A message from the dean

Enrollment numbers, building plans are top issues

My visits with engineering alumni over the past six months, both on and off campus, have resulted in generally upbeat conversations that reflect in no small part the strength of the economy.

They also serve to remind me of the scope and breadth of the careers and businesses in which our alumni find themselves, and of differing ways in which the economy affects us all.

They often ask me how we’re doing in the College of Engineering, and I always have to reply that there is no straight-line correlation in an economy that is as diverse as the one we live in.

As an example, we are now seeing a decline in graduate enrollment that is the result of a strong economy in which bachelor’s degrees are very marketable.

This is a concern to us, but very typical of a strong economy.

At the same time, the market-driven demand for bachelor’s degrees is only part of a complex issue.

For example, while many peer institutions freely offer graduate fellowships, our inability to offer such support can only be seen as an impediment.

We are, to put it frankly, quite short of the number of such fellowships needed to attract top-flight students. A new program aimed at graduate-level tuition scholarships has been made available to us for the fall quarter, but these awards are limited in scope and number.

At the same time, we are experiencing a decline in research funding, which in large measure drives the kind of graduate support that we are able to offer. This is due in part because of a faculty that is stretched to its limits in terms of workload, and as a corollary, because we are seeing faculty leaving Auburn for states that have a much stronger commitment to higher education.

In turn, many of these positions are not being filled due to the budget problems that all of higher education in Alabama is experiencing because of fewer state appropriated dollars over the past four years.

This is a problem that I have discussed before in Auburn Engineering, and won’t delve into now. As I have said in these pages, and in other venues, it’s one that we are meeting as aggressively as possible within the resources made available to us. Its obvious consequences lie, of course, in the future economic health of this state.

(continued on next page)
—A message from the dean

(continued from page 1)

Undergraduate enrollment in the College of Engineering has risen slightly over the past year to 3,200 students, continuing a trend that is mirroring national figures. We expect to see it continue, and even increase in the foreseeable future as the demand for engineers remains strong.

In fact, I have to point to the continued strong demand that we see for Auburn engineers as a telling indication of the quality of our programs, even in the face of some of the difficult choices we have asked the faculty to make over the past several budget years.

I also have to point to the positive steps we are taking in Auburn Engineering to assure the quality of our future graduates.

We are now involved in a space planning study — Engineering 2005 — to determine how to adapt to our needs over the next 10 to 15 years. In addition to determining how space in the engineering quad should be allocated, we are looking ahead to our future building needs and requirements.

We are in the early stages of this effort, and I won’t presume to forecast its outcome. The planning process includes not only those of us in engineering, but the university administration as well, and beyond that, the approval of the board of trustees.

I can point to the progress we are making in the renovation of Wilmore Laboratories. Those of you who revisit the campus during the fall football season will see some measurable results in terms of site preparation and the beginnings of interior work.

As I have related to you before in these pages, the new Wilmore will not only be rebuilt in terms of meeting new codes and curriculum needs, but will be a state of the art structure in terms of heating, cooling, and the installation of wiring and fiber optics to handle the ever increasing linkages required by data transmission to and from remote sites.

During the past fall quarter, we held a rededication ceremony to mark the beginning of Wilmore’s restoration, in which many of you participated. We thank you for your support of our efforts in this area.

As we plan for the future we ask that you keep Auburn Engineering in mind, whether you are a graduate of the fifties, or are just starting a career.

“These have been the hardest four years of my life,” a young mechanical engineering graduate recently told me. “And the best.”

As I approach a decade here, and a personal benchmark as dean of engineering, I could say the same — and say it for the past ten.

Change to semester system should benefit Students in the university's co-op program

The change to a semester system in fall quarter of 2000 should benefit Auburn’s cooperative education students by making their schedules more compatible with employers, according to Kim Durbin, who directs the program.

“What we are hoping to achieve with the large number of institutions that are already using it,” he said. “The word that we are getting from employers is that it will also be more compatible with their hiring schedules.”

The College of Engineering leads Auburn University in students using the program, Durbin notes. Under the current system, co-ops have been alternating quarters of class with quarters of work either winter and summer, and attending class during fall and spring, or visa versa.

“What we are hoping to achieve with the semester system is to have students alternating one academic term at school and one academic term at work,” Durbin said. “Students generally prefer to work in the summer, but under the semester system, students actually will end up working a summer, a spring and a fall semester. This will facilitate a more balanced program.”

Durbin says other advantages the semester system will bring to the co-op program are:

- Scheduling of mailings, student interviews and employer recruiting will take place three times per year instead of four;
- Students will move fewer times on the semester system. Currently co-op students move a minimum of eight times under the quarter system. On semesters, they will move a minimum of six times;
- Longer work periods as a result of the longer semester term could result in more challenging and rewarding work assignments for students;
- There will be more time between the busy enrollment and employee, student interviewing periods, thus enabling more efficient program planning.

The co-op program can function successfully on either the quarter or semester system, says Durbin, but employers cannot mix quarter and semester students effectively.

“Our peers are moving to the semester system,” he added. “If Auburn doesn’t change, we will be out of sync with the rest of the world, and Auburn students will not be getting the jobs.”

Durroh named to award

Latisha Durroh, marketing coordinator for the Graduate Outreach Office in the College of Engineering, has been named an Outstanding Young Woman of America.

The award — presented by McClean, Va.-based Outstanding Young Americans — recognizes professional achievement, leadership ability and service in the community.

Durroh, an Auburn psychology graduate, has worked for the Graduate Outreach Office since 1996.
AE graduate Jim Voss is named To second 1999 space station crew

Aerospace engineering alumnus and NASA astronaut James Voss has been named to the second crew to live and work aboard the International Space Station in 1999, U.S. and Russian space agencies have announced.

Voss, a 1972 graduate from Opelika, and another astronaut, Susan Helms, will be on a five-month mission commanded by Russian Cosmonaut Yuri Usachev.

They are expected to relieve the ISS' first crew in the summer of 1999, and will arrive via the Space Shuttle Atlantis.

Voss, a veteran astronaut with three space missions including one space walk, was on the Auburn campus fall quarter and visited with engineering students.

An Army colonel, he has logged more than 600 hours in space flying on three shuttle missions -- as a mission specialist on STS-44 in 1991 and STS-53 in 1992 and as the payload commander on STS-69, which included his first spacewalk, in 1995.

He is currently assigned to the Gagarin Cosmonaut Training Center in Star City, Russia, where he and fellow astronauts continue training for joint space missions.

The U.S. and Russian space agencies named four crews to continue the on-orbit construction of the space station through a series of scheduled space walks throughout the course of the first four missions. The astronauts and cosmonauts will perform flight tests of the station hardware, conduct internal and external maintenance tasks and develop the capability of the station to support the additional science experiments.

Voss was assigned to NASA’s Johnson Space Center by the Army in 1984, where he worked as an engineer supporting shuttle and payload testing at the Kennedy Space Center, participated in the STS-51 shuttle accident investigation. He was selected as an astronaut candidate in 1987. After a one-year training program, he was named an astronaut in 1988.
Chai Hong (Jay) Yoo of the civil engineering faculty has been named as Huff Eminent Scholar in Civil Engineering, according to an announcement from Joe Judkins, department head.

“I am very pleased that Dr. Yoo has been named to this honor,” Judkins said. “His track record in this department has been marked by a dedication to his students, and innovation in his research efforts.”

Yoo has been a member of the civil engineering faculty at Auburn since 1980, when he was named as associate professor. A 1971 graduate of the University of Maryland’s doctoral program, he held positions in engineering at Marquette University prior to joining the Auburn faculty.

His appointment as the Elton Z. And Lois G. Huff Eminent Scholar in Civil Engineering follows his tenure as Gottlieb Professor in Civil Engineering, to which he was first named in 1984. He succeeds former faculty member Fred J. Molz in holding the Huff chair.

“Jay has achieved international recognition for his research and teaching career in the field of structures,” Judkins added in announcing the appointment. “In particular, his work focuses on horizontally placed curved flexural girders, which comprise the principal design element in such structures as highly complex urban expressway interchanges.”

His work in the area, which spans 25 years, has resulted in the development and implementation of practical design criteria to problems otherwise constrained by the inherent complexity of such complicated, high-density structures.

Yoo’s knowledge of the problems and solutions related to the design of such structures is the focus of “Analysis and Design of Curved Steel Bridges,” a comprehensive text and reference tool which remains the benchmark for researchers and practitioners in the field.

“As a scholar his commitment to teaching is based on the development of creative and analytical thinking in students, underpinned by an appreciation of civil engineering fundamentals and attention to detail,” Judkins adds.

“He’s work in outreach includes the development of teaching materials for state-based agencies such as the Alabama Department of Transportation as well as national regulatory bodies such as the Federal Highway Administration.”

The Elton Z. And Lois G. Huff Eminent Scholar Chair was established in 1989 to enhance the quality of teaching and research in the College of Engineering through faculty who bring national and international recognition to the various departments within the university.

Auburn University’s Aviation Management program will take a step forward with the use of a cockpit procedures trainer donated to the university by American Airlines.

“Having this unit will greatly enhance our ability to teach the students about jet aircraft power plants and systems,” says Bob Ripley of the aerospace engineering faculty.

“Using the CPT will allow students to gain some hands-on experience in the procedures necessary to operate these types of aircraft.”

The trainer, which was used by American Airlines to train its DC-10 pilots, came to Auburn from American’s flight academy in Fort Worth, Texas. Roland Desjardins, American’s director of commercial flight operations, was instrumental in making the donation possible.

“I’m familiar with Auburn since I’ve been a trustee of the University Aviation Association, which is headquartered there,” Desjardins said. “I’m familiar with the school’s reputation in the industry and so when this unit became available for donation, I contacted the people at Auburn to begin the process.”

According to Ripley, a brand new CPT would sell for “several million dollars.”

“This is definitely a significant contribution and one for which we are very appreciative,” he said. “It will enhance the effectiveness of our teaching program and should result in our graduates being even more competitive in the industry.”
**McClain joins the textile engineering faculty**

Alicia McClain has been named as assistant professor in the Department of Textile Engineering, according to an announcement by William Walsh, department head.

“Her skills give us a new strength in polymers, which represents a direction textile engineering needs to explore at Auburn,” Walsh noted. “We are very pleased to bring her on board the faculty.”

McClain, a native of Florence, S.C., comes to Auburn from the Department of Textiles and Clothing at the University of California at Davis, where she received her doctorate in agriculture and environmental chemistry in the division of fiber and polymer science.

At Davis she conducted research into the synthesis of chelating agents as a method of removing heavy metals from waste water. She expects her research at Auburn to involve similar studies, this time with the kind of hydrophilic chelating ion exchangers used in the textile industry to treat effluents.

McClain received her bachelor’s degree in chemistry from Benedict College in Columbia, S.C., and her master’s in inorganic polymer chemistry at Clark Atlanta University in Georgia.

“The facilities at Auburn attracted my research interests, since they involve the use of atomic absorption and infrared spectroscopy, as well as other advanced characterization tools,” McClain notes.

“More than that, I was struck by the friendliness of Auburn in terms of its collegiate atmosphere, which is not unlike Davis. The faculty in textile engineering have been very friendly and helpful to me as well.”

**Agricultural Engineering Names Baier to position**

James W. Baier has joined the Department of Agricultural Engineering as an assistant professor, according to an announcement from Paul K. Turnquist, department head. The appointment was effective Dec. 15, 1997.

Baier was awarded the doctorate from the University of Kentucky in biological systems and agricultural engineering last year, where he also earned a master’s in the field in 1991, and the bachelor’s degree in 1987.

“His teaching responsibilities include irrigation systems design and soil and water conservation engineering,” Turnquist said of the appointment. “This includes agricultural, residential and commercial areas, including the development and maintenance of sport complexes and golf courses.”

Turnquist notes that Baier’s research interests include natural resources engineering, water use and quality as it relates to irrigation for agricultural and urban use, and the prediction of soil erosion distributions.

He brings to Auburn nearly a decade of consulting experience in commercial, residential and athletic field irrigation system design.

“We are fortunate to find in Dr. Baier a wealth of experience in those fields that are undergoing the most robust growth in today’s economy,” Turnquist noted. “We believe that his interests will integrate very well into those of our current faculty, and add to them.”

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**ACIPCO scholarships**

American Cast Iron and Pipe Company has established an annual scholarship program, with funding of $20,000 per year for engineering students, according to an announcement by Larry Benefield, associate dean for academics.

To be considered for funding through the scholarship program, applicants must be enrolled as full-time students in civil engineering; computer science and engineering; electrical engineering; industrial and systems engineering; or mechanical engineering.

The program consists of eight scholarships funded at $2,500, with two each for freshman, sophomores, juniors and seniors.

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**Citation sets Endowment**

Citation Corporation of Birmingham will establish a $500,000 scholarship endowment at Auburn for engineering students.

“Auburn is grateful for Citation Corporation’s investment in the College of Engineering and the future of engineering for our state,” the university’s president, William V. Muse, said.

“A scholarship endowment of this magnitude will allow the college to continue to attract and graduate the state’s top engineering students.”

The scholarships will be awarded to engineering students whose programs of study benefit the foundry industry, according to William F. Walker, engineering dean.

“As the foundry industry evolves, we depend more and more on the innovation and expertise of well-trained engineers,” said T. Morris Hackney, president and chief executive officer of Citation.

“Through its commitment to engineering education, the Citation Corporation endeavors to create opportunities for the next generation of men and women who will promote this industry.”

Under the 22-year direction of Hackney, Citation has grown from a modest Birmingham foundry to a $650 million corporation with more than 6,000 employees throughout 18 units in nine states. Customers include Ford, Caterpillar, Dana Corporation, Chrysler, General Motors, John Deere, and many other smaller companies.

A Birmingham native, Hackney is a 1953 graduate of the U.S. Naval Academy. His activities in the arena of higher education include service on the trustee boards for Birmingham-Southern College and Marion Military Institute, and as a member of the president’s council for the University of Alabama.
Robinson memorial Scholarship named For 1980 EE grad

A memorial scholarship has been established in the name of Philip Robinson, the son of Ray and Jimmie Robinson of Soddy Daisy, Tenn.

Philip was a 1980 EE graduate, following in his father’s footsteps, a 1955 graduate from Auburn in electrical engineering. He was awarded an Air Force ROTC scholarship in 1976 and entered the service in 1981, following his graduation. After the completion of flight training at Laughlin Air Force Base in Del Rio, Tex., he continued on base as a pilot instructor.


The Citation reads in part: “Lt. Robinson served as Unit Instructor Pilot, Flight Scheduler, Flight Flying/ Ground Safety Officer, and Computer Officer. In each of these capacities, his dedication, dependability, and leadership contributed immeasurably to the mission accomplishment of the 86th Flying Training Squadron and the 47th Flying Training Wing.

“The singularly distinctive accomplishments of Lt. Robinson in the dedication of his service to his country reflect great credit upon himself and the United States Air Force”.

His association with the service began when Philip attended Hixson High School in Tennessee, where he was a member of Air Force Junior ROTC.

Phil is fondly remembered as a “day-brightener” by his family, including his wife, Sheila Gann, whom he married in 1981.

“We are indebted to Phil’s family in the way that he has been remembered,” Engineering Dean William F. Walker noted. “This scholarship will stand as a testament to his memory at Auburn in perpetuity.”

Digital future

Megan Nix, who grew up in Auburn, didn’t have to look far to find the right mix of classroom and extracurricular activities in a town that combines an ambiance of friendliness to a university atmosphere with state of the art computing facilities.

Megan Nix picks computer mix

Megan Nix is a pragmatic dreamer, which may be less of a contradiction in terms than a place where perhaps all aspiring engineers should be.

As a dreamer, she envisioned Duke as a place to start her journey into higher education; as a pragmatist, she chose Auburn.

As a pragmatist, she chose computer engineering, but in class she dreams of poetry.

And while her mind takes her a thousand places, she has narrowed her goals down to two: a career path at NASA as a computer programmer, and as a reform-minded legislator with an eye toward the environment.

Maybe she pulls a little of each from her parents; her father, Mike, is a juvenile district judge who’s been in politics for two decades; her mother, a chemistry teacher who’s been in the classroom nearly as long.

“I’ve always been drawn to the issues, to debate and forensics,” she explains. “I’m becoming involved in the SGA cabinet as well as Collegiate Legislature, a mock law forum sponsored by the YMCA. I can see myself involved in legislative issues in the future.”

At the same time, she sees her greatest academic strengths as physics and math, and considers engineering as a method to apply them “to real life situations.”

In that respect, while she dreams of life on Mars and looks with fascination at the unlimited frontier of space, she finds her interest in the physics of getting there a natural place for her attraction to computer engineering.

“I think I would have chosen mechanical engineering as a possible field of study because of the classical mechanics and physical laws that are so much a part of it,” she observes. “But my love of computers and computing is too strong.”

It’s the kind of passion that she carried over to her choice of Auburn as a place to pursue her dreams.

“In all honesty, I was really attracted to Duke for its prestige, and the caliber of students that I expect you would find there,” she relates. “However, it was never really an option because of the cost.”

What the scholarship student found in her own back yard — she was born and raised in the Auburn area — surprised her.

“First I have to say that some of my friends thought I was crazy to stay in Auburn — they said they would have done anything to get out,” she relates.

(continued on page 11)
Susan Story says
IE background
Plus in versatility

Susan Story is not the first Auburn Engineer to find herself in real estate — others have as well, whether it was incidental to a project, a primary component in a career, or as some have done, even a venture into residential development.

She does represent perhaps the tightest integration of a corporate career to an engineering education in this area, encompassing process planning, a familiarity with electrical and mechanical engineering, and the leadership abilities to manage a large work force.

A 1981 graduate in industrial engineering, Story serves as vice president of corporate services and corporate real estate at Alabama Power, a position she has held since 1996.

“These were really totally new areas to me when I accepted them,” Story comments. “But I was prepared for it through my engineering background and the leadership development process that is an inherent part of the way Alabama Power prepares its people for leadership positions.”

Story began her career at Alabama Power fresh out of industrial engineering (now the Department of Industrial and Systems Engineering) in 1982, as a junior engineer based in Birmingham.

“My first assignments took me to the Farley Nuclear Plant in Dothan, and it wasn’t unusual for me to spend two weeks out of the month there, coordinating machinery and equipment inspections with equipment and liability insurance inspectors,” she relates.

Her task at hand — integrating the process operations of machinery and manpower to the needs, requirements and expectations of groups external to the corporation — became a harbinger of a career that has closely followed (continued on page 15)

Analog past
Steve Henderson, left, is still trying to figure out how to operate the manual fifties-era calculator in his hand, which uses a clockwork mechanism to add, subtract and multiply. At the same time, network engineer Douglas Hughes, right, admits he has never used a slide rule.

Steve Henderson built engineering
Computer network on a shoestring

Steve Henderson will be the first to tell you that things didn’t turn out the way he expected them to when he returned to Auburn in 1984. The 1982 electrical engineering graduate had been hired away from a sales job to run the College of Engineering’s computer system, which consisted of what were then called minicomputers.

They weren’t exactly laptops, one of them filling most of a wall, side to side and top to bottom, in his nondescript, windowless office down some lost hall in Wilmore Laboratories. A Halon fire extinguisher, the size of a small booster rocket, was plumbed into the facing wall.

“These were the computers that were going to return computing to the users,” he remembers. “And to be fair, in large part that’s what they did, freeing us in engineering from having to rely on the mainframe over in Parker Hall.

“The minis, which were appreciably smaller than mainframes of the era, could run most of the programs the larger machines handled and provided most of their capabilities, all at less cost. And they were locally situated, with a staff that was much more aware of the needs and mission of the College of Engineering.”

There were two of them, eventually, a Harris 500 and an 800, which were augmented by a DEC and VAX in electrical engineering and computer science and engineering. They’re now footnotes in Auburn Engineering’s computing history, replaced by equipment then barely on the drawing board — or cad/cam (continued on page 14)
Extension's Bryant Named chair-elect Of ASEE division

James O. Bryant, who serves as the College of Engineering’s associate dean for extension, has been named as chair-elect of the continuing professional development division of the American Society for Engineering Education (ASEE).

The appointment was announced at the group’s annual business meeting held in February as part of a conference for industry and education collaboration.

Bryant brings to the position more than 30 years of experience in environmental engineering, education and training, and a wide range of expertise in municipal solid waste management as well as the treatment of municipal and industrial waste water. He has extensive international experience, primarily in Latin America and the Middle East, and has served as consultant to the World Bank in the evaluation and training of water quality certification personnel.

Bryant has also assisted USAID in defining benchmarks for institutional development in Egypt’s water and wastewater sectors.

He has served ASEE in a number of positions, and is registered as a professional engineer. He holds undergraduate and doctoral degrees from Clemson, and the master’s from Rice University.

Bryant joined the College of Engineering as associate dean for extension in 1994. Since assuming this position, he has expanded the college’s outreach to industry, and was instrumental in forming the Auburn Industrial Extension Service, a strategic alliance between the College of Business, the Alabama Cooperative Extension System, the Auburn Economic Development Institute, and the Office of the Vice President for Outreach to promote technology transfer and provide technical assistance to Alabama industries.

Under his leadership the College of (continued on page 9)

Industrial know-how

Sabit Adanur holds a copy of his text, the Wellington Sears Handbook of Industrial Textiles, one of two volumes he has authored. Adanur’s research interests include high performance textiles, an area that is expected to increase dramatically in the future.

Adanur keys on high technology textiles

Sabit Adanur’s research interests in high performance industrial textiles has resulted in the publication of “Paper Machine Clothing,” which is expected to quickly become an industry resource in the field.

The textile engineering faculty member’s first textbook, the 850-page Wellington Sears Handbook of Industrial Textiles, has been a best-seller since it was published in 1995, and has become an industry standard.

“Paper Machine Clothing,” the first such text in the industry in the past 30 years, is a 400-page manual published by Technomic Publishing Co.

The volume grew out of ongoing work in the field during his tenure here at Auburn, but also draws from several years of prior research experience in industry, managing the R&D department of a large papermaking fabric company.

Adanur has been heavily involved in research since his arrival on campus in 1992, with total funding of more than $1.5 million under way or completed.

In addition to industry funding, he has also been involved in research efforts in conjunction with the National Science Foundation, where he was named to a four-year faculty early career development grant in the area of composite capabilities.

He has also been involved in research with the National Textile Center, a consortium of institutions that includes Auburn, North Carolina State, Clemson and Georgia Tech.

His work with the center has been cross-disciplinary in nature, particularly as it relates to geotextiles, an area in which he has collaborated with David Elton of the Department of Civil Engineering.

Adanur has received broad national and international recognition for his efforts, and has given lectures and presentation in Canada, Egypt, Japan, Turkey and China.

“It is important to note that Dr. Adanur’s contributions are not limited to research,” William Walsh, textile engineering head, is quick to point out.

“He is the department’s top faculty member in terms of course development with six new courses, and is chairman of the textile engineering curriculum committee, which closely involves him in the development of program revisions for upcoming standards being mandated by ABET’s Engineering Accreditation Commission.”

Adanur is active at both the undergraduate and graduate teachings levels, (continued on page 9)
Agricultural Engineering looks to add field of ‘biosystems’

Auburn’s agricultural engineering program, which has doubled in the past two years, expects its numbers to rise even more after it implements a name change to “biosystems engineering.”

The new name, subject to approval by the institution’s board of trustees, is part of an overall effort to reposition the program to meet future needs, according to department head Paul Turnquist.

“There are a lot of potential students whose interests match up with what we do now who will be attracted to ‘biosystems’ engineering, but don’t consider ‘agricultural’ engineering,” he adds.

“The word ‘agriculture’ is unfortunately perceived by most of the public as being very narrow. I like to think of agricultural engineering as being associated with the twentieth century and biosystems engineering as a contemporary program for the next century that meets the needs of the agriculture, food and natural resource industries.”

The Department of Agricultural Engineering has a unique dual relationship with the College of Agriculture, where it is administered, and the College of Engineering, where students are placed in terms of enrollment.

“Students are encouraged to be active in both colleges,” Turnquist explains. “In some ways, we’ve got the best of both worlds.”

Graduates from the program are prepared to solve engineering problems that are associated with the interaction between the physical and biological worlds, he adds.

“We’re the engineers with an understanding of agricultural sciences and new engineering technologies. The biosystems engineer applies engineering advances to agriculture and related areas.”

A popular field for alumni has been environmental and natural resource issues. A survey of past graduates revealed that 38 percent are working for waste management companies, with the Alabama Department of Environmental Management, the Natural Resource Conservation Service and consulting and engineering firms.

Computer Society elects CSE's Cross to term

James H. Cross II, chairman of the Department of Computer Science and Engineering, has been elected to a three year term on the board of governors of the IEEE Computer Society. The largest such professional organization of its kind, the society is dedicated to all facets of computer technology.

Cross has served in numerous capacities over the past 12 years in the society’s technical council on software engineering, including a term as chair of the committee on reverse engineering. He has also served on the executive committee, and as general secretary.

“The goal of my activities in this society has always been to seek a balance between research and practice,” Cross notes. “Since the majority of its members are practicing software and computer engineers, the Computer Society provides international leadership and direction for the conception and application of new technologies.”

In addition to his responsibilities as CSE department chair, Cross teaches undergraduate and graduate courses in software engineering and directs research in the areas of object-oriented analysis and design methodology, testing, reverse engineering, visualization, and metrics.

His most recent efforts include research projects funded through NASA and the Department of Defense, focusing on reverse engineering and the automatic generation of graphical representations of algorithms, structures and processes for software.

—Adanur cites program strengths

In terms of his own work, Adanur sees the potential for research into technical textiles as unlimited.

“This is where most student get their first real feel for research, in the preparation and completion of these projects,” Adanur notes. “It is the kind of atmosphere that not only prepares students to think independently, a personal quality that is demanded in industry, but also serves as an introduction to the possibilities that exist in graduate study.”

Computer Society elects CSE's Cross to term

(continued from page 8) and is particularly active in the design sequence for undergraduate students, where he has already supervised 22 projects.

“This is where most student get their first real feel for research, in the preparation and completion of these projects,” Adanur notes. “It is the kind of atmosphere that not only prepares students to think independently, a personal quality that is demanded in industry, but also serves as an introduction to the possibilities that exist in graduate study.”

—Bryant

Engineering has also expanded its distance delivery of engineering continuing education through the Engineering and Professional Development (EPD) program, which provides an opportunity for registered engineers to earn to remain current in the field through video correspondence courses.

Bryant has also been involved in the implementation of the college’s Engineering Leadership Institute (ELI), which provides a way for engineers to transition to management and leadership roles in their companies.

He has also spearheaded the colleges’ effort to take its extension programs nationally. This year the Engineering Extension Service will offer courses in Georgia, Tennessee, North Carolina, Kentucky, Arizona, Michigan, Texas, New Mexico,
Auburn students plan to enter two Mini Baja teams into competition this year, including an all-women’s team, which marks an Auburn Engineering first, according to Peter Jones of the mechanical engineering faculty, who is sponsor to both teams.

“The objective of the Mini Baja competition is to give engineering students an opportunity to apply the knowledge they have learned in the classroom to a real situation,” Jones explains.

“While the classroom gives students the opportunity to learn about the design of mechanical systems, the competition gives them the opportunity to fabricate their design.”

The concept for the competition is to produce a vehicle capable of negotiating rough terrain and deep water without damage. The vehicle must also be safe, fun to drive, and easily maintained.

Sponsored by the Society of Automotive Engineers (SAE), the teams compete against each other at three regional Mini Baja venues — East, Midwest, and West.

“The vehicles are tested both for soundness of design and performance of the finished product,” Jones explains.

“Design judging includes written reports, a visual inspection by SAE officials, and presentations by the team.

“The performance of the vehicle is the main focus of the Mini Baja, however. Various aspects are tested directly, and the conclusion of the event is a grueling three to four hour endurance race across rough terrain and water.”

The women’s team was born from an SAE effort to encourage greater female leadership. To participate, entering teams must be comprised primarily of women, or be led by a woman, and/or managed by several women.

“In response to this challenge, the College of Engineering decided to enter two Mini Baja teams, one male team and one female team,” Jones reiterates.

“Though funding was allocated for only one team, the students chose to split the seed money, and both teams are, of course, looking for sponsors and additional funding.”

Both teams are working diligently and plan to have a rolling frame ready by late February in time for E-Day activities. The teams expect to have complete vehicles ready by the end of March.

Testing and design improvements are scheduled from April through early May, with the competition scheduled for May 14-16 in Cookeville, Tenn.

The men’s team, which has been competing since 1991 following a hiatus of several years in which teams weren’t fielded, has traveled to Orlando, Milwaukee and Montreal to race. The women’s team is now ready to follow suit — and compete for the $1,000 in special prize money going to the top female team.

If you would like to be kept informed of each team’s progress, both teams have web sites on the engineering home pages — http://eng.auburn.edu/organizations/WMB (women’s) and /MMB (men’s). They can be contacted by mail at Mini Baja Team, 202 Ross Hall, Auburn University, AL 36849, or e-mailed at minibaja@eng.auburn.edu.
— Nix points to town's ambience, college's cutting-edge atmosphere

(continued from page 6)

“But I like Auburn’s size, its small-town atmosphere, and the fact that it gets turned upside down on football Saturdays. I know that if I went somewhere else, I would feel like coming back all of the time.

“I can’t tell you what a big booster my dad is, either.”

At the same time, Megan points to “a cutting-edge quality about this campus” telegraphed to her by favorite faculty members such as Charles Neely in chemistry or Narendra Govil in mathematics.

“Dr. Neely taught my parents,” she adds with a laugh. “I’m sure they were better students!”

Maybe, maybe not. Because she took college-level courses in her senior year at Auburn High, and tested out of several others, Megan spent her first quarter, in the fall of last year, as a freshman, her second one this winter as a sophomore, and will spend spring as a junior.

“The engineering prep courses that I’ve been taking have been small, discussion-oriented classes,” she notes. “It was not what I looked to from Auburn, because I had been told to expect nothing but huge lecture classes.”

Disappointed when she gets a grade lower than an A, she nonetheless admits to falling behind on homework, daydreaming in class, and making careless mistakes in arithmetic.

“I am taking a lot of hours now,” she admits, “because upperclassmen have told me that I’m not going to get away with this stuff when I get to the engineering sequences.”

She fully plans to walk away from Auburn in the prescribed four years, but with two diplomas in hand — computer engineering and political science.

“I’ve always been pulled between ‘art’ and ‘science’ in my interests and abilities,” Megan explains. “But I don’t feel that you should have to choose between one and the other. I think that you can live both of them, and be the kind of well-rounded person that we think of as a renaissance figure.

“I feel that you don’t have to hate English to be an engineer. I have a problem with that kind of judgment . . . and wish that society had more of a place for both.”

It’s a feeling that carries over into one of her favorite hobbies — dance — which she points to as having a technical side and an emotional passion.

“It’s so precise,” she says. “And so imprecise.”

A competitor, she enjoys auditioning for regional dance events, and participates in choir as well.

“Life is God’s greatest gift to you, and your gift to God is what you make of it,” she says of a favorite expression. “I feel that if you’re given talent and ambition, you should follow that belief.”

Megan’s plans beyond Auburn are seemingly lost in the swirl of campus life in which she finds herself involved today, but she expects to continue her education beyond the bachelor’s degree; the decision on just where will have to wait. Her most immediate goal?

“This is an election year,” she smiles. “We need to get dad re-elected!”

AU initiates Alabama's first honors college

The university officially redesignated its honors program as the AU Honors College -- the first in Alabama -- on Feb. 16, a date that saw more than 400 top high school students attend as a part of Merit Monday, a day-long program designed to showcase Auburn to the best and brightest prospective high schoolers.

“The honors program is a major factor in attracting top-flight students to the university,” Auburn President William V. Muse said, following action by the institution’s board of trustees to approve the change.

Bill Gwin, who administers the college, notes that the redesignation allows Auburn the opportunity to establish itself as the state’s leader in the education of intellectually gifted college students.

“The change to an honors college gives Auburn a significant distinction among Alabama colleges and universities,” he said. “This is an effective, easy and inexpensive way to differentiate AU from other institutions in the state and it is something we can do now without having to wait for additional resources. Auburn is setting the pace by being the first to have an honors college in the state and gain the benefits.”

There are about 560 students in the Honors College, which has existed in some form since 1979. Nearly half of

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Civil Engineering scholars

Civil Engineering faculty member Ed Ramey, left, and Joe Judkins, department head, congratulate Jonique Parker of Fairfield, Ala., and Ashley Fuller of Summerdale on receiving scholarships from the Alabama section of the American Society of Civil Engineering. Parker anticipates graduating in 2001, Fuller in 2002.
Decreases in extramural funding in the areas of research, instruction and outreach at Auburn University during fiscal 1997 indicate yet one more casualty of operating under severe funding deficits.

After two successive years of 15 percent increases in sponsored research support fiscal 1997 ended with a nearly 21 percent decline. While some colleges and schools achieved increases in extramural research competition, awards in instruction and outreach also were down 16 percent and 33 percent respectively.

The drop comes after two successive years of growth in extramural research funding and during a year when Auburn is suffering from the loss of many of its most productive and senior faculty.

Honors eligibility requires an ACT score of at least 29 or an SAT score of 1280 or more, a 3.5 high school grade-point average and some demonstration of leadership in high school.

Honors College

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its enrollment is comprised of students in the College of Engineering, with the College and Science and Mathematics and the College of Liberal Arts enrolling about a fourth each. The College of Business follows with approximately 6 percent.

Honors eligibility requires an ACT score of at least 29 or an SAT score of 1280 or more, a 3.5 high school grade-point average and some demonstration of leadership in high school.

The requirements for admission into the AU Honors College are on a par with most schools in the region. But the percentage of AU honors students on scholarship pales in comparison to those same schools. The University of Georgia has 1,700 students in their honors program -- all on scholarship.

All of the 850 honors students at the University of South Carolina and the 270 at the University of Mississippi, both of which have honors colleges, are on scholarship. At Auburn, only 55 percent of the students enrolled in the honors program are on scholarship.

“Universities in our region compete with Auburn for the top students from our state and the surrounding states,” Gwin points out. “Many of them provide significant scholarships, computers and free housing that we don’t offer.

“The Auburn University Honors College completes the design and gains us even more advantages -- greater prestige, more visibility and probably more external support -- and, again, at no cost. If we can add other advantages such as computers, inexpensive internet connections and more scholarships and classes, we can establish a significant recruiting edge for the twenty-first century.”

“Without a very detailed analysis it would be difficult to determine exactly how much such things as the early retirement incentive offered at the end of 1996, the exodus of many of our faculty leaving for greener pastures, and increased work loads on remaining faculty affect the decline in sponsored research, but these factors certainly are among the causes,” Moriarty notes.

“Clearly, those faculty taking advantage of the retirement option were among our most senior and experienced researchers. Many had significant funding histories and proposals they would have written had they stayed, would likely have been funded during fiscal 1997.

“Fewer faculty were hired as replacements and those replacement faculty generally are newer in their fields and their capabilities for securing extramural funding are not yet strong enough to completely fill voids left by the loss of more experienced researchers.”

With overall faculty numbers also now fewer since the retirement offering, instructional loads are necessarily greater.

“Faculty, thus, have less time to devote to research and competition for extramural funding,” Moriarty added.

“The absence of any significant salary increases for the past three years also has affected morale, and this environment certainly does not help.”

While Moriarty says his analysis is theory based, he cites supporting data that shows decreased activity in the competition for extramural funding:

- The amount of the average award is down 12 percent;
- The total number of awards decreased 10 percent;
- There is a consistent decline in numbers of proposals submitted over each of the past three years — the factor Moriarty calls the most alarming.

Moriarty notes increases in extramural research funding achieved in the areas of agriculture, architecture, human sciences, liberal arts and sciences and mathematics.

“But the largest dollar declines were seen in such areas as engineering, space power and pharmacy — traditionally areas that drive economic development,” he said. “Continued deficits in these areas will directly translate into a decline in the quality of life within our state and region.”

Moriarty notes continued years of decreased or level funding for higher education will result in widespread eroding of the state’s ability to compete as an economic force.

“Unless our faculty have the support necessary to effectively compete in the research funding arena, the ability of our research institutions to conduct meaningful research also is going to be lost,” he added. “When this occurs, the losers will be the citizens of this state.”

Research Web Sites

Additional information on research within the College of Engineering is available on our web site at http://www.eng.auburn.edu. In addition to home pages for each of our research centers, departmental web sites include more details on faculty, laboratory and computer facilities, and related information.
The AU Foundation is the designated recipient of all gifts to AU and is certified as a “qualified charitable organization” meeting the standards and requirements of the Internal Revenue Service. As such the foundation assures those considering gifts to AU that the assets they give will be kept separate from public funds, will be invested in a prudent manner and will be applied only to those projects approved by the directors of the Foundation.

Anyone interested in making a gift to the College of Engineering through the AU Foundation should contact Karen L. Sharpless, Director of Development, College of Engineering, 317 South College Street, Auburn, AL 35849-5170, (334)844-2736.

Auburn’s student information will take on a new look fall quarter with the implementation of a new software system dubbed OASIS.

The Online Auburn Student Information System will support advising, registration and records, student billing and financial aid, admissions and graduation audits.

— Sharpless

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Students and faculty will be able to access OASIS through a World Wide Web front end while colleges and departments are expected to have more ready access to information for management and planning. OASIS will also ease the transition from quarters to semesters.

One of the more visible changes will be in new four-digit course codes, replacing the current system, which relies on two- and three-letter course prefixes.

Project leader Nick Backscheider is coordinating the work of the OASIS implementation team, made up of representatives from the offices of Admissions, the Registrar, Financial Aid, the Bursar, Planning and Analysis, the Provost, the Graduate School, and University Computing.

The team has spent the past few months customizing the system to meet Auburn’s needs and procedures and preparing for the conversion of the data in the current system to OASIS formats.

Over the next few months -- once the base system is in place -- testers will be recruited from around campus to provide feedback to the team. In early spring, more specific information and training in the use of OASIS will be made available.

Council award winners

Bill McNair, left, chairman of the Auburn Alumni Engineering Council, was on hand during fall quarter ceremonies honoring five Auburn Engineering alums for outstanding achievement. They include Dwayne McCay, recipient of the Engineering Achievement Award, and a 1969 graduate in aerospace engineering; Distinguished Auburn Engineers Ron Harris, a 1959 aerospace engineering graduate; Roy Norris, a 1967 chemical engineering graduate; Gerald Andrews, a 1959 graduate in textile management; and Earl Parsons, a 1960 electrical engineering graduate.

New software system will track student registration
Henderson’s vision for a computing environment for Auburn Engineering also began to take shape.

“Dean Walker was willing to take what was a huge risk at the time in terms of funding,” Henderson points out. “He worked with the university administration and with alumni, in particular the Alumni Engineering Council, in making things happen.”

What happened was what Auburn Engineering has now: an integrated, network based computing environment that has been termed as one of the best in the country, and certainly a benchmark in the Southeast in terms of its use and facility for both researchers and students.

“Our solution was to build a locally-based network of Sun workstations and servers integrated into a lower-level pc environment that served our needs from freshman introductory courses to research at the doctoral level and beyond,” Henderson explains.

“In essence, this configuration allows us to run a fast, open system distributed across a backbone of powerful workstations that can be accessed by the much less sophisticated pc’s as well.”

This network, composed of about 1,000 pc’s and nearly 500 workstations, now blankets the engineering quad, from faculty offices to labs that are open to students 24 hours a day.

“Early on in the development of this engineering-based net we saw the potential of the internet, and in 1988 adopted the protocols that essentially allowed us to simply ‘plug in’ when the campus went fiber-optic,” Henderson notes. “The transition was seamless for us.”

The computing environment in the College of Engineering today allows faculty to put information on the net that can be easily accessed by students and kept current by changing and updating as necessary, in a graphic and often interactive format.

Students are also able to access libraries, both on campus and off, research facilities, corporate web sites, and other institutions, Henderson notes.

“There is a lot more information available to the student now, in an easily retrievable form,” he adds. “It’s generally highly visual, which is one of the most important aspects of computer instruction. A good example would be the ability to model stress on a beam for a statics lab.”

At the same time, the introduction of this technology has created the need to adapt instructional methods to prevent the potential for abuse, Henderson says.

“It’s much easier now for a student to share assignments, copying and distributing them by e-mail to fellow classmates,” he explains. “Those students can modify this kind of material and make it their own.

“We’ll adapt to this reality. For example, in the future we’re going to see less reliance on homework, and more reliance on in-class testing.”

The use of computers in classrooms, particularly as they replace paper and pencil, is one of the most exciting horizons that Henderson sees for the new technology and the way it is applied to teaching.

“In the not so distant future, students will bring their laptops into the classroom, plug them into a port, and bring up the instructor’s class notes,” he points out.

(continued on next page)
Susan Story (continued from page 7)

these elements in a wide variety of positions at Alabama Power.

The environment she found herself in — one held to high engineering standards, with hundreds of millions of dollars in liability at stake — was also one in which new management strategies such as employee empowerment were being pioneered.

“As an engineer, I could correlate statistical performance with employee involvement in our processes,” Story notes. “At the same time I was learning to adapt to the changing needs of our customers.”

Her next assignment took Story to the Alabama Productivity Center as an associate director, where she was placed in a position of helping industry in production, finance and operations management, as well as corporate planning, which she eventually translated into a slot as assistant to an executive vice president at the corporate level.

“As I have moved into new areas at work I’ve found that the preparation I received at Auburn has been invaluable,” Story points out. “The most important thing I learned was how to learn, and learn easily. I’ve taken this ability to pick up on new concepts with me in everything from project budgets to strategic planning.”

At the same time, she adds, Alabama Power fosters a corporate style that unites an emphasis on performance to a conscious effort in presenting its leaders with new areas and new challenges.

“I learned a lot about leadership and organizational effectiveness as director of Human Resources when I was placed with Southern Company Services, a sister company, for a three-year period,” Story relates.

“When I returned to Alabama Power, I brought that with me.”

Story was then placed on loan to the Business Council of Alabama, the Montgomery-based business advocacy group, and developed an appreciation of the many facets that impact business and industry, including the political and regulatory climates that affect large utilities.

“It was important for me to understand how Montgomery works. While I was not a lobbyist, I gained an understanding of that process,” Story notes. “Legal issues, legislative hearings, and regulatory restrictions were all issues that I touched on.”

In terms of her current position, she heads a team of close to 400 in areas that range from corporate real estate to materials and fleet service, and transmission line right-of-way acquisition to property sales and leasing.

Successful results in business are only attained through teamwork in an environment of dedicated and competent people who share a common vision and common goals, Story believes. She carries this philosophy into community service as well.

She finds time for activities ranging from service on the boards of the Cahaba Council of Girl Scouts and Children’s Aid Society to volunteer work with the YWCA and Cystic Fibrosis Foundation.

She particularly values her relationship with the College of Engineering, serving on both the Industrial and Systems Engineering advisory council and serving on both the Industrial and Systems Engineering advisory council and the Alumni Engineering Council, where she sits on the governmental affairs and student liaison committees.

“I absolutely loved the time I spent at Auburn, and feel I was exposed to a lot of great opportunities there,” she relates. “The faculty was excellent, in particular Dr. Unger, who serves as department head.”

She was named as the department’s outstanding alumnus in 1996, one of many distinctions she has earned in her career.

“We need to continue to stress not only the importance of fundamental engineering education at Auburn,” she says of the College of Engineering, “But also the increasing criticality of a team-based approach to project management and problem-solving. At the same time we need to develop interpersonal and people skills in our graduates.”

Susan Story’s next move? She’s not sure — it may be a totally new area.

“Whatever it is, one of the most important things that I will take with me is what I learned from my years at Auburn — to pick up quickly a sense of what needs to be done — and to take a team approach in doing it.”

Henderson (continued from page 12)

out. “They can then make their own annotations, notes and observations right there in real time. Computers will be used in any way conducive to learning, and by that I mean in ways that we’re only now beginning to see.”

Should all students be required to bring a computer to class?

“That’s probably the only way we’re going to see a level playing field in the same way that it was when slide rules were the norm. Everybody had one.

“When calculators came on the scene, those students that used them had a leg up on those that didn’t. Then the point came, as calculators became more sophisticated and versatile — and cheaper — that all students had them.”

But there is a fundamental difference in the way computers are being used that makes their relative expense only one part of the equation.

“In the kind of computing environment that we are in now, computers are being used as the distributed, or parallel, tools of a team-based approach to problem solving,” he carefully points out. “This is how industry works now. For that very reason, it’s the way we’re going to have to work.”

In fact, Henderson notes, this kind of approach was once impossible to put into practice in the classroom.

“But now we’re right on the edge of that place where the computer in the classroom, the dorm lounge, and in front of a cup of coffee at two in the morning is no longer going to be a novelty,” he points out. “It’s becoming an appliance like the phone. It’s just simply going to be there.”

Henderson says that when he thinks back to how things were even five years ago, when Auburn Engineering was the first in Alabama to put a web page on the Internet, the same thought always comes to him:

“Anytime that anyone says anything about the direction computers are going, they’re going to be wrong.”

But, he adds, “At Auburn we’re going to anticipate, innovate, and keep an open mind to whatever comes down the road . . . not just to become a part of it, but as a contributor to its development.”
With funding of higher education in Alabama at a low ebb, colleges and universities throughout the state are increasingly reliant on funding from private sources.

At Auburn University, the AU Foundation serves as a separate charitable, tax-exempt organization through which individuals, corporations, foundations and others may enhance AU’s educational programs. Whether through annual giving, or endowments, gifts-in-kind, bequests or planned gifts, the foundation offers a variety of ways for alumni, friends and other supporters to help the College of Engineering meet its funding challenges. The foundation also assists in identifying areas of funding need that align with the donors’ interests.

“I’m sure there are many people out there who may be in a position to make contributions who aren’t aware of the variety of ways that the AU Foundation offers them to help Auburn,” says W. R. Miller, assistant vice president for the Office of Alumni, Development and University Relations at AU.

“I think it’s important to point out that, because of the foundation’s tax-exempt status, a gift to AU can offer significant tax savings and that there are even ways that a donor can continue to receive income from a gift to Auburn.”

The AU Foundation offers several so-called life-income or trust plans through which a donor may make a generous gift to AU, claim an income tax deduction for a portion of the gift at the time the donation is made, avoid paying capital gains on any appreciated property used to fund the gift and receive income earned by the gift either annually, semianually or quarterly.

“Through a trust, a donor can get checks for the rest of their life, but upon their death, the corpus of the trust goes to the AU Foundation,” Miller notes.

“Many donors find this a painless way to give. They don’t have to worry about what’s going to happen to the money after their death, they know it’s going to Auburn, and the income affords them some security. If they’re concerned about the possibility of some disability or other economic setback, retaining that income stream is pretty significant.”

Other options allow gifts to be made to the AU Foundation through a donor’s will or life insurance policy and gifts of securities and real estate are also accepted. The foundation even allows a donor to make a gift of real estate and continue to use the property as he or she chooses.

Another option that many aren’t aware of is the matching gift program, where a donor makes a contribution to the foundation and it is matched — sometimes tripled — by the donor’s employer.

“Almost all major corporations offer matching gift programs to their employees,” Miller points out. “It offers the corporation a way to give according to the wishes of its employees and encourages the employees to be philanthropic. All it takes to find out if your company offers such a program is to contact the personnel office. If they offer the program, they should be able to provide you with matching gift forms to send with the check.”

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