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1998**

Wright State University College of Engineering and Computer Science

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BITs & PCs

COLLEGE OF ENGINEERING AND COMPUTER SCIENCE

December 1998 Wright State University Dayton, Ohio 45435 Vol. 14 No. 9

Mechanical Engineering Professor Elected as ASME Fellow



Dr. Ramana V. Grandhi has been elected to the grade of Fellow in the American Society of Mechanical Engineers (ASME). The Fellow Grade

Currently, Dr. Ramana Grandhi is the distinguished professor of Mechanical and Materials Engineering at Wright State University where he directs 13 researchers as well as teaches engineering classes. His research interests are in multidisciplinary analysis and optimization, probabilistic mechanics, and metal forming.

Several prestigious awards including the DOW Outstanding Faculty Award given by ASEE, the Outstanding Engineers and Scientist Awards given by the Engineering and Science Foundation of Dayton, the Ralph Teeter Award given by SAE, the Up & Comers Award given

by Price Waterhouse, and the Continuous Quality Improvement Award given by Caterpillar, Inc., have been received by Dr. Grandhi as testament to his exemplary teaching and research skills. Recently, he has been appointed the University Professor title for his outstanding achievements. This title is awarded to individuals who have made outstanding contributions beyond the confines of their own discipline and are regarded as a role model for role models. Through his work and dedication, Dr. Grandhi has shown that he is a sterling role model and a true leader. We would like to congratulate Dr. Grandhi for his ASME Fellow Award.

is the highest elected grade of membership, the attainment of which recognizes exceptional engineering achievements and contributions to the engineering profession. Dr. Grandhi was chosen for his successful research, educational leadership, and outstanding contributions.

Dayton History Housed in the Russ Center

Lots of people dream of finding a treasure in the trash. That's exactly what happened to Bill Handler when his company, Handler Brothers Auto Parts, Dayton, OH, disposed of a load of starters and generators for Patterson Iron & Metal Co.

the development of the self-starter. Mr. Handler believes the starter he salvaged is one of the original self-starters built by C.F. Kettering and "the Barn Gang" in the Deeds Barn at 319 Central Avenue, Dayton, OH, sometime between 1911 and 1915.

In the process of taking the load to the scrap yard, Bill Handler noticed something unusual about one of the pieces—it looked older than the others and it had a tag on it that read "Dayton Engineering Laboratories Co." (DELCO). He saved this piece and spent over 25 years researching

The starter is currently on display through the end of the year in the lobby of the Russ Engineering Center. Take a moment as you pass through the lobby to stop and view this piece of history and read about how Bill Handler saved it from destruction.

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It's Your Career—Register as a Professional Engineer

Now that you're about to get your engineering degree, why not take the next step toward becoming a true professional—registration to become a Professional Engineer.

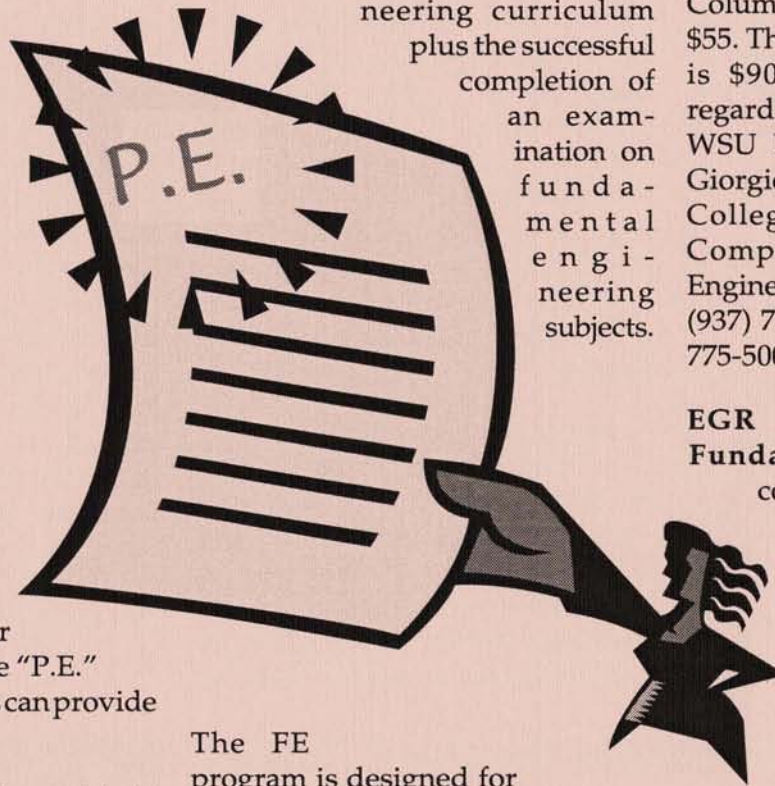
Every U.S. state, the District of Columbia, and the U.S. territories have laws regulating the practice of professions including law, medicine, and engineering. These laws protect the public health, safety, and welfare by insuring that those receiving licenses to practice have met certain minimum requirements of competence, ability, experience, and character.

Registration is the mark of a professional. The registration process demands an extra measure of competence and dedication. While not all engineers find registration mandatory for their chosen career paths, the "P.E." initials after their names can provide many advantages.

Registration laws vary from state to state and are exclusively under the control of the individual state legislatures. Generally, registration laws for professional engineers require graduation from an accredited engineering curriculum, followed by approximately four years of responsible engineering experience, and, finally, the successful completion of a written exam. (No credit is given for work experience gained prior to graduation, including co-op experience.)

New engineering graduates need not wait until they have four years of experience in order to start the registration process. Most state laws provide for a preregistration certificate for those who don't yet have four years of engineering experience. These are generally known as the Fundamentals of Engineering (FE) exam. The requirements for taking the FE are usually graduation from an EAC or ABET accredited engineering curriculum

plus the successful completion of an examination on fundamental engineering subjects.



The FE program is designed for new engineering graduates so they may begin the registration process while engineering subjects are still fresh in their minds. The certificate does not authorize the practice of engineering, but it does signify that the individual has successfully completed an exam in engineering fundamentals, which is the first part of the examination process for full registration. After acquiring the necessary engineering experience, those who have completed the FE exam need only complete the second portion of the exam—Principles and

Practices—relating to their particular field of speciality.

The FE examination will be offered to students in the College of Engineering and Computer Science on the campus of Wright State University. The registration deadline is January 25, 1999, for all non-students and February 8, 1999, for all students. Non-students are not eligible to take the exam at WSU, but must take the exam in Columbus. The fee for engineers is \$55. The fee for surveying students is \$90. For more information regarding the FE exam, contact the WSU Board Representative, Dr. Giorgio McBeath, Assistant Dean, College of Engineering and Computer Science, 405 Russ Engineering Center, Phone Number (937) 775-5005, FAX Number (937) 775-5009.

EGR 482 — Engineering Fundamentals (3 credit hour course)—is offered once each year during winter quarter. This course meets Tuesday and Thursday from 4:10-5:15 p.m. It is a review course to prepare students to take the FE exam and is highly recommended. Over 99% of the students who take this class pass the FE exam.

For information on future dates for the FE exams, you may contact:

**The State Board of Registration
For Professional Engineers
and Surveyors
77 S. High Street
16th Floor
Columbus, OH 43266-0314
Phone: (614) 466-3651
<http://www.peps.state.oh.us>**

FACULTY FACTS

A.A.S. Awwal, Ph.D., CSE, (with A.T.M.S. Khalid, MicroSoft, and M.S. Alam, Purdue University), has published an article entitled "KH-map: A new way of representing the hypercube structure" in the *Journal of Systems Architecture*, August, 1998, 44(11), pp. 873-885. He has also published (with Farid Ahmed, Penn State, and M.A. Karim, University of Tennessee) an article entitled "Synthetic optical processor for generalized logic realization problems" in *Optics and Laser Engineering*, June, 1998, 29(6), pp. 485-497. ♦♦

Fred Garber, Ph.D., EE, has received additional funding in the amount of \$30,000 from the Department of Defense Air Force Research Laboratory for his proposal entitled "Performance Prediction of ATR Technologies." ♦♦

Ardeshir Goshtasby, Ph.D., EE, has received funding in the amount of \$22,846 from Kettering Medical Center for his proposal entitled "Registration of Deformed Images Using Elastic Surfaces." ♦♦

James Menart, Ph.D., ME, (with Dr. Lanchao Lin) has published a paper entitled "Numerical Study of High-Intensity Free-Burning Arc" in the *Journal of Thermophysics and Heat Transfer*, Volume 12, Number 4, 1998, pp. 500-506. ♦♦

Krishna Naishadham, Ph.D., EE, co-taught with Dr. Mohamed Abbas of ITT Automotive, a short course entitled "Electromagnetic Compatibility (EMC) of Electric Motors" at the 1998 Electrical Machinery and Coil Winding Conference held in Cincinnati in October.

Dr. Naishadham's biography has been selected for inclusion in the Fifth Edition of Who's is Who in Science and Engineering. The invitation letter states that "selection of individuals for Who's is Who in Science and Engineering is solely based on the fundamental reference value of their technical contributions." ♦♦

L. Rai Pujara, Ph.D., EE, has received funding in the amount of \$64,799 from the National Science Foundation's Research in Undergraduate Institute for his proposal entitled "Interval Polytope of Characteristic Polynomials." ♦♦

David Reynolds, Ph.D., BHE, and **James Marous, graduate student**, presented a paper entitled "A Non-Fragible Pedestrian Legform Impactor" at the 1998 Annual Meeting of the Biomedical Engineering Society, October 10-13, 1998 in Cleveland, OH. This research was supported by a contract from the U.S. Department of Transportation, National Highway Traffic Safety Administration (NHTSA). Co-authors are D.C. Longhitano, graduate student, OSU, and Roger Saul, NHTSA, East Liberty, OH. ♦♦

Joseph Slater, Ph.D., ME, has received funding in the amount of \$5,980 from Ohio Electronic Engravers, Inc., for his proposal entitled "Electromechanical Engraving Device." ♦♦

Raghavan Srinivasan, Ph.D., ME, has received funding in the amount of \$40,000 from Edison Materials

Technology Center (EMTEC) for his proposal entitled "Paper Abrasivity Testing."

Dr. Srinivasan has also been elected President of Alpha Sigma Mu—The International Materials Honor Society. ♦♦

Xudong Zhang, Ph.D., BHE, presented a paper entitled "Back lift versus leg lift: a dynamic lifting strategy index" at the 42nd Human Factors and Ergonomics Conference, October, 1998, Chicago, IL. Dr. Zhang was also invited to be a member of the Editorial Board for the *International Journal of Industrial Ergonomics*. ♦♦

BITs & PCs is a monthly newsletter published by the College of Engineering and Computer Science to inform students about activities, news, opportunities and changes occurring in the College. It reports on the achievements of faculty and students; changes in organization, policy and curriculum; scholarship and employment opportunities; and engineering and computer science student club activities.

The current issue of *BITs & PCs* is available on the World Wide Web at <http://www.cs.wright.edu/bitsandpcs/default.html>. Copies are also available in the College office, any Department office, or the Student Club Room.

The next issue will be published the week of November 16, 1998. To submit items for this issue, phone the College of Engineering and Computer Science, 405 Russ Center, at 937/775-5001, or E-Mail kthis@cs.wright.edu by November 5, 1998.

New Faculty Join CSE Department



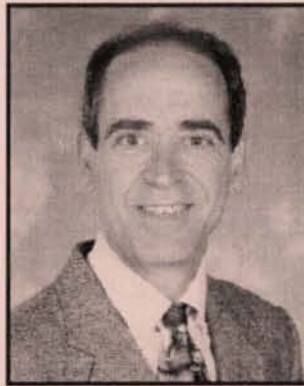
Ricardo Gutierrez-Osuna has recently joined Wright State University's Department of Computer Science and Engineering

as an Assistant Professor. Ricardo earned his Ph.D. in Computer Engineering (with a minor in Artificial Intelligence) from North Carolina State University in 1998. His dissertation was entitled "Signal processing and pattern recognition for an electronic nose." He also obtained an M.S. in Computer Engineering from North Carolina State University in 1995 and a B.S. in Electronics and Control Engineering from the Polytechnic University of Madrid, Spain, in 1992.

Dr. Gutierrez-Osuna has research interests in the areas of pattern recognition, electronic olfaction and mobile robotics. He is currently scheduled to teach CEG 411-Microprocessor-based System Design in Winter 1999 and Spring 1999, and CS 790-Introduction to Pattern Recognition in Spring 1999.

He can be reached at:

401 Russ Center
775-5120
rgutier@cs.wright.edu
www.cs.wright.edu/people/faculty/
rgutier



Michael T. Cox has also recently joined the faculty in WSU's Computer Science and Engineering

Department as an Assistant Professor. He received his Ph.D. in Computer Science from the Georgia Institute of Technology, Atlanta, in 1996 and his undergraduate from the same in 1986. From 1996 to 1998, he was a postdoctoral fellow in the Computer Science Department at Carnegie Mellon University in Pittsburgh working on the PRODIGY project.

Dr. Cox's research interests include case-based (analogical) reasoning, mixed-initiative planning, understanding (situation assessment), introspection, and multistrategy learning. More specifically, he is interested in how goals interact with and influence these broader cognitive processes. His approach to research follows both artificial intelligence and cognitive science directions.

He can be reached at:

343 Russ Center
775-5126
mcox@cs.wright.edu
www.cs.wright.edu/people/faculty/
mcox

*Welcome
to
Wright State!*

*Kudos
and
Congrats
to:*

Parul Kapur

recipient of a \$2000
Society of Women
Engineers/Dorothy
Lamke Howarth
Scholarship

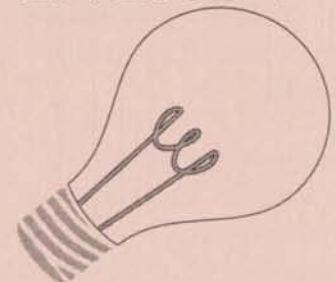
and

Tanika Graham

recipient of a \$1500
Society of Women
Engineers/MASWE
Scholarship

*Way To Go
Ladies!*

**CONSERVE
ENERGY**



**Turn off the juice
when not in use!**

Notice of Class Change

ME 408/608

Design Optimization

will **NO T** be offered

Winter Quarter 1999.

Instead, it is expected

to be offered

Spring Quarter 1999.

New Course Offering

EDT 110—The Electronic Library

Winter Quarter, 1999

Sections 03 and 04—Building Research Skills

Introduces essential information-seeking and library research skills. Teaches where to start looking and how to find what you are looking for.

Sections 01 and 02—Internet Search Engines

Surveys World Wide Web search engines and their uses. Shows how to effectively utilize search engines to help find all sorts of information on the Web.

Ty D. Upp says.

We, in the College of Engineering and Computer Science would like to wish everyone a happy holiday season. As you embark upon your way home or to spend these joyous times with family and friends, please be careful! We want to see each and every one of you back for Winter Quarter!

Also, be sure to exercise care and caution at home, too. Check all your decorations carefully for frayed wires, loose connections, or dangerous broken pieces.

Happy Holidays...

See You Next Year!



Fritz and Dolores Russ
Engineering Center

Bits & PCs

College of Engineering and
Computer Science
Wright State University

Dean

James E. Brandeberry, Ph.D., P.E.

Editor and Staff Writer

Karil S. This

Submit questions, articles and ideas to Editor, 405 Russ Engineering Center. The College of Engineering and Computer Science reserves the right to edit all material for publication.

Ty D. Upp is a regular feature in BITs & PCs. faculty, staff, and students are welcome to submit prospective topics for Ty D. Upp to address in this column. Just contact kthis@cs.wright.edu or stop by the Dean's Office at 405 Russ to submit your suggestions.

SCHOLARSHIPS & FELLOWSHIPS

The Washington Internships for Students of Engineering (WISE) Program is seeking applications from outstanding engineering students who display evidence of leadership skills and have a keen interest in public policy. Each student in the 1999 WISE program will be sponsored by one of the participating organizations which include: AICHE, ANS, ASCE, ASME, IEEE, NSPE, and SAE.

The WISE students meet with prominent engineers and government officials in Washington, D.C., and examine a public policy issue of concern to the engineering community and are requested to prepare a paper on such an issue. The ten-week program runs from June 1-August 6, 1999.

A stipend of \$1,800 is provided and lodging and travel expenses will also be covered. Participants are housed in a dormitory on the campus of George Washington University.

To qualify for consideration, applicants should be entering their final year of undergraduate studies, be a U.S. citizen, and, if seeking sponsorship by ANS, ASCE, ASME, IEEE, or NSPE, be a member of the respective society.

Application deadline is December 4, 1998. Applications and additional information are downloadable from <http://www.ieee.org/wise>, or by contacting:

Washington Internships for Students of Engineering (WISE) Program
ATTN: Anne Hickox
400 Commonwealth Drive
Warrendale, PA 15096-0001
(412) 776-4841 (ext. 7476)
FAX: (724) 776-2103
E-mail: anne@sae.org

The Congress-Bundestag Youth Exchange for Young Professionals (CBYX) is accepting applications for the 1999/2000 program year. As the turn of the century approaches and the global economy continues to evolve, international internships are an increasingly important component of any professional portfolio. This government-sponsored exchange program will provide German language training, four months of study at a German technical/professional school or university, and a five month internship with a German organization or business.

The program is designed for young adults in business, technical, vocational, and agricultural fields. Candidates must be U.S. citizens between the ages of 18-24 at the start of the program and should have clear career goals and related practical work experience.

The application deadline is December 15, 1998, and applications are downloadable from the CBYX website. For more information, contact:

Congress-Bundestag Program
CDS International, Inc.
330 Seventh Avenue
New York, NY 10001-5010
Phone: (212) 497-3500
FAX: (212) 497-3535
E-mail: cbyx@cdsintl.org
<http://www.cdsintl.org>

The National Research Council plans to award approximately 25 **Ford Foundation Postdoctoral Fellowships for Minorities** to provide a year of continued study and research for Native American Indians, Alaskan Natives, African

Americans, Mexican Americans/Chicanas/Chicanos, Native Pacific Islanders, and Puerto Ricans.

In a national competition, fellows will be selected from among recent doctoral recipients who show the greatest promise of future achievement in academic research and scholarship in higher education. The fellowship program is open to U.S. citizens engaged in or planning a teaching and research career and who have completed a Ph.D. or Sc.D. degree between January 4, 1992, and no later than March 3, 1999.

Awards will be made in research-based programs in behavioral and social sciences, physical sciences, life sciences, humanities, engineering, mathematics, and education.

Application deadline is January 4, 1999. Information and applications are downloadable from the website or through:

Fellowship Office
National Research Council
2101 Constitution Ave.
Washington, DC 20418
Phone: (202) 334-2872
FAX: (202) 334-3419
E-mail: infofell@nas.edu
<http://fellowships.nas.edu>

The SAE Doctoral Scholars Program is seeking qualified applicants for the 1999/2000 academic year. The program was established to assist and encourage promising graduate engineering students who are citizens of North America (U.S., Canada, or Mexico) to pursue careers in teaching engineering at the college level. For each year of teaching or appropriate proportion, one year's

Continued on Page 7

SCHOLARSHIPS & FELLOWSHIPS

loan will be forgiven. Chrysler Corporation has greatly enhanced the 1998/99 program and recipients of these awards will be recognized as Chrysler Fund Scholars.

Eligible candidates must hold a degree from an accredited undergraduate program and be accepted into a doctoral program at the time of application. Selection is based on scholastic achievement, desire to teach, interest in the mobility technology field, and the support of the SAE Collegiate Chapter where one exists.

Up to \$5000 a year is available for up to three years. Funding levels at the time of selection will determine the number of loans and grants available for the 1999/2000 academic year.

Applications must be received by April 1, 1999. For more information, interested candidates may come to 405 Russ to view literature or contact:

Connie Harnish
SAE Educational Relations
400 Commonwealth Drive
Warrendale, PA 15096-0001
(724) 772-4047
E-mail: connie@sae.org
<http://www.saw.org/STUDENTS/docschol.htm>

The Yanmar/SAE Scholarship Program is accepting applications for the 1999/2000 academic year. Yanmar Diesel, the world's largest manufacturer of non-vehicle-use diesel engines, established the scholarship to promote the study of conservation of energy.

Candidates must be entering their senior year of undergraduate engineering or be enrolled in a post graduate engineering or related

science program, and a citizen of North America. They must be pursuing a course of study or research related to the conservation of energy in transportation, agriculture, construction, and power generation. Emphasis will be placed on research or study related to the internal combustion engine. Applications will be judged based on scholastic performance, special study or honors in the field of the award, and leadership achievement related to engineering or science. One \$2000 scholarship will be awarded to the recipient at the rate of \$1000 per year.

Application deadline is April 1, 1999. Interested applicants should contact:

Connie Harnish
SAE Educational Relations
400 Commonwealth Drive
Warrendale, PA 15096-0001
(724) 772-4047
E-mail: connie@sae.org
<http://www.saw.org/STUDENTS/docschol.htm>

The SAE Long Term Member Sponsored Scholarship program is accepting nominations for the 1999/2000 academic year. The program was established by SAE members who have 25, 35, and 50 years of membership who have elected to fund this scholarship program in place of receiving a Long Term Recognition Award. Several \$1000 scholarships will be awarded.

Scholarships are awarded on the basis of the nominee's support for SAE, the Collegiate Chapter, or the local SAE Section and its programs. Applications must be submitted by the SAE Faculty Advisor, the SAE Chairman or Vice Chairman for

Student Activities. The nominee, nominator, and co-nominator must be members of SAE. Nominees must be entering their senior year between August 1999 and February 2000.

The application deadline is April 1, 1999. Interested nominators should contact:

Connie Harnish
SAE Educational Relations
400 Commonwealth Drive
Warrendale, PA 15096-0001
(724) 772-4047
E-mail: connie@sae.org
<http://www.saw.org/STUDENTS/docschol.htm>

✓ It Out...

College of Engineering and Computer Science Newsgroups:

wright.ecs.announce.events
for club meetings and other
upcoming events;

wright.ecs.announce.for-sale
for posting items you would like
to sell or are interested in
purchasing;

wright.ecs.announce.housing
for posting housing availability
and requests for roommates;

wright.ecs.announce.jobs
for help wanted and other
employment opportunities;

and

wright.ecs.announce.misc
for posting anything else.

Important Dates To Remember . . .

- November 24 — Last Day of Fall Quarter Classes
 - November 25 — No Classes, University OPEN
 - November 26-29 — Thanksgiving Holiday, University Closed
 - November 30 — Faculty Senate Meeting, 3:15 P.M.
 - Nov. 30 - Dec. 5 — Final Exam Week for Fall Quarter
 - December 4 — OOE Ring Ceremony, 7-9 P.M., 144 Russ Center
 - December 5 — Winter Commencement Ceremony
 - December 7 — Last day to apply for March graduation
 - December 8 — NEAS+, 9-11 A.M., 145 Russ Center
 - December 11 — External Advisory Board Meeting, 12-5 P.M.
 - December 24/25 — Christmas Holiday, University Closed
 - January 1 — New Year's Day, University Closed
 - January 4 — Winter Quarter begins, fee assessed for late registration
 - January 8 — Last day to register, add classes, or receive 100% refund (in person)
 - January 10 — Last day to register, add classes, or receive 100% refund (Raider Express)
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WRIGHT STATE UNIVERSITY

College of Engineering and Computer Science
3640 Colonel Glenn Hwy.
Dayton, Ohio 45435-0001

Office of the Dean