted in June, and will provide the basis for distribution of Phase I Tobacco Funds to producers participating in county programs where cattle handling facilities will be constructed.

Dr. Scott Shearer, biosystems and agricultural engineering, represented UK this spring in Washington, D.C. as part of a contingent to present activities and needs in Precision Agriculture to legislators and others.

Dr. Scott Shearer, biosystems and agricultural engineering, is initiating a new program jointly with Jessamine County high schools to introduce students to engineering as a part of their high school experience. Dr. Scott Shearer head of this program.

Dr. Richard Warner, biosystems and agricultural engineering, developed guidelines and programs for lagoon liners to be adopted by EPA Region 4 as a part of a project sponsored by the KY Division of Conservation. Several agency personnel were involved in training as a part of this program including USDA NRCS and Cooperative Extension personnel.

Workshop Development and Presentation

Dr. Rhonda Lee, chemical and materials engineering, Paducah program, conducted a training course on modeling of aerated stabilization basins for International Paper Company, June 11-15.

Student News and Activities

Mari Chinn, doctoral student in biosystems and agricultural engineering, is a National Councilor for IBE, The Institute of Biological Engineering, and organized a highly successful student poster competition for the 2001Annual IBE meeting in Sacramento, California, July 27-July 30, 2001.

Angela Green, biosystems and agricultural engineering senior, placed second in the national student poster competition at the 2001 ASAE Annual Meeting, Sacramento, California, July 29-August 1, 2001. The title of her poster was "Saccharification of Cellulose by Cellulase Produced by Clostridium thermocellum in Solid-State Culture". Co-authors included J. Parakkat, S. Nokes and H. Strobel.

Julia Parakkat, biosystems and agricultural engineering senior, placed first in the national student poster competition at the 2001 ASAE Annual Meeting, Sacramento, California, July 29-August 1, 2001. The title of her poster was "Solid-State Cultivation of Clostridium thermocellum on Paper Pulp Sludge". Co-authors included A. Green, S. Nokes and H. Strobel.

Christy Trinkle, BSME '01, is the first recipient of of the Margaret Ingels Society of Women Engineers Fellowship. Christy will receive a $2,500 fellowship to pursue graduate studies in mechanical engineering beginning Fall 2001.

Student Organization News

AIChE Chartered at Paducah

Chemical engineering students and faculty at the College of Engineering, Paducah Program, have successfully obtained a charter for a student chapter of the American Institute of Chemical Engineers (AIChE). Under the leadership of past club president Cary Hamblin (BSCME, 2001), the students petitioned for their charter in November 2000 and were approved by the AIChE Student Chapters Committee on June 1, 2001. This year's chapter president, Jenny Suitor, expects an active year, including an outreach project to Girl Scouts in Western Kentucky, active participation in E-Day, and entry into the AIChE chemically-powered car competition (comparable in many respects to the CE "concrete canoe"), an active seminar schedule, research presentations at regional and national conferences, and inreach to sophomores taking their first chemical engineering course. Students will also attend the AIChE Annual Meeting in Reno, Nevada this November, and the AIChE Southern Region Student Conference in San Juan, Puerto Rico in April. Dr. David Silverstein (CME) is the chapter faculty advisor.

ASAE Tractor Teams Pulls Its Own Weight at National Competition

A team of biosystems and agricultural engineering students narrowly missed out on a top-five finish in the ASAE International Student Design Quarter-Scale Tractor Competition, June 1-3 in East Moline, Illinois. The Wildcats

nevertheless towed home a wagon-full of trophies, as they received coveted design awards for Serviceability, Appearance, Craftsmanship, and Safety. They also collected the Sportsmanship Award and the Cook-Off Award. Twenty-six collegiate teams from across the United States, Canada, and Malaysia competed.

The Quarter-Scale Tractor Competition challenges agricultural engineering students to demonstrate their design skills by developing a low- cost, high-performance tractor measuring no more than 60 inches wide and 96 inches long. Each team is provided a 16-horsepower engine and set of tires. Entries were judged on four elements: a written design report, an oral team presentation, individual design, and a performance competition. For the performance part, the tractors pulled a weight-transfer sled where the load increases with distance pulled. Advisors for the group include Dr. Scott Shearer, Dr. Tim Stombaugh, Dr. Fred Wells and BAE Engineering Associate Tim Smith.

COE-Paducah Charters ASME Student Section

The **College of Engineering, Paducah Program**, has received approval from the **American Society of Mechanical Engineers** (ASME) to form a student section of ASME. It is the 33rd Student Section in the ASME Central Region. Michael Molnar, ASME Regional VP, and Thomas Wendt, ASME Regional Director, officially presented the charter at a ceremony held at Crounse Hall, on August 29. There are currently 15 members of the chapter. Dr. John Baker serves as chapter advisor. Officers for 2001-2002 are:

President: Jeni Dowell
Vice President: Alicia Crainshaw
Secretary: Randy Hibbs
Treasurer: Joe Caldwell
Program Director: Jonathon Crowder
Engineering Council Representative: Jamie Belt

Paducah Weightless Wildcats Flying High

The **Paducah Weightless Wildcats** (PaWWs) led by **Dr. Jack Leifer**, participated in NASA's Reduced Gravity Student Flight Opportunities

Program. Those participating are all majoring in mechanical engineering at the College's program in Paducah. They were led by **Corey Pace** with the flight crew consisting of **Jamie Belt, Michael McWaters, and Christopher Tempus**. The ground crew was made up of **Alicia Crainshaw, Jeni Dowell, Christopher Meyer, David Pugh, and Tracy Hodder Kulik**. The students' experiment, "Prediction of Low-Velocity Impact Forces Using On-Board Accelerometer Data in Zero-g" was an unqualified success, as the equipment worked flawlessly, allowing the flight crew to acquire over 50 good data sets during their two flights on the infamous NASA KC-135A "Vomit Comet". In addition to the flights, students were treated to special tours at the Johnson Space Center and Ellington Field that included various Shuttle simulators, the X-38 Station Return Vehicle, the interior of the Super Guppy Cargo airplane, and an up-close look at the WB-58 high altitude airplane. Funding for the trip was provided by the Kentucky Space Grant Consortium, The UK Vice Chancellor for Research, and the Paducah Extended Engineering Program. In addition, the assistance of Drs. Suzanne Smith and John Main, as well as the "original" Weightless Wildcats, was invaluable!

SWE Section Chartered at Paducah

The **College of Engineering, Paducah program**, has successfully chartered a new student section of the **Society of Women Engineers**. The national SWE Board of Directors unanimously approved the charter on April 28, 2001. **Dr. Rhonda Lee** is the organization's faculty advisor. **Jennifor Suitor** is president for 2001-2002. The organization will hold its Charter Celebration on Wednesday, September 12 from 5 - 7 pm in Crounse Hall. Among the activities that evening is the formal presentation of the chapter charter by Marilyn Reeder, FY01 Region G SWE Director, and Gail Mattson, FY01 SWE President.

UK SWE Makes Impressive Showing at Annual Meeting

Members of the **UK Chapter of SWE** received honors in several competitions at the SWE annual convention in Denver, Colorado in June. They include:

- SWE Team Tech received second place in its competition. Team member Melissa Clark presented the group's project, "Automation of

Vacuum Parts Stamping," completed in cooperation with Matsushita Appliance Corporation in Danville, Kentucky.

- Christy Trinkle, BSME '01, received third place in the Technical Presentation Competition for "Parametric Design and Finite Element Analysis of an Aluminum Solar Car Chassis."
- UK SWE was awarded the Membership Award for a medium section for recording the greatest percent growth of other medium section, from 48 to 100 which is a 108 percent growth.
- UK SWE also received an Honorable Mention in the Best Student Section for our Outreach Program.
- Bianca Hunter, 2001-2002 SWE president, received the General Motors Foundation scholarship for 2001-2002 from the national Society of Women Engineers. It is a $1,000 renewable scholarship.

Miscellaneous News

BAE Alumni Prominent in Academia

According to Dr. Linus Walton, professor of biosystems and agricultural engineering and associate dean for administration, College of Agriculture, the department has 27 alumni on the faculties at other colleges and universities. The Chairs (or Heads) at North Carolina State University, Auburn, Clemson and Arizona are all UK biosystems and agricultural engineering graduates.

Compressor Transferred to COE-Paducah

A low speed research compressor has been transferred from the University of California, Davis to the University of Kentucky. The Allison Engine Company, Indianapolis, Indiana, originally donated the $750,000 compressor to the University of California for use by Dr. Vincent Capece. After Dr. Capece joined the mechanical engineering faculty, Paducah Program, he worked to secure its transfer to the University of Kentucky. Dr. Capece will be using the compressor in conducting research in turbomachinery steady and unsteady aerodynamics. Additionally, this single stage machine will be used to demonstrate fluid mechanics principles for undergraduate and graduate classes and student classroom projects.

Construction Underway for Paducah Challenger Center and Crisp Building Replacement

After a ceremonial groundbreaking in April, construction is underway on the new Challenger Center and Crisp Building replacement. The new facility is scheduled occupancy in summer 2002. The ground floor will house Paducah Community College's Challenger Center, which will provide space related programs to stimulate interest in engineering, science and math in the region's middle school students. The second floor will be for the UK Graduate School, with classrooms, seminar rooms, and offices. A modern distance learning classroom is being planned to link with Lexington. The second floor replaces the Harry Crisp Center, the UK Distance Learning Center that was sold to Murray State University in 1998. Graduate offerings in support of non-thesis MS engineering degrees are being developed for distance learning delivery beginning fall semester 2002.

Paducah Faculty and Staff Participate in GRASP

Faculty and staff members from the College of Engineering, Paducah Program, along with faculty and staff from the UK College of Agriculture, provided two days of fun and educational opportunities for 150 fifth through eighth grade students in the Great River After School Program (GRASP). Students participating in GRASP were from Ballard, Carlisle, Hickman, and Fulton counties, which border the Mississippi River. On June 19, Dr. Sam McNeill, biosystems and agriculture engineering extension professor at the Princeton Research and Education Center, coordinated seven different workshop sessions on topics ranging from insects to uses for soybeans to global positioning systems in precision agriculture. On June 20, Dr. Bill Murphy, Director of the Paducah Extended Campus Programs, coordinated an Engineering Bowl competition as well as an egg-drop and bridge competition. All events were held on the Paducah Community College campus and were considered a great success by those participating.

Shaver Engineering Library Schedule for Fall 2001

Monday-Thursday 8am-Midnight
Friday 8am-8pm
Saturday Noon-8pm

Sunday 10am-Midnight

Exceptions:
Labor Day Observance
Closed - Saturday September 1-Monday September 3

Thanksgiving:
Wednesday November 21: 8am-4:30pm
Closed - Thursday November 22-Saturday November 24

Update on the College of Engineering, Paducah Program - A Celebration of Progress

Last May (2001) the UK College of Engineering, Paducah, held its first annual Outstanding Student Recognition Reception. Students, faculty, and staff selected Dustin Thompson (CME), Jamie Belt (ME), and Tim Mehta (ME) as Outstanding Engineering Students in the Paducah program.

With the arrival of the 2001 fall semester, the UK College of Engineering, Paducah, continues to show steady growth and progress. From modest beginnings in the fall of 1997 with approximately eighteen active students and seven course offerings, enrollment of active engineering students is expected to reach approximately 120 students this fall. Of that number, approximately forty-five students have achieved engineering standing for the fall semester. This fall the college will offer twenty-six engineering courses, three of which will be ITV courses from Paducah to Lexington. Eight students are candidates for graduation for December, 2001, while eight additional students should complete graduation requirements in May, 2002.

Paducah engineering students are now active members of student chapters of professional organizations: AIChE (Advisor: Dr. David Silverstein), ASME (Advisor: Dr. John Baker), AIAA (Advisor: Dr. Vince Capece), and SWE (Advisor: Dr. Rhonda Lee). The Paducah Weightless Wildcats (PAWWS) along with their faculty advisor, Dr. Jack Leifer, completed a successful experiment this summer in NASA's Weightless Wonder, a KC-135A used for zero gravity astronaut training.

On July 25 eight area professionals as well as Dean Tom Lester, Associate Dean G. T. Lineberry, Dr. Keith Rouch, and Dr. Kozo Saito joined with

Paducah engineering faculty and staff and representatives from Murray State University and Paducah Community College for the first advisory committee meeting. Industrial representatives attending included: Keith Ahern, Engineering Manager, USEC; Jeff Hall, Engineering Manager, Atofina; Greg Hansrote, Production Manager, Westvaco; Billy Harper, President, Harper Industries; Mike Kaler, Senior Engineer, TVA; John MacKellar, Plant Manager, LaFarge Corporation; Larry McGregor, Principal, Apex Engineering; and Mark Wolf, Senior Engineer, Air Products and Chemicals.

Drew A. Trammell, graduate of Trammell Home School and National Merit Finalist, has enrolled for the fall semester in the Paducah engineering program as a pre-chemical engineering major. As a National Merit Finalist, Trammell joins an elite group of students across the nation who scored in the top one-half of one percent on the PSAT, the Merit qualifying examination.

Upcoming Events

September 12

SWE Charter Celebration
College of Engineering, Paducah Program
5 - 7 pm
Crounse Hall
For more information, contact Dr. Rhonda Lee (270)534-6306 or <rlee@engr.uky.edu>.

September 28

Quadrangle Society Reception (prior to the UK Fellow's Dinner)
Hyatt Regency Hotel - Kentucky Room
5:30 - 7:00 pm
Black Tie
For more information, contact Betty Hickey at 7-3354 or <bphickey@engr.uky.edu>.

October 9

SWE Evening with Industry

Radisson Plaza Hotel - Lexington
7 - 10 pm

October 10

Career Fair
UK Student Center Grand Ballroom
10 am - 3 pm
Contact Sue Scheff at 7-4178 or <sscheff@engr.uky.edu>.

October 13

Engineering Homecoming Festivities
All activities are in the Engineering tent at the Corner of Farm Road and Nicholasville Road

9:30 AM - Breakfast
10:00 AM - What's New in the College of Engineering - Dean Thomas Lester
The anniversary classes of 1951, 1961, 1976 and 1991 will be recognized.

Cost - $5.00 before Sept 17. After, cost is $6.00.
Reservations are required. Contact Brenda McMurry at 7-1622 or <bmcmurry@engr.uky.edu>.

4:00 PM - Engineering Alumni Association Barbque
Cost $10.00

October 26

Dean's Advisory Board
Center for Aluminum Technology
Coldstream Research Campus
For more information, contact Mary Watts at 7-4597 or <mwatts@engr.uky.edu>.

Engineering Scholarship Banquet

Fasig-Tipton Kentucky (Newtown Pike)

Recpetion 6:30 pm
Dinner 7:00 pm
Program 8:00 pm

For more information, contact Betty Hickey at 7-3354 or <bphickey@engr.uky.edu>.