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## Wright State University College of Engineering and Computer Science Bits and PCs newsletter, Volume 10, Number 4, April 1994

Wright State University College of Engineering and Computer Science

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# BITS & PCs

COLLEGE OF ENGINEERING AND COMPUTER SCIENCE

April 1994

Wright State University Dayton, Ohio 45435

Vol. 10 No. 4

This newsletter is a monthly publication to inform students of the activities, news, opportunities and changes occurring in the College of Engineering and Computer Science. 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 newsletter is published by the College of Engineering and Computer Science and distributed to all engineering and computer science majors through their student mailboxes. The next issue will be published May 6, 1994. Submit items to be included in this issue to the College of Engineering and Computer Science office, 405 Russ Engineering Center, by April 15, 1994.



Mark your calendar and plan to attend the 15th Annual Awards Banquet sponsored by the College of Engineering and Computer Science.

This event is scheduled to be held in the Berry Room of the Nutter Center on May 20, 1994.

The annual banquet celebrates the scholastic achievements of our students and also recognizes the accomplishments of our faculty in the areas of teaching, service, and research.

Special guest speaker for this year's banquet will be President Harley E. Flack. Registration forms will be sent to student mailboxes, or you may contact the college office for additional information.

**JOIN THE CELEBRATION!**

## LAST CALL FOR PAPERS

Sigma Xi - WSU Club announces the 12th Annual Student Scientific Research Colloquium to be held on May 18, 1994 in room 145 Russ Center. The **DEADLINE FOR ABSTRACTS is Friday, April 22, 1994.**

Participants need not be a member of Sigma Xi. All undergraduate and graduate students involved in research are encouraged to submit an abstract.

Abstracts should be single-spaced and should not exceed 250 words. List author names first, followed by the title and department/program. The participating student must be listed as first author. Please use 1" margins on 8 1/2" by 11" paper and an easily reproduced, 12 pt. font. Skip one line and begin abstract text. Beneath the abstract, your major professor should be listed along with his/her signature to indicate support. Please also include a campus address and phone number where you may be contacted. You will be notified of acceptance by April 28th. At that time, participants will be given guidelines to prepare their presentations and information on the judging criteria.

Undergraduate, M.S., and Ph.D. candidates will be judged separately. All presenters are invited to be guests at the Sigma Xi Annual Banquet on Thursday, May 19, 1994.

Awards ranging from \$30 to \$100 will be given for the best undergraduate, M.S., and Ph.D. papers.

Send abstracts to: Dr. Michael Hennessy, Department of Psychology, 309 Oelman.

This year's events are co-sponsored by the Research Council of the School of Graduate Studies and the College of Science and Mathematics.

## THINK FAST

**The deadline to submit entries for the Suggestion for the Dean contest is April 15.**

The purpose of this program is to solicit suggestions from students enrolled in the college about ways to improve the facilities and/or programs for engineering and computer science students.



Submit your entry in the suggestion box located near room 405 RC.

Appropriate awards will be presented for the best suggestions.

## ORDER OF THE ENGINEER RING CEREMONY

The Order of the Engineer, Inc. is a symbolic organization that seeks to promote professionalism among engineers and graduates of accredited engineering and college programs.

The next induction ceremony will be held on June 10. Seniors and faculty, keep this date open and plan to register to participate.

Registration information will be sent to student mailboxes. For more information, contact the college office or call 873-5001.

## USED DATA BOOK SALE

TI, MOTOROLA, INTEL, SIGNETICS,  
ADVANCED MICRO DEVICES,  
and more

Wednesday, April 20  
8 a.m. – Noon

Lobby of the Russ Engineering Center

Engineering students in the WSU Mountaineering Club will be selling used electronic component data books in the Russ Engineering Center Lobby. Pre-sale prices from 8:00 a.m. until noon.

TI TTL (1988) Books -- \$8  
Microprocessor Books -- \$2  
Application Notes ---- \$2  
Most other books ---- \$1

At noon, all prices will be reduced 50% – but quantities are limited.

For more information contact Dan Kien at 252-5439.

## RUSS ENGINEERING CENTER RECEIVES AWARD OF MERIT

The Mayor's Beautification Committee from the City of Fairborn selected the Russ Engineering Center to receive the Award of Merit.

This award was presented in appreciation for the civic pride, initiative, and enterprise demonstrated through the construction of the Russ Engineering Center at Wright State University.

Presentation of a plaque was made to Dr. Willard Hutzler, Vice President for Academic Affairs, at a meeting of the Fairborn City Council which was held on Monday, March 21, 1994.

# Thanks

The Biomedical Engineering Society in conjunction with the Community Blood Center had a successful blood drive on March 7. Thanks to all of those who participated. Look for this to be an annual event held during National Engineers Week.

## STARTING SALARIES FOR NEW COLLEGE GRADUATES

Academic Major	Estimated Starting Salary For 1993-94
Chemical Engineering	\$ 40,341
Mechanical Engineering	35,369
Electrical Engineering	34,979
Industrial Engineering	33,348
Computer Science	32,446
Nursing	29,868
Civil Engineering	29,547
Geology	28,414
Chemistry	28,386
Accounting	27,787
Physics	27,087
Financial Administration	26,630
Mathematics	26,415
Marketing/Sales	24,607
Agriculture	24,134
General Business Administration	23,760
Hotel, Restaurant Management	23,713
Personnel Administration	22,923
Education	22,685
Natural Resources	22,554
Social Science	22,333
Retailing	22,002
Communications	21,640
Advertising	21,627
Human Ecology/Home Econ.	21,053
Liberal Arts	20,860
Telecommunications	20,680
Journalism	20,587

SOURCE: *Collegiate Employment  
Research Institute  
Michigan State University*

## AMERICAN SOCIETY FOR ENGINEERING EDUCATION (ASEE) ENG LOANS PROGRAM

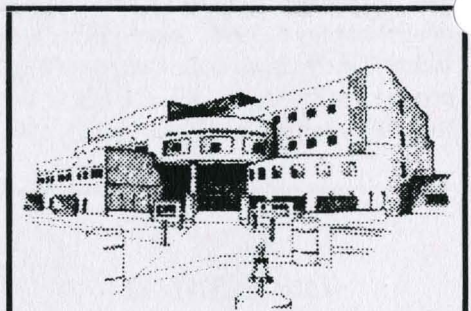
The American Society for Engineering Education has again reinforced its leadership role in improving all aspects of engineering education in America.

ASEE's membership is comprised of over 400 engineering colleges, many of whose deans, financial aid officers and – most importantly – students, have demonstrated a need for a low-cost way to finance graduate level engineering education.

ENG LOANS offers students a comprehensive, convenient, high quality loan program at considerable cost savings.

ENG LOANS is now fully operational, and based on current activity, ENG LOANS will deliver in this, its first year, more than \$15 million in low cost student loans to graduate engineering students.

For more information about ENG LOANS, contact an ENG LOANS Customer Assistance Agent at 1-800-562-2525.



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

Sharon Coates

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.

## CALL FOR STUDENT TECHNICAL PAPERS

The Engineers Club of Dayton and the Engineers Club of Dayton Foundation announce the 1994 Student Paper Program. A \$200 cash award and a one-year membership in the Engineers Club of Dayton will be presented to the authors of the winning undergraduate paper and the winning graduate paper.

The faculty advisor for each winner will also receive one-year membership to the Engineers Club of Dayton. Students at engineering/technology degree institutions in the Dayton area are eligible to enter. Winning authors will be invited to present their papers to the Engineers Club membership. The winning papers and selected runner-up papers may be published in *The Engineer*.

Five (5) copies of each paper must be received for review by April 30, 1994.

### RULES

1. The paper may be based on the student's Ph.D. dissertation, MS thesis, senior design project, independent study project, etc. It may be a review or tutorial and need not involve original work. It should be prepared solely for this competition and not be co-authored or previously submitted as a paper.

2. The paper should be no more than 9 double-spaced typed pages. (Longer papers will not be considered). In addition, a one-page synopsis of the paper should be provided.

3. The paper should be prepared in a style suitable for publication in a technical journal (*IEEE, ASME*, etc.)

4. The paper should be written for a general engineering audience. It should present the topic in an interesting informative and generally understandable manner. A reader should not have to be an expert or specialist in the subject matter presented to understand the paper content.

5. Authors should provide a brief, one-page resume which includes student's status (undergrad, grad, co-op, part-time, etc.), academic major, faculty advisor, permanent address, and phone where student

can be reached, and a statement releasing the paper for publication and presentation.

6. The paper judging criteria are: (a) written in an interesting manner; (b) written in an informative manner (c) understandable by a general engineering audience; (d) written in a style suitable for technical journal publication.

7. Oral presentation may include information not contained in the paper.

8. To be eligible, an author must currently be a student or have graduated after June 1, 1994. The paper must have been written while the author was a student.

Send five copies to:

Dennis M. Nolan, General Manager  
Engineers Club of Dayton  
110 East Monument Avenue  
Dayton, Ohio 45402

**Deadline for entry is April 30, 1994**



**Building Watch Program  
in Effect  
HELP us keep the Russ Center  
in tip-top shape!**

### UNIVERSITY WRITING CENTER

The University Writing Center is open for tutoring appointments during spring quarter. Hours are Monday through Thursday – 9:00 a.m. to 6:00 p.m. and Friday – 9:00 a.m. to 3:00 p.m.

The first day of tutoring is Monday April 4. The University Writing Center is closed Memorial Day, May 30, and is closed finals week and between quarters.

To arrange for tutoring, come to 025 Library to be scheduled with an available tutor.

When you come for your tutorial, please bring any materials that will help your tutor understand the assignment -- syllabus, assignment sheets, early drafts, and so on. Also, please bring a pen and paper (and/or a 3-1/2" diskette.)

Please sign in and out.

If you are going to miss a scheduled appointment, please notify the center or your tutor. If you miss more than three appointments, you will be dropped from the schedule. If you are more than 10 minutes late for your appointment, you forfeit your time for that session. Students who are required to attend weekly sessions are expected to come prepared.

When using the Writing Center computers, a tutor will be available to help you with Word Perfect. Due to limited resources, the Writing Center computers are to be used by students writing papers -- not playing games, using the IRC, etc.

In the University Writing Center, you may work independently on grammar and punctuation. We have exercises in the filing cabinets – just ask a secretary or a tutor. Also feel free to use the books in our library.

The University Writing Center has a WRITER'S HOTLINE that you can call from 9:00 a.m. to 4:00 p.m. Monday through Friday. Simply phone 873-2158 with questions about grammar, punctuation, usage, writing style, or documentation.

### SAFETY FIRST

**Coming Soon....**If the National Highway Traffic Safety Administration (NHTSA) has its way, you will soon be able to see at a glance just how safe your prospective new car is by checking the sticker.

NHTSA officials want the results of the federal government's crash tests and other safety information listed on new-car sales stickers, along with the price and miles per gallon.

NHTSA tests automobiles for safety by crashing them into a fixed barrier at 35 miles per hour – the equivalent of a head-on collision with a closing speed of 70 mph.

The agency then rates the probability of serious head, chest and upper-leg injuries to the occupants of the front seat. (The resulting scores do not apply to unbelted passengers). The best safety comparisons are between cars of about the same weight.

*Kiplinger's Personal Finance Magazine*

April 1994

**DID YOU KNOW** that foreign tourism in the U.S. is booming? Since 1985, the number of overseas tourists has more than doubled, to 14.7 million, in 1991.

# SCHOLARSHIPS and FELLOWSHIPS

## SAFE – RICHARD H. FROST SCHOLARSHIP

The Richard H. Frost Aerospace Safety and Wright Brothers SAFE Scholarship is a \$1,000 scholarship given to a deserving student who is pursuing a career in aerospace safety, survival, or related discipline.

Student must be enrolled as a junior or senior for the next academic year at either the University of Dayton or Wright State University.

Student must be pursuing an aerospace safety, engineering, life sciences, medicine, or related degree program.

Student must have a GPA of 3.0 or higher.

**Application for the scholarship must be received by July 1 of the year preceding the academic year in which it is to be used.**

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### SCHOLARSHIP DEADLINE

*for Summer 1994, study in Italy, France and England is*

**Friday April 29, 1994**

**When:** Summer, 1994

**How much support is provided?** Four \$500 scholarships will be given out.

**Why go?** Spend the summer in Europe and earn academic credit towards your degree.

**Who to see:** Rory Golden, International Exchange Program Coordinator, in the International Programs Office, 122 Allyn Hall, or call 873-2712 for an appointment.

This program is sponsored by WSU Study Abroad and International Exchange Programs and the University Studies Abroad Consortium (USAC).

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### MINORITY AID

The college office has a listing of financial aid available to minority students pursuing engineering degrees. You may see this list by stopping in room 405 RC.

## BUSINESS AND PROFESSIONAL WOMEN'S FOUNDATION

The Business and Professional Women's Foundation provides financial assistance through several programs. Two of these programs are:

- BPW Career Advancement Scholarship
- BPW Loan Fund for Women in Engineering Studies

The BPW Career Advancement Scholarship Program was established to assist women seeking the education necessary for entry or re-entry into the work force, or advancement within a career field. Scholarships ranging from \$500 – \$1,000 are awarded for full-time or part-time programs in the fields of computer science, teacher education, paralegal studies, engineering, science or professional (JD, DDS, MD) degrees. Age eligibility: 30 or older.

The loan fund for women in engineering was established in 1976 and is designed to assist women in their final two years of any accredited engineering program, including undergraduate, refresher, and conversion programs, as well as graduate studies. Study may be either full or part-time, but applicants must carry at least six semester hours or the equivalent during each semester for which loan is requested.

**Application Deadline: April 15, 1994.**

**IT'S A FACT** that the air is a lot cleaner than it used to be.

Since 1970, lead emissions are down 97 percent; particulates (soot, smoke) have dropped 61 percent and hydrocarbons 38 percent. The record in energy use though not as good, is still impressive. Homes built in the late 1980s use nearly 30 percent less energy than those built in the 1950s. In 1991, cars got an average of 21.7 miles to a gallon of gasoline, up from 13.5 mpg in 1970. Population and economic growth have offset some efficiencies; still, total energy use in 1991 was only 4 percent higher than in 1978.

R.J. Samuelson, *Newsweek*, January 31, 1994

## NEW LEADERS SCHOLARSHIP PROGRAM

Computer Associates International's New Leaders Scholarship program provides financial support to outstanding undergraduate students in computer science or related engineering fields.

Sophomores and juniors from 50 colleges and universities throughout the country are eligible to apply. The computer science chairperson of each participating school may nominate his/her three most promising students.

Each year, ten finalists receive \$5,000 scholarships along with PC's and CA software packages. Twenty semi-finalists will also receive the PC's and software. Recipients are selected based on transcripts, department chair's letters of recommendation and essays describing the applicant's career goals and ideas about the future of technology.

Each finalist is guaranteed an internship with Computer Associates, the software industry's largest independent company. For more information contact Computer Associates International, Inc., One Computer Associates Plaza, Islandia, NY 11788-7000, phone 516/342-5224, 1-800/MICRO90, FAX 342-6868.

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## AMERICAN ASSOCIATION OF UNIVERSITY WOMEN (AAUW)

This foundation is the oldest and largest non-institutional funder of graduate education for women. In April 1993, the Foundation awarded \$2.6 million in fellowships and grants for formal academic study, individual research and community action projects to address education and equity for women and girls.

To obtain an application, you may fill out a brochure coupon that is available in the college office, 405 RC, or contact the:

AAUW Foundation Service Staff  
P.O. Box 4030  
Iowa City, IA 52243-4030  
Telephone 319/337-1716.

Application deadline varies with fellowship.

## **U.S. DEPARTMENT OF ENERGY**

The U.S. Department of Energy (DOE) has postings for the following programs.

Faculty Research Opportunities

University/Laboratory Cooperative  
Program with Student Research  
Participation

Student Internships at the Pittsburgh  
Energy Technology Center

Graduate Student Energy Research  
Opportunities

Student Internships at Oakridge National  
Laboratory and Hazardous Waste  
Remedial Actions Program

You may review these postings in  
the College Office, room 405 RC, or contact  
the following for more information:

Science/Engineering Education Division  
Oak Ridge Institute for Sciences  
and Education  
P.O. Box 117  
Oak Ridge, TN 37831-0117

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## **AMERICAN COUNCIL OF INDEPENDENT LABORATORIES, INC.**

The American Council of Independent Laboratories Auxiliary offers a scholarship of at least \$1,000 every year to a student pursuing a career in the scientific, geosciences, or construction testing field.

Applicants must be in their junior year or above in an accredited college. The candidate must be majoring in any of the physical sciences: physics, chemistry, engineering, geology, biology or environmental science. **To apply for an award, the following items must be submitted to the scholarship chair by April 15, 1994.**

- The candidates' name, home address, and college address.
- Transcript of grades.
- A Brief resume of activities in college, including field of study and future plans.

- Two letters of recommendation from faculty members of the college the candidate presently attends.
- Information on any other scholarship or grant aid now receiving.
- Information on where the award should be mailed. All awards will be sent directly to the college indicated.

Contact:

Karen Day

Auxiliary of the American Council of  
Independent Laboratories, Inc.  
Route 3 - Box 6  
New Ulm, MN 56073

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## **SCHOLARSHIP POSTINGS**

Applications are available to engineering students for the following scholarships:

**Construction Specifications Institute Scholarship:** GPA of 2.8. Second year student. Amount: \$600. No deadline.

**DEED Scholarship Program:** Graduate or undergraduate students in energy related disciplines. Superior academic performance. Amount \$3,000. Deadline August 1, 1994.

**Lake Erie Electric Scholarship Fund:** Lorain County students majoring in electronics field. Graduating high school seniors or current college student. Amount: Up to \$1,000. For information contact:

William Arroyo, Program Officer  
The Community Foundation of Greater  
Lorain County  
1865 North Ridge Road, East, Suite A  
Lorain, OH 44055  
216/277-0142 or 323-4445

**Society for Women Engineers - Freshman Scholarship:** women entering freshman majoring in engineering. Amount: \$1,000.

**Reentry Scholarship Award:** To encourage and aid women in reentering the job market as an engineer after being out of work force for a minimum of two years. Recipient may be any year, undergraduate or graduate. Amount: \$1,000.

**Zonta International Amelia Fellowship Awards:** Must have a bachelor's degree qualifying women for graduate work. Superior academic record, teacher recommendations. Amount: \$6,000.

Applications for these postings are available in 129 Student Services.

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## **GRADUATE FELLOWSHIP OPPORTUNITIES U.S. DEPARTMENT OF ENERGY/ORISE**

Opportunities for highly-qualified and motivated students seeking graduate degrees are available through the U.S. Department of Energy, administered by the Oak Ridge Institute for Science and Education, Science/Engineering Education Division. The following areas are covered:

Applied Health Physics  
Civilian Radioactive Waste Management  
Industrial Hygiene  
Magnetic Fusion Energy Technology  
Magnetic Fusion Science

Application deadline varies with fellowship.

Contact:

Oak Ridge Institute for Science and  
Education (ORISE)  
Science/Engineering Education Division  
P.O. Box 117,  
Oak Ridge, Tennessee 37831-0117

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## **CO-OP OPPORTUNITIES**

Motorola in Tempe, AZ, is interested in computer science majors to work as co-ops and interns for this summer. The office of Career Services is in the process of identifying potential candidates for these positions.

Motorola provides travel reimbursement and housing assistance.

This is an outstanding opportunity for students interested in gaining valuable work experience through summer employment.

Interested students should contact Emily Williams in the office of Career Services at 873-2556. **DON'T DELAY!**

# FACULTY FACTS

**Richard Bethke (ME) Chair**, received fellowship funding in the amount of \$5,000 from the Ohio Aerospace Institute. >

**Chien-In (Henry) Chen (EE)** published the following:

"Using PDM on Multipoint Memory Allocation in Data Path," to appear in *VLSI Design: An International Journal of Computer-Chip Design, Simulation, and Testing*, Gordon and Breach Science Publishers, Vol. 1, No. 3, 1994.

"Cluster Partitioning Techniques for Data Path Synthesis," *VLSI Design: An International Journal of Computer-Chip Design, Simulation, and Testing*, Gordon and Breach Science Publishers, Vol. 1, No. 3, 1994 (with G. Sobelman).

"Logic Partitioning to Pseudo-Exhaustive Test for BIST Design," Proc. of IEEE/ACM International Conference on Computer-Aided Design, pp. 646-649, Nov., 1993 (with J. Yuen).

"Analysis of the Gap Between Behavioral and Gate Level Fault Simulation," Proc. of IEEE International ASIC Conference and Exhibit, pp. 144-147, Sept., 1993 (with S. Perumal).

"Circuit Partitioning for Pseudo-Exhaustive Test," Proc. of IEEE International ASIC Conference and Exhibit, pp. 152-155, Sept., 1993. >

**Philip Chen (CS)** published a paper entitled "An Integration of Design and Manufacturing: Setup Generation and Featuring Sequencing using Learning Approach," in *Computer-Aided Design*, Vol. 26, No. 1, pp. 59-75, Jan. 1994.

Dr. Chen also received funding in the amount of \$40,500 from Lawrence Associates, Inc. for his proposal entitled, "Self Improving Methods for Materials and Process Design." >

**Amir Faghri (ME)** received funding in the amount of \$50,000 from USAF: Wright Laboratory for his proposal entitled, "Micro Heat Pipe Technology in Electronic Cooling." >

**Lang Hong (EE)** received funding in the amount of \$59,826 from Science Applications International Corp. for his proposal entitled, "Advanced Tracking Algorithm Analysis and Assessment." >

**Shane Y. Hong (ME)** along with J. Ni and S. Wu published, "Preemptive Diagnosis of Minor Machine Failure by DDS Spectrum Analysis in the *ASME Transaction, Journal of Engineering for Industry*, Vol. 116, Feb. 1994. >

**Dmitry Khurstalev and Amir Faghri (ME)** published "Thermal Analysis of a Micro Heat Pipe," in the *ASME Journal of Heat Transfer*, Vol. 116, pp. 189-198, Feb. 1994. >

**Giorgio McBeath, Assistant Dean**, was an invited speaker at the 14th National Conference of the National Association of Minority Engineering Programs Administrators (NAMEPA) which was held in Washington, D.C. on March 27, 1994.

Dr. McBeath also received funding in the amount of \$19,970 from the U.S. Department of Energy for the WRIGHT STEPP Engineering Preparatory Program. >

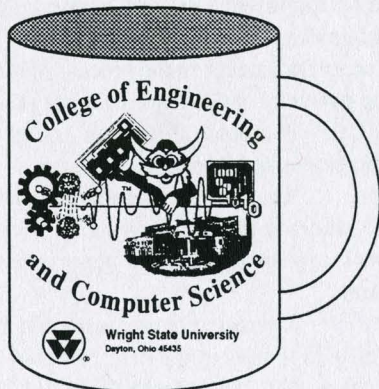
**Mateen Rizki (CS)** received funding in the amount of \$1,000 from the Ohio Aerospace Institute for his proposal entitled, "Adaptive Vision Laboratory Research." >

**Isaac Weiss (ME)** received funding in the amount of \$600 from Standard Register for his proposal, "Study of Nickel Plating Thickness." >

## College Mugs for Sale

\$4.00

Available in Room 405 Russ  
Engineering Center



## EE SECRETARY ACCEPTS NEW POSITION



Suzy McGovern, secretary for the Department of Electrical Engineering since 1988, has accepted the position of executive secretary for the Office of Public Relations.

Suzy has served the College of Engineering and Computer Science as a student worker and as a departmental secretary. She earned her B.S. Degree in Electrical Engineering in 1991.

## ME PROFESSOR GRANTED PATENT



The Patent Prosecution Office of the Air Force Legal Services Agency has advised WSU that Dr. Kenneth C. Cornelius, assistant professor in the Department of Mechanical and Materials En-

gineering, was granted U.S. Patent No. 5,273,237.

Dr. Cornelius is co-inventor for the invention of a Forebody Nozzle for Aircraft Directional Control.

## CAREER SERVICES

The Office of Career Services provides counseling services for students. One of the most important of these services is job counseling. Services are available on a walk-in basis from 2:00 – 4:00 p.m. weekdays. In addition, students can make use of the Career Services Connection, a 24-hour information and job line – 873-3000.

## EDUCATION PAYS

The following excerpts are from  
*"American Prosperity Index" Starting  
Out In America Today*  
by Melynda Dovel Wilcox  
*Kiplinger's Personal Finance Magazine,*  
April 1994

During the 1980s, even college graduates who began their careers in jobs that did not require a college degree were paid a premium for their skills and abilities. It's no surprise that the more you learn, the more you earn.

What is startling is the magnitude of the so-called earnings premium for additional schooling and how fast it has grown in recent years. On average, college-educated workers make 65% more than workers with high-school diplomas: 15 years ago, college graduates made just 35% more.

The fact is that whether workers attend a trade school, a community college or a Ph.D. program, the additional schooling pays off.

The expanded use of computers in the workplace during the 1980s partially explains the earnings gap.

Workers who use computers on the job earn roughly 10% to 15% more than workers in similar jobs who do not, according to Princeton University economist Alan Krueger. This gap may narrow as computers become more accessible to lower-skilled employees.

Statistics also show that while college-educated workers are doing better financially, workers with a high-school diploma or less are faring worse. Adjusted for inflation, the income of males with a high-school diploma fell 12% between 1982 and 1992, compared with a 6% increase for male college grads. Not only do college grads earn more, but their unemployment rate is about half that for workers with a high-school diploma.

## PROSPECTS IN ENGINEERING

*According to the March 1, 1994 issue of SPOTLIGHT a newsletter on Career Planning, Placement, and Recruitment; with survey information contributed by Robert K. Weatherall, Director of Career Services and Preprofessional Advising at Massachusetts Institute of Technology.*

Since 1990, employer on-campus recruiting for engineering graduates throughout the country has been down. This trend is likely to continue for the 1993-94 academic year.

As the U.S. economy slowly recovers from its slump, engineering students must be flexible in order to meet the needs of prospective employers.

Recruitment and job opportunities were noted in areas that are experiencing continued growth because of their proximity to high tech industries. These include, Silicon Valley in California and Research Triangle Park in North Carolina. Layoffs in the Department of Defense and the aerospace industry have limited employment opportunities in these areas.

Many medium-sized and small companies – often local – are hiring, although fewer actually do campus interviews. These employers are opting to mail and fax notices of positions available instead of making on-campus visits.

It is important to note that the nature of the employee that companies are seeking has changed. These firms tend to be private businesses that want well-rounded

individuals rather than specialists. They are often looking for people with summer or co-op work experience who can handle a variety of tasks. They are also looking for individuals who can work as team members. For instance a Product Development Team might consist of manufacturing representatives from engineering, marketing, and sales. Employees must be able to deal with professionals, blue collar workers, and customers.

Engineering students who seem to be doing the best in this tight job market are those who have software skills – especially those who can do "C" programming or who are familiar with specialized computer languages and applications. While these graduates may find jobs with software or hardware manufacturers, every industry needs people with the same skills.

It is also important to note that firms that are not technical at all have begun recruiting engineering students for their analytical skills, their objectivity in the face of a problem, and their aptitude for hard work. This includes banks looking for financial analysts and traders, as well as a variety of consulting firms.

## JOB MARKET

The South, particularly Florida and Texas, is expected to lead the country in employment growth over the next 20 years.

Of the 20 fastest-growing job markets identified by the National Planning Association, nine are in Florida. They are:

**Fort Pierce; Naples; Fort Myers–Cape Coral; Orlando; West Palm Beach–Boca Raton–Delray Beach; Bradenton; Tallahassee; Ocala; Fort Lauderdale–Hollywood–Pompano Beach.**

Others listed are:

**Santa Fe, N.M.; Bryan, College Station, Laredo, Austin, McAllen, Edinburg and Mission, TEX; Anaheim and Santa Ana,**

**CAL; Las Cruces, N.M.; Las Vegas, NEV; Olympia, WASH; and Tucson and Phoenix, ARIZ.**

Major metropolitan areas such as Los Angeles-Long Beach, Washington, D.C., and Atlanta don't appear on the list of fastest growing job markets. Yet in terms of sheer numbers, those three areas top the list of cities expected to provide the most jobs between now and 2015.

In most areas of the country, the biggest demand for new grads will come from small companies. The problem for job seekers is finding such firms because they are less likely to recruit on campus. College placement offices can provide valuable information in locating future employers.

*Kiplinger's Personal Finance Magazine*  
April 1994  
Katie Young



# Career Services

*The Office of Career Services would like to recognize the following students from the College of Engineering and Computer Science who worked as cooperative education students last quarter.*

*We are very proud of their accomplishments!*

<u>STUDENT</u>	<u>MAJOR</u>	<u>EMPLOYER</u>
Anibal Abdul-Khalek	Computer Egr.	Silicon Graphics
Don Allen	Electrical Egr.	Dayton Power & Light
Dave Blue	Electrical Egr.	A.O. Smith Company
Jason C. Brown	Mechanical Egr.	Heapy Engineering
James P. Browne	Mechanical Egr.	Howard Paper
David W. Claiborne	Mechanical Egr.	General Motors
Dave Dawsey	Mechanical Egr.	Heapy Engineering
Paul A. Dickman	Computer Egr.	Ball Systems
Michael Dunn	Mechanical Egr.	General Motors
Grant Edmunds	Computer Science	Martin Marietta
Gordon Fenton	Electrical Egr.	A.O. Smith Company
Michael D. Ferguson	Mechanical Egr.	Copeland Corporation
Jennifer Finch	Materials Science	SOCHE/WPAFB
Keith Gerhardt	Mechanical Egr.	General Motors
James P. Heineman	Electrical Egr.	RTA
Carlos Hernandez	Computer Science	SOCHE/WPAFB
Donald Imboden	Mechanical Egr.	General Motors
Amy Jolly	Mechanical Egr.	General Motors
John Kallas	Electrical Egr.	Cincinnati Milacron
Kevin Krieg	Mechanical Egr.	General Motors
Thomas O. Lambert	Human Factors Egr.	General Motors
Gopal Marath	Mechanical Egr.	AT & T
Anthony May	Computer Science	SOCHE/WPAFB
Ronald McDonald	Electrical Egr.	A.O. Smith Company
Patrick McWhorter	Computer Egr.	Ball Systems
Jeremy Olson	Mechanical Egr.	General Motors
Douglas Oostebaam	Computer Egr.	Mead Data Central
Christopher Palsler	Materials Science	SOCHE/WPAFB
George Panson	Mechanical Egr.	Modern Ind. Plastics
Christopher Penick	Mechanical Egr.	General Motors
Paul A. Peterson	Mechanical Egr.	Copeland Corporation
Douglas L. Potts	Electrical Egr.	RTA
Kirk Proconiar	Mechanical Egr.	Montgomery County
Steven Proconiar	Mechanical Egr.	Cooper Power Tools
David Richards	Computer Science	General Research
Joseph Scheckel	Mechanical Egr.	SOCHE/WPAFB
Lorin J. Shirdon	Mechanical Egr.	Modern Ind. Plastics
Scott Stringer	Mechanical Egr.	Modern Ind. Plastics
James W. Stubb	Materials Science	SOCHE/WPAFB
Michael Sturgeon	Computer Science	General Research
Venkatramani Swaminathan	Electrical Egr.	Mead Data Central
Barrie R. Timpe	Computer Egr.	Systran Corporation
John R. Welch	Engineering Physics	SOCHE/WPAFB
Paul Zwart	Mechanical Egr.	Montgomery County

# April 1994

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					April Fool's Day 1	2
3	4	5	6	7	8	9
10	Telecon 7-8 am Lift Off 405 RC 11	12	13	14	Last Day to Drop a Class W/O a Grade of "W" 15	Senior Summer Registration EIT Exam 16
17	Telecon 7-8 am Lift Off 405 RC 18	Telecon 4-5pm CarnegieMellon U EE Curriculum 405 RC 19	20	21	22	Junior Summer Registration 23
24	25	26	27	28	29	Sophomore Summer Registration 30

# May 1994

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Freshmen Summer Registration Begins 1	2	3	4	5	6	Senior Fall Registration Begins 7
8	9	10	11	12	13	Junior Fall Registration Begins 14
15	16	17	18	19	COLLEGE AWARDS BANQUET 20	Sophomore Fall Registration Begins 21
Freshmen Fall Registration Begins 22	23	24	Last Day to Apply for August Graduation 25	26	27	28
29	Memorial Day No Classes Offices Closed  30	31				

# ATTENTION HIGH SCHOOL STUDENTS

## SHADOWING PROGRAM

High school students are invited to spend a day on our campus with a freshman, sophomore or junior engineering or computer science student. You can attend classes, labs, and club meetings, and meet faculty members and students. For more information call 513/873-5001.

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The College of Engineering and Computer Science welcomes inquiries from prospective high school students. For information about our engineering and computer science programs, or to arrange for a tour of the Russ Engineering Center, call Dick Rathbun, Assistant Dean, 513/873-5001.

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**EDUCATION PAYS.....**(According to Kiplinger's Personal Finance Magazine, Apr. 94) The more you learn, the more you earn. What's startling is the magnitude of the so-called earnings premium for additional schooling and how fast it has grown in recent years. On average, college-educated workers make 65% more than workers with high-school diplomas; 15 years ago, college graduates made just 35% more.



**Wright State  
University**

College of Engineering and  
Computer Science  
Dayton, Ohio 45435

Office of the Dean

Make Reservations to Attend  
the  
ANNUAL COLLEGE  
AWARDS BANQUET  
Friday, May 20, 1994  
6:00 p.m.  
Berry Room  
Ervin J. Nutter Center

**YOU'RE  
INVITED**

Special Guest Speaker  
President Harley E. Flack