Click on the cover to view the report.
To Colleagues and Friends of the Woodruff School of Mechanical Engineering

Each year, I wonder how we can surpass our previous year's performance, yet we do because our faculty, students, administrative support, and facilities are terrific. Academic year 2000 was great for the Woodruff School. We now have a year's experience with the semester calendar and a curriculum specifically designed for the new calendar, a successful introduction of our on-line master's degree program, and a move into another new building.

It is not surprising that the number of students enrolled in our programs has increased and the quality of our students has improved. Our programs are excellent and attractive, and students recognize that. As of last fall, we had the largest graduate enrollment of any mechanical engineering program in the country. Our undergraduate enrollment is probably the largest as well. The continued improvement of our program is seen by the fact that we moved up to number six nationally in the latest U. S. News & World Report rankings of graduate mechanical engineering programs. Of course, Georgia Tech continues to remain number one in industrial and manufacturing engineering. As I have told my colleague, John Jarvis, Chair of Industrial & Systems Engineering, at least some of the manufacturing ranking in that poll can be attributed to mechanical engineering's manufacturing activities.

One of the year's biggest events happened the last weekend of June 2000 when we began moving a major segment of our activities into the new J. Erskine Love Jr. Manufacturing Building. We share the building with the School of Materials Science and Engineering, which should enhance our already strong interactions with MSE. The building was named in honor of J. Erskine Love, Jr. in recognition of his many contributions to Georgia Tech and because of the substantial endowment given by his family to the Woodruff School. The building has excellent laboratory, office, and classroom space, including a state-of-the-art electronic classroom for our distance learning programs. With our move into this building, we can arguably say that we have the finest mechanical engineering facilities of any academic program in the world. Just to remind you, we moved into the Manufacturing Research Center in 1991, the Manufacturing Related Disciplines Complex in 1996, and the Institute for Bioengineering & Biosciences in 1999.

Another major event was the Woodruff Distinguished Lecture given by Dr. William Wulf, President of the National Academy of Engineering. Dr. Wulf gave a very thoughtful lecture on the ethical and professional responsibilities of the engineering profession. The day following the lecture, we hosted a regional meeting of the National Academy of Engineering, which included hosting a symposium on the question of "Why Don't More Women Go Into Engineering?" Many facets of the issue were discussed and debated by a very lively panel and audience. If you have the right computer software (a free version of the latest RealPlayer will do), you can watch both Dr. Wulf's lecture and the symposium over the Internet by going to our website and clicking on the icons on our home page.

During the past year, several new faculty members joined our ranks, including three people in microelectromechanical systems (MEMS). This is an exciting new area in which relatively few mechanical engineering departments have programs. We are approaching MEMS from a standpoint of mechanical systems and transducers and from the design and manufacturing aspects of those systems.

We initiated a search to fill the Ramirez Chair in Fluid Power and Motion Control, which will put us into an important, but neglected, traditional area of mechanical engineering research and education. This chair was made possible by generous gifts to the Capital Campaign, and I am pleased to report that the Woodruff School surpassed its goal of $30 million dollars this spring.
There were two particularly interesting ventures on the part of our student clubs this year. GT Motorsports raised the funds to go to Birmingham, England to compete in an international SAE sanctioned event and placed 5th overall. Another exciting new venture was a GT Off-Road team that built their first car, entered their first race, and was the best first-year team. Georgia Tech students continue to be aggressive, hardworking, competitive, and successful.

This spring we held our annual banquet for Woodruff School students, particularly for those graduating. We had record attendance, and presented the 2000 Distinguished Alumnus Award for the Woodruff School to Parker "Pete" Petit of the Class of 1962. Pete Petit is a business leader and philanthropist and he has been very generous to Georgia Tech and to Mechanical Engineering in particular. We were pleased that he accepted this honor.

This report highlights the activities I have mentioned and more. I would like to hear from you with any questions or comments about this annual compilation of Woodruff School events. We appreciate your interest and support of the Woodruff School, and hope we continue to deserve it.

Ward O. Winer
Eugene G. Gwaltney, Jr. Chair in Manufacturing and
Chair of the Woodruff School

September 2000

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This report is published once a year, in the fall, by the George W. Woodruff School of Mechanical Engineering at Georgia Tech. For more information about undergraduate and graduate programs in the School, please contact us by any of the following methods:

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In 1888 the Georgia School of Technology opened its doors and admitted 129 mechanical engineering students in Tech's first and only degree-granting program. The first Head (starting in 1888) and Professor of Mechanical Engineering was John Saylor Coon. Dr. Coon saw to it that classes were so challenging that only 28 of the original students earned degrees. Uncle Si, as Professor Coon was known, set high standards, which became a precedent at Tech. During his thirty-five year tenure, Dr. Coon brought the fruits of the best industrial method to a region, which, though impoverished, recognized the need for technological innovation. By applying theoretical rigor, practical ingenuity, and a sense of the latest professional developments to technical education in Georgia, Dr. Coon helped Georgia Tech evolve as a uniquely southern institution that worked to forge the foundations of the New South.

Over the years, the mechanical engineering program expanded and changed. By 1896, the contract system of shops had been abandoned. Dr. Coon revised the curriculum, describing a Mechanical Engineering program that emphasized design, mathematics, and problem solving. Prominent here was a senior thesis, which was an experimental laboratory project emphasizing design and testing. This experimental project survives today as the capstone experimental engineering project course.

The first M.S.M.E. was authorized in 1922, and a doctoral program was added in 1946. Tech graduated its first two students, with bachelor’s degrees in mechanical engineering, in 1890. The first M.S. degrees were awarded in 1925, and the first Ph.D.’s were granted in 1950. In 1949, the Department of Mechanical Engineering officially became the School of Mechanical Engineering with its own director.
and administrative staff.

Today, the Woodruff School of Mechanical Engineering is the oldest and second largest of the nine divisions in the College of Engineering (see http://www.coe.gatech.edu) at Georgia Tech (see http://www.gatech.edu). In 1985 the School was named for its benefactor, distinguished Atlanta business and civic leader, the late George W. Woodruff (class of 1917). The programs in mechanical engineering, nuclear and radiological engineering, health physics, and bioengineering house more than 1300 undergraduate students and 525 graduate students. Research and teaching in the Woodruff School is directed by a distinguished group of 70 academic faculty, 17 full-time research engineers and scientists, three academic professionals, and 49 staff. Research dollars to the School totaled twenty million dollars in the past academic year.

The story of Mechanical Engineering at Georgia Tech highlights Georgia Tech's early role in the transformation of engineering education from a vocational to a professional curriculum. Under the guidance of John Saylor Coon, Georgia Tech became an engineering school that had a significant impact on its region and gained a national and international reputation for producing high quality and successful engineers. Graduates from Georgia Tech have always had a hand in helping build industry in the South: This is no more true today than it was 112 years ago when Georgia Tech began to educate engineers and revitalize the economy of the South.

Because of the tremendous impact that mechanical engineering at Georgia Tech has had on the economy of the State and the Southeast, in 2000 the American Society of Mechanical Engineers designated the Woodruff School a National Mechanical Engineering Heritage Site. We are the first educational institution to receive this honor. Since 1971, only 212 sites, landmarks, and collections around the world have been designated by the ASME.
SEMESTER HAPPENINGS

New Course Introduced
With the introduction of the semester system at Georgia Tech in fall 1999 and the improvements made to the mechanical engineering curriculum as a result, the Woodruff School introduced ME 1770: Engineering Graphics and Visualization. This required course is about sketching, line drawing, simple wire-frame and solid modeling; and the development and interpretation of drawings and specifications for product realization. Approximately 325 students in nine sections are exposed to these skills each semester.

In addition, the School purchased a rapid prototyping machine from Z-Corp. for students to use in the class. As far as we know, we are the only school where all mechanical engineering students will be exposed to a rapid prototype model.

New Research Area for School
The Woodruff School added microelectromechanical systems (MEMS) as a new research area with the hiring of three new faculty members (see above left to right): Peter Hesketh (Professor), Levent Degertekin (Assistant Professor), and Wenjing Ye (Assistant Professor). In addition, Andrei Fedorov, another new Assistant Professor, has MEMS as his secondary research area with a primary interest in heat transfer, combustion, and energy systems.

MEMS is the application of integrated circuit fabrication technology to the manufacture of micromechanical optical, electrochemical, and biosensor devices. It encompasses a wide range of engineering disciplines, and our research program covers a range of projects, for example, micromachined ultrasonic transducers and advanced computer-aided design tools.

Annual School Gathering
The Woodruff School's Annual Cookout was held just a few days after classes had started for the fall semester. Food was plentiful, Woodruff School On the Cutting Edge tee-shirts were handed out to all who attended, new
graduate students had the opportunity to meet other graduate students, faculty and staff members, there was volleyball and horseshoes, food was plentiful, and the weather was fine. This yearly event is organized by the Woodruff School Graduate Office.

Graduate Student Recruiting
The Woodruff School aggressively recruits top students to enroll in our graduate programs. Extensive use is made of travel grants that enable top students to visit campus and meet with faculty and current graduate students. This past year, we provided grants for 93 students to visit the Woodruff School on four different weekends in February, March, and April 2000. Of this cohort, 53 enrolled in fall semester and two have committed to enroll in spring semester 2001. Forty-two of the 83 NSF Fellows in mechanical engineering from 1990 to 2000 were recruited to the Woodruff School from other schools. These fellowship winners generate additional funds and enable the Woodruff School to have a larger and better graduate program. Our recruiting activities have contributed to an enhanced applicant pool. Our ability to attract top students enables us to continue to attract top faculty and allows us to improve our strong position as a leader in graduate education and research.

We're Moving Up - The Woodruff School is Now Ranked 6th!
U.S. News & World Report ranks the Woodruff School of Mechanical Engineering’s graduate program as number six in the nation. The College of Engineering is tied for fourth. According to School Chair Dr. Winer, when U.S. News & World Report began to rank graduate schools in 1987 neither the Woodruff School nor the College of Engineering were in the top ten. He said, "To move up in the rankings like Georgia Tech did in a little over ten years is both unusual and a real credit to the faculty and staff."

The magazine ranks the nation’s 219 graduate engineering programs according to a weighted average of a series of measures of quality. Reputation accounts for 40 percent of the total, student selectivity accounts for ten percent, faculty resources are 25 percent, and research activity is 25 percent.

SPECIAL EVENTS

ASME President Visits Woodruff School
Mr. John Parker (at right in photo), the incoming president of the ASME, selected the Woodruff School as the place to visit to get an overview of a mechanical engineering program. He was accompanied by Thomas Loughlin, Managing Director of Member Affairs.
We prepared a full agenda for their visit. Dr. Winer presented a slide show about the Woodruff School. Then they spent an hour in a freewheeling discussion with the ASME student chapter leaders, followed by a discussion of the School's undergraduate curriculum with Professors Ray Vito, Jerry Ginsberg, Tom Kurfess, and Richard Salant. After, they went across campus for a short meeting with President Wayne Clough and Provost Mike Thomas. Upon returning to MRDC, they met with Dr. Jeff Donnell, Coordinator of the Frank K. Webb Professional Communication Program.

After a luncheon and discussion about all phases of mechanical engineering and the ASME with Woodruff School student leaders, ASME faculty fellows in the Woodruff School, Dean of Engineering Jean Lou Chameau, and Associate Provost Bob McMath, Parker and Loughlin went on a tour of our undergraduate laboratories led by Sterling Skinner. They viewed various mechanical engineering classes, including: Introduction to Engineering Graphics and Visualization, System Dynamics and Control, Experimental Methodology Laboratory, ME Systems Laboratory - turbine, laser, and motor labs, Experimental Engineering, and Creative Decisions and Design.

In a letter to Dr. Winer after the visit, Mr. Loughlin said, "I really appreciate the time and commitment you and your staff provided during our trip. Tech has a culture of excellence that was evident in everything that we experienced. From the faculty to the students and facility, it is a benchmark operation."

WE ARE THE FIRST

Our nomination to become an ASME Mechanical Engineering Heritage Site was approved at the Nashville meeting, and we are awaiting the official designation ceremony on October 6, 2000. We are the first educational site to receive this recognition. There are 212 ASME heritage sites, landmarks, and collections in the world.
Annual Spring Banquet

The Woodruff School held its annual spring banquet on April 6, 2000 in the Ballroom of the Student Center. Almost 200 people attended the gala - an extremely good turnout - to honor graduating seniors, some of our award winning graduate students, and to present the Woodruff School Distinguished Alumnus and the Outstanding Educator Awards. The event is organized by the Woodruff School Student Advisory Committee (pictured above).

Before dinner, each table had to act out a mechanical engineering process: lever; flow through a pipe; refrigeration; pendulum; material stress test; or HVAC. Pictures of all the tables can be seen on the WSSAC web page at http://www.me.gatech.edu (see Student Organizations).

After dinner, School Chair Dr. Ward Winer presented the Woodruff School 2000 Distinguished Alumnus Award to Mr. Parker H. (Pete) Petit. The rest of the evening's program consisted of the presentation of the Woodruff School Outstanding Educator Award to Dr. Said Abdel-Khalik, Dr. Ray Vito talking about the undergraduate program, Dr. Bill Wepfer speaking about the graduate program, WSSAC members presenting the 1999 Academia Awards, and finally, some closing remarks from WSSAC President Anika Stone (BSME 2000) on her years at Georgia Tech.

The Woodruff School Distinguished Alumnus

Pete Petit (BME 1962) was named the 2000 Woodruff School Distinguished Alumnus at the Annual Spring Banquet. The award was inaugurated in 1989 to recognize an outstanding alumnus of the School. Mr. Petit's name, along with other winners of the Woodruff Distinguished Alumnus Award, will be on permanent display in the lobby of the MRDC.

One of the responsibilities of this award is to speak at the Spring Banquet. Pete gave an inspiring speech about how he accidentally became a mechanical engineer and how good Georgia Tech has been to him. He started out in aerospace engineering, but became an ME because he needed a job and the co-op program offered him one in ME. He spoke movingly about the need to give back to those who help you, in his case Georgia Tech.
Mr. Petit has been very good to Georgia Tech. He is a Trustee for the Georgia Tech Foundation, a member of the Woodruff School's Advisory Board, Chair of the Woodruff School's Capital Campaign Committee, and a member of the Institute's Capital Campaign Committee. In 1985, he funded a chair in the Woodruff School for a distinguished professor; the chair in Engineering in Medicine is held by Professor Robert Nerem. In 1996 he endowed the Petit Institute for Bioengineering and Bioscience at Georgia Tech; Woodruff School Bioengineering faculty are in the IBB building. Mr. Petit has served on the National Advisory Board for Georgia Tech and he was a recipient of the Georgia Tech Distinguished Engineering Alumni Award in 1994. In addition, he serves on the National Council for Medicine at the Emory University School of Medicine.

In November 1970, Mr. Petit founded Healthdyne, as a result of developing the first home physiological monitor for infants who are at risk for Sudden Infant Death Syndrome. Healthdyne grew into an international corporation with revenues of approximately $400 million. In 1995, Healthdyne was split into three publicly traded companies—Healthdyne Technologies, Healthdyne Information Enterprises, and Matria Healthcare. Mr. Petit remains Chairman of the Board of Healthdyne Information Enterprises and Matria Healthcare. For more details about Mr. Petit, view the event program on our home page.

The Woodruff School Outstanding Educator Award
Southern Nuclear Distinguished Professor Said Abdel-Khalik was named the 2000 Woodruff School Outstanding Educator at the Annual Spring Banquet. For the past twenty-four years, Dr. Abdel-Khalik has been a faculty member at the University of Wisconsin and the Woodruff School. He has maintained a well regarded research program, focusing on some of the critical mechanical and nuclear engineering issues faced by industry. His work combines fundamental and applied research in reactor engineering, heat transfer, and thermal-hydraulics. His early work on boiling heat transfer is recognized as fundamental.

He is a Fellow of the American Society of Mechanical Engineers and of the American Nuclear Society. In 1999, he won the American Society for Engineering Education Glenn Murphy Award for notable contributions to the teaching of nuclear engineering. In addition, he received the Georgia Tech Outstanding Doctoral Thesis Advisor Award (1998), the Sigma Xi (Georgia Tech Chapter) Outstanding Ph.D. Thesis Advisor Award (1995), and the Georgia Tech Outstanding Faculty Leadership Award for the Development of Graduate Research Assistants (1994).

Support for this year’s award was provided by Mr. Chris Hammond (BME 1934).
Because of space limitations, please refer to the Publications section for the invitations, programs, and transcripts of the lectures. Pictures may be found in the Photo Gallery and synopses of the Woodruff Colloquia are under Seminars.

The Gegenheimer Lecture on Innovation

He told about Harley-Davidson's rich history, which began in 1903, including a fight for the company's survival when its market share fell to thirteen percent in 1983 and its lead bank was threatening bankruptcy in 1985. As a result, management had to dramatically change how it approached the business, a process that revitalized the company. Today, Harley's market share is approaching fifty percent and it is identified in Fortune as one of the best places to work.

Teerlink, a CPA by education and training, joined Harley-Davidson as Chief Financial Officer in 1981. He was deeply involved in developing the financial strategies that saved the firm from bankruptcy and he guided the firm back to public ownership. He was appointed Chairman of the Board of Harley-Davidson, Inc. in May 1996 and served as President and Chief Executive Officer from March 1989 to June 1997.
The Lecture Series on Innovation was established in 1995 through an endowment from Mr. Harold W. Gegenheimer (Class of 1933) (seated on motorcycle in the photo) to support student programs that encourage creativity, innovation, and design. Through the lecture series and support of capstone design projects, students are exposed to processes that stimulate creativity and lead to inventions and patents.

Harold W. Gegenheimer has been associated with the printing industry all his life. As an inventor, he continues to express interest in the great advances made at his alma mater through innovative programs that link industry with graduate and undergraduate studies.

RESERVE THIS DATE

Woodie Flowers, Pappalardo Professor of Mechanical Engineering at MIT, will present the annual Gegenheimer Lecture on Innovation on Tuesday, October 10, 2000 at 3:30 p.m. in the MARC auditorium at Georgia Tech. His lecture is titled: Innovator, Innovatee, or Somewhere Between?

The Woodruff Distinguished Lecture

The Annual Distinguished Lecture was established in 1990 to honor an engineer who has made an outstanding contribution to society and to provide a forum for that person to address the Georgia Tech community. The lecture is made possible by an endowment established for the Woodruff School by the late George W. Woodruff (Class of 1917). Thus, the occasion is also an opportunity to remember and honor Mr. Woodruff's own contributions as a distinguished alumnus and as a benevolent and generous citizen of Atlanta and the State of Georgia.

Dr. William A. Wulf, President of the National Academy of Engineering, delivered the 2000 Woodruff Distinguished Lecture to a large audience on April 25, 2000. He spoke about The Societal Responsibility of Engineers (And Its Implications for Engineering Education).
Dr. Wulf said that engineering has a strong tradition of ethics, rooted in its responsibility to the public to produce effective, safe, and reliable products and infrastructure. However, the responsibility of engineers to society is now much broader because engineering and technology have had a profound impact on society. Moreover, the impact in the 21st century will be even greater. Engineers should not limit their sense of responsibility to the products and infrastructure they design, but must assume roles in society, such as public servants, not traditionally filled.

Dr. Wulf is on leave from the University of Virginia to serve as President of the National Academy of Engineering. At Virginia, Dr. Wulf is a University Professor and holds the AT&T Chair in Engineering and Applied Science. He is a member of the National Academy of Engineering and a Fellow of the American Academy of Arts and Sciences. He is the author of over 80 papers and technical reports, has written three books, holds one U. S. Patent, and has supervised more than 25 Ph.D.'s in Computer Science.

A transcript of Dr. Wulf's lecture will be published soon. We think you will enjoy reading what he had to say. Until that is available, you can listen to the webcast of his lecture from our web page (open the George Woodruff icon)

ANNOUNCEMENT

The Woodruff School is pleased to announce that Euan Baird, Chairman of the Board, President, and Chief Executive Officer of Schlumberger Limited will be the 2001 Woodruff Distinguished Lecturer. The lecture will be on Tuesday, April 10, 2001. Watch the mail for more details about this exciting event.

Woodruff School Colloquia

Each semester, the endowment to the School sponsors the Woodruff School Colloquia, a series of lectures presented by national and international experts in mechanical and nuclear engineering. The Woodruff School Colloquia given during the past academic year (from September 1999 to June 2000) were:

NAE Symposium on Women in Engineering

Why Don't More Women Choose Engineering as a Career was the topic of a National Academy of Engineering Regional Symposium held at Georgia Tech (sponsored by the Woodruff School and the Institute for Bioengineering and Bioscience) on April 26, 2000. The standing-room only crowd came to listen to Sheila Widnall (pictured lower left), former Secretary of the Air Force and Institute Professor at MIT, and Patricia Hausman (pictured top left), a behavioral scientist and nutritionist, debate this question.

Dr. Widnall believes the engineering profession needs the participation of more women and that barriers continue to be placed before women students and faculty. She presented her "top ten" reasons why there is a problem. However, according to Dr. Hausman, the answer to the question is simple - "because they don't want to" she said. She cited a National Science Foundation study in which women who left engineering, in the majority, stayed in the sciences, such as computer, life, or physical science.

After their brief addresses, Widnall and Hausman joined Professors Etta Falconer (pictured top right) of Spelman College, April Brown (not pictured) of the College of Engineering, and Mary Rezac (pictured lower right) of the School of Chemical Engineering. The discussion was brisk, however, no conclusions were reached. To listen to Widnall and Hausman's remarks and the panel discussion, go to the NAE Symposium on Women.

CONFERENCES AND FORUMS

AIM'99

Professor Kok-Meng Lee was the General Chair of the 1999 IEEE/ASME International Conference on Advanced Intelligent Mechatronics held in Atlanta in September 1999. Other GWW faculty involved in the organization of the conference were Tom Kurfess as the Invited Session Chair, Wayne Book on the International Program Committee, and Imme Ebert-Uphoff as chair of the roundtable discussion on Infrastructure for Microelectronics Education. Other faculty participating were Stephen Dickerson, Harvey Lipkin, Shreyes Melkote, Nader Sadegh, and Charles Ume.
The ways in which information, communication, high-performance computing, and intelligent control are brought into product and process designs will lead to Informatics in Mechatronics, which was the theme of the conference. The idea is to create systems that are more capable, precise, reliable, intelligent, and cheaper.

View Faculty/Staff for some specifics about the Automation and Mechatronics research group in the Woodruff School.

Acoustical Society National Meeting
The Acoustical Society of America (ASA) held its 139th National Meeting in Atlanta from May 29 to June 3, 2000. The ASA is the largest scientific organization in the United States devoted to acoustics. Members of the Woodruff School made up the Organizing Committee for this conference attended by more than one thousand people with seven hundred papers presented. Committee members were Yves Berthelot (General Chair), Jerry Ginsberg (Technical Chair) Ken Cunefare, Rona Ginsberg, Laurence Jacobs (ECE), Jacek Jarzynski, Michael Leach (GTRI), George McCall, and Pete Rogers.

In addition to the technical sessions, the conference had a plenary and award session; a special workshop to help students improve their skills to find jobs in acoustics; a session on publishing excellence; a hot topics session and press luncheon, which featured, among others, a Georgia Tech paper on Better Landmine Detection. In addition, there was a session on women in acoustics, tutorial workshops, and an accompanying persons program. More than twenty technical papers were presented by our faculty.

For more information on Woodruff School faculty members in Acoustics, see Faculty/Staff.

ASME Nashville Meeting
For the past four years the Woodruff School has taken a booth at the Annual ASME Congress and Exposition and we did so again at the Nashville meeting in November. We were the only school to have a booth at this Exposition.
We took printed materials to stock the booth and two laptop computers, one to demonstrate our new online Master's degree courses in mechanical engineering and the other to view a narrated show about the Woodruff School. We also hosted a Hospitality Room for Woodruff School alumni.

For those of you who would like to view the narrated show, go to About the Woodruff School. Note that this file is very large, so it will take a while to download, however, we think you will find it worth your while.

**Integrated Predictive Diagnostics Forum**

The Multi-University Center for Integrated Diagnostics (CID) hosted a forum at Georgia Tech to promote an exchange of information concerning the development of technologies needed to improve the maintainability, sustainability, and reliability of mechanical systems and structures. The conference was organized by CID's Program Manager Richard Cowan (see photo), and Ronald Wagner, Director of the GTRI-EOEML Logistics & Maintenance Applied Research Center.

CID was established in 1995 through a five-year DoD Office of Naval Research M-URI grant to perform research critical to the development of integrated diagnostic systems, capable of accurately predicting the remaining useful life of a machine or structure without reducing time in service. To address this mission, a multidisciplinary team of investigators led by School Chair Ward Winer has been assembled from Georgia Tech, Northwestern University, and the University of Minnesota to undertake projects in nondestructive evaluation; condition monitoring; material fatigue modeling; sensor development; and signal processing. For more details on the Center view http://www.me.gatech.edu/diagnostics.

**DISTANCE LEARNING PROGRAMS**

**Online Master's Degree**

In fall 1999, Georgia Tech became the first university in the nation to offer a master’s degree in mechanical engineering entirely on the Internet. Woodruff School faculty teach all courses in this pioneering program using state-of-the art streaming audio and video technologies, synchronized slides, simulations, and other multimedia. Internet instruction includes links to other web-based materials. Student-to-student and student-to-faculty interaction occurs using bulletin boards and the threaded discussion capabilities of WebCT.
Most faculty teaching Internet courses have experience teaching these same courses in video format. The first two courses were Manufacturing Processes and Systems (ME 6222) taught by Professor Jonathan Colton and Linear Control Systems (ME 6401) taught by Professor Nader Sadegh. The Spring 2000 courses were Applications of Thermodynamics (ME 6305) taught by Professor Sam Shelton and Vibration of Mechanical Systems (ME 6442) taught by Professor Jerry Ginsberg. Both incorporated a new technology, an electronic whiteboard.

For more information, send an e-mail request to web.program@me.gatech.edu or visit Online/Video Programs.

**Video-Based Master's Degree**
The Woodruff School continues to be a leader in the delivery of its MSME (mechanical engineering) and MSHP (health physics) programs via video and CD-ROM. The video program in the Woodruff School has experienced strong growth since its inception in Fall 1992. In Fall 2000, there were 75 ME students and 25 HP students enrolled in video courses. Twenty-five new students have been accepted to the video-degree program for fall semester. This is an increase of 60 percent over last year.

For detailed information on graduate programs for working professionals in mechanical engineering and health physics, request the brochure titled, *The George W. Woodruff School of Mechanical Engineering's Video-Based Master's Degree Programs*, view it under Publications, or send an e-mail to video.programs@me.gatech.edu.

**STUDY-ABROAD PROGRAMS**

**Georgia Tech in France**
The mechanical engineering program offered at Georgia Tech Lorraine primarily focuses on a master of science program in mechanical engineering. Students complete the degree by combining courses taken at GTL, on-campus in Atlanta, or through the video and online course offerings. The dual-degree program exposes U.S. and French students to an integrated curriculum taught sequentially in France and in the United States over three or four semesters.

The courses are taught in English by professors from Georgia Tech who go to GTL on a rotating basis. Al Ferri and Perry Desai went to France in fall 1999 and Nader Sadegh went in the spring 2000 semester.

The Fall 2000 group consists of ten Woodruff School students and twenty-six students from ENSAM in France. The average grade point average of the incoming U.S. students is 3.62 and they matriculated from Carnegie Mellon, University of Cincinnati, University of Michigan, University of Wisconsin, University of
Idaho, University of California, Berkeley, Michigan Tech, and Virginia Tech.

There is also a GTL summer program for undergraduates. It combines mechanical engineering courses taught on site by Woodruff School faculty with humanities and social sciences courses taught by faculty from other units of the Georgia University System. Approximately sixty Georgia Tech students attended classes in Metz this summer with Professor Ray Vito accompanying them.

For more information about the GTL program, see the new edition of the brochure *Bonjour, Georgia Tech: The George W. Woodruff School of Mechanical Engineering's Graduate Program for Study in France*, go to GT Lorraine Program, or send an e-mail to gtl@me.gatech.edu.

**OTHER PROGRAMS**

**The Cooperative Program**

Since 1912, Georgia Tech has offered a five-year cooperative program to those students who wish to combine career-related experience with classroom studies. The program is the fourth oldest of its kind in the world and the largest optional co-op program in the country. Students who enroll in this program alternate between industrial assignments and classroom studies on a semester basis, completing the same course work on the campus that is completed by regular four-year students in five years. Graduates of the program have the designation "Cooperative Plan" on their degree. In 1999, there were 590 mechanical engineering students enrolled in the co-op program, the largest group in the program. In addition, 13 NRE students participated in the program.

The graduate Cooperative Program was established in December 1983 and is currently the largest such program in the U. S. for science and engineering. Forty-two ME graduate students and two NRE/HP students were enrolled in the program in 1999.

**The United Technologies Teaching Intern Program**

This program is funded by the United Technologies Corporation and supports up to twelve senior mechanical engineering students for two semesters. Students are invited into the program based on their academic achievement and recommendations by the faculty. The program is intended to give students the opportunity to work with a faculty member in teaching an undergraduate course in mechanical engineering; encourage our best students to consider graduate school; help develop communication and interpersonal skills; and provide a way for practicing engineers and managers at United Technologies to interact with Woodruff School students.

In fall semester 1999, the teaching interns were: Kyle Berkowitz, Shannelle Clarke, Teresa DeRojas, Jiro Dokeh, Alec Dutcher, Tarek El Khatib, Ben Faber, Mark Hargett, Jennifer Hea, Ryan Johnson, Andrew Perkins, and Abbie
Leon Wilkes, Jonathan Barletta, Karen Bates, Tarek El Khatib, Ryan Johnson, Margaret Lowder, Kristin Michael, and Tosin Tomori were the interns in spring semester 2000.

Women and Minorities
The Woodruff School continues to be a leading producer of graduate degrees to women. In 1999-2000, eight women earned Ph.D. degrees in ME, two in NE, while 24 earned MS degrees in ME and one in HP. Since the 1984 academic year, 49 women have earned Ph.D. degrees from the Woodruff School. In 1999-2000, the Woodruff School awarded six Ph.D. degrees in ME and one Ph.D. degree in NRE to minorities and 16 MS degrees to minorities (15 in ME and 1 in HP). To learn more about our women and minority Ph.D. graduates, request the brochures Introducing the Minority Ph.D. Graduates from the George W. Woodruff School of Mechanical Engineering at Georgia Tech and Presenting the Women Ph.D. Graduates from the George W. Woodruff School of Mechanical Engineering at Georgia Tech or view them online under Publications.

STUDENT ACTIVITIES

Pi Tau Sigma
The Georgia Tech Nu Chapter of Pi Tau Sigma, the mechanical engineering national honorary society, hosted the 79th Annual National Convention in Atlanta in October 1999. The Woodruff School was a sponsor of the very successful event.

In addition to the plenary and breakout sessions, there was a Career Fair on Saturday, followed by a banquet at which Mary Ellen Heyde, Ford Motor Company executive, and Professor Tom Kurfess, a member of Pi Tau Sigma, spoke. Fifteen new members of the Georgia Tech Chapter Nu were initiated and one new chapter was installed.
Professor Prasana Kadaba is the faculty advisor to the group and Professor Farrokh Mistree is the national secretary of the organization (the Woodruff School houses the national office). This mostly student run event was coordinated by Brent Barkley, Chapter President (center in photo above) with the help of Frances Carter, Vice President; Any Padget, Recording Secretary; Reinhard Powell, Corresponding Secretary; Taryn Thompson, Treasurer; Brad Czerwonok, Past President (BME 1999); and GWW graduate students Amanda Weber and Douglas Spearot. To view additional pictures of the conference view http://www.me.gatech.edu/pts/convention.

ASME Student Chapter
The student chapter of the American Society of Mechanical Engineers held its very popular annual student picnic the week before spring semester classes ended. The food cooked by Justin Cotton (new chair) and James Dunn (outgoing chair) drew a large crowd. Tees-shirts were sold for a small fee, and the GT Motorsports formula car and the new GT Off-Road (Mini Baja) cars were exhibited by team members.

During the academic year the group hosted speakers from Schlumberger, Equistar Chemical, McKenney Mechanical Engineering, Meritor Automotive, and Kimberly Clark. At one weekly meeting, Dr. Winer presented a show on the History of Mechanical Engineering at Georgia Tech.

For more information on the student chapter of ASME, visit the display case on the 2nd floor of MRDC or go to their home page at http://www.me.gatech.edu/asme.

Open Houses
An Open House was held in early October for student leaders who were attending the ASME Student Southeast Regional Conference in Atlanta. Professor Ray Vito, Associate Chair for Undergraduate Studies, gave a short presentation about the Woodruff School, and Sterling Skinner took the group on a tour of the undergraduate laboratories in the MRDC building. Afterward, they visited the MARC building and saw research demonstrations by Professors Wayne Book on robotics, Daniel Baldwin on the high-speed flip clip and surface mount assembly laboratory, and Ken Cunefare and the anechoic chamber.

In addition, we hosted two open houses in September 1999, one for alumni attending Homecoming and another for the families of Woodruff School students attending Family Weekend. There were tours of the undergraduate
laboratories and an information session where parents could ask questions about the new semester curriculum.

GT Motorsports
The GT Motorsports team competed for the first time in Birmingham, England. The team placed 5th overall. Of the individual events within the competition, the team placed 1st in acceleration, 2nd in design, 2nd in cost, and 4th in autocross. There were cars from the UK, Germany, Mexico, Canada, Slovenia, and the U.S. in attendance. The top finisher was from Cal Poly Pomona. Eighteen Georgia Tech students made the trip to Birmingham for the competition. They were accompanied by Ken Cunefare, Faculty Advisor to GT Motorsports, and Sterling Skinner. In their free time, team members went to London and/or Paris.

At the U.S. competition back in May, held at the Pontiac (Michigan) Silverdome, the team placed 24th overall (out of over 90 cars), with their best event being a 5th place finish in acceleration. The Pontiac competition was marked by the rather unusual occurrence of everyone in attendance (close to 1000 people) having to take shelter twice inside the Silverdome due to severe weather. For more information on the team, call them at (404) 894-3322 or view [http://www.me.gatech.edu/gtmotorsports/](http://www.me.gatech.edu/gtmotorsports/).

GT Off-Road (Mini Baja Team)
GT Off-Road, the SAE Mini Baja team, participated in their first competition in Milwaukee, Wisconsin during the first week in June 2000. The competition consisted of 106 teams from around the nation and world. The Georgia Tech team was, by far, the best first-year team at the competition and placed 12th in appearance, 19th in braking, and 29th overall in the static events.
The event was highlighted by the final four-hour endurance race. During the preliminary one-hour heat race the team started 69th and finished 10th. While running in 8th place in the final endurance race, the car was rear-ended knocking off a rear tire during a red flag halt of the race. Luckily, due to a quick pit crew feverishly working in the mud, the car was repaired and finished the race only down two laps. Despite the unlucky setback, Georgia Tech placed 43rd overall and considers their first year a huge success.

GT Off-Road was organized in the summer of 1999 and is open to all students at Georgia Tech. Visit GT Off-Road's web page at http://cyberbuzz.gatech.edu/minibaja/ for more information.
The Woodruff School maintains a standard of excellence in all the core, traditional areas of mechanical engineering, and has expanded into other interdisciplinary areas and applications such as acoustics, bioengineering, materials, and microelectromechanical (MEMS), and nanotechnology. The School also encompasses complete programs in Nuclear and Radiological Engineering and Health Physics.

**DEMOGRAPHICS**

The Woodruff School has 70 tenure-track faculty. Of these, six have joint appointments and eleven have endowed chairs or distinguished professorships. We also have sixteen research faculty, three academic professionals, and a support staff of forty-nine. Although the number can change frequently, we average seventeen postdoctoral fellows and fourteen visiting scholars.

**THE FACULTY BY RESEARCH AREAS**

**Acoustics and Dynamics**

**Yves H. Berthelot, Professor**
Ph.D., University of Texas at Austin, 1985
Acoustics, laser instrumentation in acoustics, and ultrasonics
Fellow of ASA

**Kenneth A. Cunefare, Associate Professor**
Ph.D., Pennsylvania State University, 1990
Active/passive control, fluid-structure interaction, and optimal acoustic design

**Aldo A. Ferri, Associate Professor**
Ph.D., Princeton University, 1985
Acoustics, structural dynamics, nonlinear dynamics, and control

**Jerry H. Ginsberg, George W. Woodruff Chair in Mechanical Systems and Professor of Mechanical Engineering**
E.Sc.D., Columbia University, 1970
Vibrations, acoustics, dynamics, and fluid-structure interaction
Fellow of ASA and ASME

**Jacek Jarzynski, Professor**
Ph.D., Imperial College of Science and Technology, London, 1961
Acoustics, acousto-optics, transducers, and ultrasonics
Fellow of ASA

Peter H. Rogers, Rae and Frank H. Neely Distinguished Professor in Mechanical Engineering
Ph.D., Brown University, 1970
Acoustics and bioacoustics Fellow of ASA

Automation and Mechatronics

Wayne J. Book, Professor
Ph.D., Massachusetts Institute of Technology, 1974
Robotics, automation, modeling, and control of flexible, fluid power, and manufacturing systems
Fellow of ASME and IEEE

Ye-Hwa Chen, Associate Professor
Ph.D., University of California, Berkeley, 1985
Controls, manufacturing systems, neural networks, and fuzzy engineering

Imme Ebert-Uphoff, Assistant Professor
Ph.D., The Johns Hopkins University, 1997
Robotics, parallel platform manipulators, flight simulation, and static balancing

Kok-Meng Lee, Associate Professor
Ph.D., Massachusetts Institute of Technology, 1985
System dynamics, control, automation, and optomechatronics

Harvey Lipkin, Associate Professor
Ph.D., University of Florida, 1985
Design and analysis of mechanical systems, robotics, and spatial mechanisms

John G. Papastavridis, Associate Professor
Ph.D., Purdue University, 1976
Analytical, structural and nonlinear mechanics, vibrations, and stability

Nader Sadegh, Associate Professor
Ph.D., University of California, Berkeley, 1987
Controls, vibrations, and design

William E. Singhose, Assistant Professor
Ph.D., Massachusetts Institute of Technology, 1997
Vibration, flexible dynamics, and command generation

Bioengineering

Robert S. Cargill, Assistant Professor
Ph.D., University of Pennsylvania, 1994
Cell biomechanics, trauma and development, and tissue engineering

Andres J. Garcia, Assistant Professor
Ph.D., University of Pennsylvania, 1996
Cellular and tissue engineering, cell adhesion, and biomaterials

Robert E. Guldberg, Assistant Professor
Ph.D., The University of Michigan, 1995
Biomechanics, image-based FEM, and tissue engineering

David N. Ku, Lawrence P. Huang Endowed Chair in Engineering and Entrepreneurship
M.D., Emory University, 1984, Ph.D., Georgia Institute of Technology, 1983
Thrombosis, biomaterials, and tissue engineering
Fellow of AIMBE

Marc E. Levenston, Assistant Professor
Ph.D., Stanford University, 1995
Orthopedic biomechanics, soft tissue mechanics, and tissue engineering

Robert M. Nerem, Institute Professor and Parker H. Petit Distinguished Chair for Engineering in Medicine
Ph.D., The Ohio State University, 1964
Biomedical engineering, cellular and tissue engineering
Fellow of AAAS, AIMBE, APS, ASME, and IME

Raymond P. Vito, Professor and Associate Chair for Undergraduate Studies
Ph.D., Cornell University, 1971 Biomechanics, tissue mechanics, and design
Fellow of ASME

Timothy M. Wick, Associate Professor of Chemical Engineering (Joint Appointment)
Ph.D., Rice, University, 1988
Tissue and cellular engineering, bioreactor design, cell adhesion, and blood rheology

Ajit P. Yoganathan, Regents’ Professor of Biomedical Engineering (Joint Appointment)
Ph.D., Rice University, 1978
Cardiovascular fluid dynamics, rheology, Doppler ultrasound, and MRI
Fellow of AIMBE

Cheng Zhu, Associate Professor
Ph.D., Columbia University, 1988
Cell and molecular mechanics and applications to immunology and tumor biology

Computer-Aided Engineering and Design

Bert A. Bras, Associate Professor
Ph.D., University of Houston, 1992
Environmentally conscious design, design for recycling, and robust design

Robert E. Fulton, Professor
Ph.D., University of Illinois at Urbana-Champaign, 1960
Finite-element methods, integrated CAD/CAM, information management, and electronic commerce
Fellow of ASME

Farrokh Mistree, Professor
Ph.D., University of California, Berkeley, 1974
Design of open systems, product families, distributed design and manufacture
Fellow of ASME

David W. Rosen, Associate Professor
Ph.D., University of Massachusetts, 1992
Virtual and rapid prototyping and intelligent CAD/CAM/CAE

Suresh Sitaraman, Associate Professor
Ph.D., The Ohio State University, 1989
CAD/CAE, electronic packaging, thermomechanics and reliability, and FEM

Fluid Mechanics

Cyrus K. Aidun, Adjunct Professor, Institute of Paper Science and Technology (Joint Appointment)
Ph.D., Clarkson University, 1985
Hydrodynamic stability, liquid coating, and suspended particle hydrodynamics

Prateen V. Desai, Professor
Ph.D., Tulane University, 1967
Fluid mechanics, solidification, and convection in materials processing

Ari Glezer, Professor
Ph.D., California Institute of Technology, 1981
Fluid mechanics, turbulent shear flows, flow control, and diagnostics

Damir Juric, Assistant Professor
Ph.D., The University of Michigan, 1996
Computational methods, multiphase flows, and microscale materials processing

G. Paul Neitzel, Professor
Ph.D., The John Hopkins University, 1979
Hydrodynamic stability, numerical methods, and free-surface and rotating flows
Fellow of APS

Marc K. Smith, Associate Professor
Ph.D., Northwestern University, 1982
Hydrodynamic stability, liquid films, and droplet atomization

Minami Yoda, Assistant Professor
Ph.D., Stanford University, 1993
Shear flows, suspension flows, flow-structure interactions, and optimal diagnostics

Fusion

Weston M. Stacey, Jr., Fuller E. Callaway and Regents' Professor
Ph.D., Massachusetts Institute of Technology, 1966
Fusion engineering, plasma physics, and reactor physics Fellow of ANS and APS

Heat Transfer, Combustion, and Energy Systems

Said I. Abdel-Khalik, Southern Nuclear Distinguished Professor and Professor of Nuclear Engineering
Ph.D., University of Wisconsin, 1973
Microscale, heat transfer, reactor safety, and thermal hydraulics
Fellow of ANS and IEEE

William Z. Black, Georgia Power Distinguished Professor and Regents' Professor
Ph.D., Purdue University, 1968
Heat transfer, thermodynamics, and fluids
Fellow of IEE, ASME, and IEEE

Andrei G. Fedorov, Assistant Professor
Ph.D. Purdue, 1997
Multiscale thermofluids, adsorption, and catalysis

J. Narl Davidson, Associate Dean of Engineering and Associate Professor
Ph.D., University of Michigan, 1969
Academic administration, engineering education, plasma physics, and power plant operation

S. Mostafa Ghiaasiaan, Associate Professor
Ph.D., University of California, Los Angeles, 1983
Multiphase flow, aerosol and particle transport, and nuclear reactor engineering

James G. Hartley, Professor
Ph.D., Georgia Institute of Technology, 1977
Heat transfer, thermodynamics, and fluid mechanics

Sheldon M. Jeter, Associate Professor
Ph.D., Georgia Institute of Technology, 1979
Heat transfer and thermal hydraulics

Prasanna V. Kadaba, Associate Professor
Ph.D., Illinois Institute of Technology, 1964
Heat transfer, I.C. engine design, energy and environmental systems, and advanced cycles
Fellow of ASHRAE and ASME

Alan V. Larson, Professor and Associate Chair for Administration
Ph.D., University of Illinois at Urbana-Champaign, 1961
Thermodynamics

Sam V. Shelton, Associate Professor
Ph.D., Georgia Institute of Technology, 1969
Energy systems, HVAC systems, absorption, and refrigeration
Fellow of ASHRAE

Amyn S. Teja, Regents’ Professor of Chemical Engineering (Joint Appointment)
Ph.D., Imperial College, London, 1972
Thermodynamics, fluid properties, and supercritical fluid separations

William J. Wepfer, Professor and Associate Chair for Graduate Studies
Ph.D., University of Wisconsin, 1979
Heat transfer and thermodynamics Fellow of ASHRAE and ASME

Ben T. Zinn, David S. Lewis Chair of Aerospace Engineering and Regents’ Professor (Joint Appointment)
Ph.D., Princeton University, 1965
Combustion instability, active control, microscale combustion, propulsion, and acoustics
Fellow of AIAA and ASME

Manufacturing

Daniel F. Baldwin, Assistant Professor
Ph.D., Massachusetts Institute of Technology, 1994
Manufacturing systems design, electronics manufacturing and packaging, and polymer processing

Jonathan S. Colton, Professor
Ph.D., Massachusetts Institute of Technology, 1986
Manufacturing, polymer and composites processing, design, and rapid prototyping
Fellow of ASME

Steven Danyluk, Morris M. Bryan, Jr. Chair in Mechanical Engineering for Advanced Manufacturing Systems
and Professor of Mechanical Engineering
Ph.D., Cornell University, 1974
Materials processing, lubricant-surface interaction, polishing, and sensors

Thomas R. Kurfess, Professor
Ph.D., Massachusetts Institute of Technology, 1989
System dynamics, control, metrology, and CAD/CAM/CAE

Steven Y. Liang, Professor
Ph.D., University of California, Berkeley, 1987
Automated manufacturing, control systems, and digital signal processing

Shreyes N. Melkote, Assistant Professor
Ph.D., Michigan Technological University, 1993
Machining processes, surfaces, intelligent fixturing, CAM/CAPP

Charles Ume, Professor
Ph.D., University of South Carolina, 1985
Electronic packaging, mechatronics, and laser moiré/ultrasonics

Mechanics of Materials
Iwona M. Jasiuk, Associate Professor
Ph.D., Northwestern University, 1986
Micromechanics, fracture, damage mechanics, composite materials, and biomaterials

W. Steven Johnson, Professor of Materials Science and Engineering (Joint Appointment)
Ph.D., Duke University, 1979 Deformations, composite materials, and joints
Fellow of ASTM

W. Jack Lackey, Professor
Ph.D., North Carolina State University, 1970
Ceramic and metallic coatings, composites, and rapid prototyping
Member of ACS

Christopher S. Lynch, Associate Professor
Ph.D., University of California, Santa Barbara, 1992
Experimental mechanics, and smart materials

David L. McDowell, Carver N. Paden Distinguished Chair in Metals Processing and Regents' Professor
Ph.D., University of Illinois at Urbana-Champaign, 1983
Material deformation and damage, constitutive laws, and metals processing
Fellow of ASME

Richard W. Neu, Assistant Professor
Ph.D., University of Illinois at Urbana-Champaign, 1991
Fatigue, viscoplasticity, and composite materials

Jianmin Qu, Professor
Ph.D., Northwestern University, 1987
Fracture, composite materials, wave propagation, and microelectronic packaging

Min Zhou, Associate Professor
Ph.D., Brown University, 1993
Experimental/computational mechanics, dynamic behavior, material failure, and shear localization

Microelectromechanical Systems

F. Levent Degertekin, Assistant Professor
Ph.D., Stanford University, 1997
Micromachined sensors and actuators, ultrasonics, atomic force microscopy, and NDE

Peter J. Hesketh, Professor
Ph.D., University of Pennsylvania, 1987
Microfabrication, micromachining, sensors, actuators, biosensors, and microfluids

Wenjing Ye, Assistant Professor
Ph.D., Cornell University, 1998
Modeling and CAD design, fast algorithms, and fabrication

Nuclear and Radiological Engineering and Health Physics

Nolan E. Hertel, Professor
Ph.D., University of Illinois at Urbana-Champaign, 1979
Radiation shielding, neutron dosimetry, radiological assessment and waste management, health risk assessment, accelerator sources and applications

Farzad Rahnema, Professor
Ph.D., University of California, Los Angeles, 1981
Reactor physics, perturbation and variational methods, reactor simulator and monitoring methods, criticality safety, and benchmark methods
John D. Valentine, Associate Professor
Ph.D., The University of Michigan, 1993
Radiation detection and measurements, medical imaging, environmental monitoring, nuclear waste monitoring, personnel monitoring, scintillator and semiconductor detector characterization and development

C.-K. Chris Wang, Associate Professor
Ph.D., The Ohio State University, 1989
Radiation detection, radiation dosimetry, medical and industrial applications of ionizing radiations, and spent 9 nuclear fuel measurements

Tribology

Itzhak Green, Professor
Sc.D., Technion-Israel Institute of Technology, Haifa, Israel, 1984
Finite element methods, rotordynamics, fluid sealing, design, and integrated design

Richard F. Salant, Professor
Sc.D., Massachusetts Institute of Technology, 1967
Fluid mechanics and fluid sealing Fellow of ASME and STLE

Jeffrey L. Streator, Associate Professor
Ph.D., University of California, Berkeley, 1990
Computer-disk tribology, rheology, friction-induced vibration, and capillarity

Ward O. Winer, Eugene C. Gwaltney Chair in Manufacturing, Regents' Professor, and Chair of the Woodruff School
Ph.D., Cambridge University, 1964 and The University of Michigan, 1961
High-pressure rheology, lubrication, tribology, thermomechanics, and mechanical systems diagnostics Fellow of AAAS, ASME, and STLE

Academic Professionals

Jeffrey A. Donnell
Ph.D., Emory, 1990
Coordinator of the Frank K. Webb Program in Professional Communications

Robert L. Mabrey
M.A., Eastern Michigan University, 1968
Hybrid computer modeling, visualization processes, rapid prototyping, and design

James Michael Wileman, Associate Director of Georgia Tech Lorraine
Ph.D., Georgia Institute of Technology, 1994
Mechanical seal dynamics, tribology, rotor dynamics, and design

Adjunct Professors and Part-Time Appointments

L. Dennis Ballou, Instructor
J.D., Law, University of Georgia, 1977
Elastic instability of cylindrical shells, and availability analysis

Stephen L. Dickerson, Professor Emeritus (part-time)
Ph.D., Massachusetts Institute of Technology, 1965
Automatic control, machine vision, and manufacturing automation

William C. Hutton, Adjunct Professor, Emory University
Ph.D., University of Birmingham, England, 1984
Bioengineering and orthopaedic mechanics

Rodney D. Ice, Adjunct Professor, Neely Nuclear Reactor
Ph.D., Purdue University, 1967
Radiopharmaceuticals, radioprotectants, boron neutron capture theory, radionuclide methodology, and hospital health physics

**J. Ernest Wilkins, Jr., Adjunct Professor, Clark-Atlanta University**
Ph.D., University of Chicago

**Emeritus Faculty**

Samuel C. Barnett, Professor Emeritus, Retired June 1980
Melvin W. Carter, Neely Professor Emeritus of Nuclear Engineering and Health Physics, Ph.D., University of Florida, Retired July 1988
Joseph D. Clement, Professor Emeritus, Ph.D., University of Wisconsin, Retired December 1991
Gene T. Colwell, Professor Emeritus, Ph.D., University of Tennessee, Retired June 1995
Monte Davis, Professor Emeritus of Nuclear Engineering and Health Physics, Ph.D. Oregon State University, Retired October 1987
Stephen L. Dickerson, Professor Emeritus, Ph.D., Massachusetts Institute of Technology, Retired June 1996
Pandeli Durbetaki, Professor Emeritus, Ph.D., Michigan State University, Retired October 1995
Geoffrey C. Eichholz, Regents' Professor Emeritus, Ph.D., University of Leeds, Retired July 1988
Mario J. Goglia, Regents' Professor Emeritus, Ph.D., Purdue University, Retired December 1981
Bernd Kahn, Professor Emeritus and Director, Environmental Resources Center, Ph.D., Massachusetts Institute of Technology, Retired April 1996
Ratib Karam, Professor Emeritus, Ph.D., University of Florida, Retired June 1997
S. Peter Kezios, Regents' Professor Emeritus, Ph.D., Illinois Institute of Technology, Retired July 1990
Alfred Schneider, Professor Emeritus, Ph.D., Polytechnical University of New York, Retired June 1990

**Research Faculty**

Janet Allen, Senior Research Scientist
Ph.D., University of California, Berkeley, 1973
Design evolution over time, modeling uncertainty, decision-based design, and design pedagogy

Scott S. Bair, Principal Research Engineer
Ph.D., Georgia Institute of Technology, 1990
Tribology, rheology, properties of liquids at high pressure, and machine design

Van B. Biesel, Research Engineer II
M.S., Georgia Institute of Technology, 1993
Acoustics, vibrations, noise control, numerical modeling, transducers, and piezoelectric materials

John R. Bogle, Research Engineer II
M.S., Georgia Institute of Technology, 1987
Structural acoustics, finite/boundary element modeling interaction of underwater sound and structures, and vibrations

Richard S. Cowan, Research Engineer II; Program Manager Multi-University Center for Integrated Diagnostics
M.S., Georgia Institute of Technology, 1992
Mechanical system maintenance and modeling, technology management, and public policy

Tord Dennis, Research Engineer I
B. S., West Virginia University, 1990
The integration of solid modeling and finite element tools over a distributed collaborative

Michael L. Dowling, Research Engineer II
M.S., University of Illinois, 1990
Heat transfer research, steam/vapor explosions, particle image velocimetry of droplet sprays, and innovative heat pump designs

Steven R. Hahn, Research Engineer II
M.S., Georgia Institute of Technology, 1988
Structural acoustics, vibrations and control, and finite element and boundary element techniques
Gregg D. Larson, Research Engineer II
Ph.D., Georgia Institute of Technology, 1996
Transduction, acoustics, vibrations, and piezoelectric ceramics

Joey G. Lloyd, Research Engineer I
B.S., Georgia Institute of Technology, 1988
Mechanical design, robotics, finite element modeling, and programming

James S. Martin, Research Engineer II
M.S., Georgia Institute of Technology, 1994
Shallow water sound propagation, internal gravity waves, experimental structural acoustics, bioacoustics/biomimetics, nondestructive testing, and nonlinear bubble dynamics

Dennis L. Sadowski, Research Engineer II
M.S., University of Illinois, 1986
Thermal sciences, design and construction of experimental equipment

Dave Trivett, Principal Research Scientist
Acoustics

Guang-Fa Yao, Research Engineer II
Ph.D., Georgia Institute of Technology, 1996
Computational fluid dynamics and heat transfer, multiphase and turbulent flows, Arbitrary-Eulerian-Lagrangian (ALE) formulation, and numerical modeling of flows with free surface or moving boundaries

Xuezhen Zhang, Research Scientist II
M.S. Nanjing University, 1963
Computational acoustics and shallow water acoustics

Ji-Xun Zhou, Principal Research Scientist
Ph.D., Graduate School of Chinese Academy of Sciences, 1967
Shallow water acoustics, sound propagation and reverberation, acoustic interactions with internal waves, seafloor acoustics, acoustic remote sensing

DISTINCTIONS

Said Abdel-Khalik was named a Fellow of the American Society of Mechanical Engineers and he is the Chair of the Institute's Executive Board.

Yves Berthelot was the General Chair of the 139th Meeting of the Acoustical Society of America, held in Atlanta.

Wayne Book was elected to the Georgia Tech Academic Senate.

Wayne Book, Steve Dickerson, and Nader Sadegh received U.S. Patent No. 5,946,449 for an invention titled, "Precision Apparatus with Nonrigid, Imprecise Structure, and Method for Operating Same."

Dan Baldwin was elected to the Board of Advisors for the Association for Electronics Manufacturing of the Society of Manufacturing Engineering (SME).

Levent Degertekin received U.S. Patent 6,070,468 for his invention "Micromachined Ultrasonic Leaky Wave Air Transducers."

Prateen Desai received the 2000 Minorities in Engineering Award from the American Society for Engineering Education. The award is given in recognition of distinguished accomplishments.

Imme Ebert-Uphoff won the CETL/BP Amoco Junior Faculty Teaching Excellence Award.

Jerry Ginsberg was the Technical Chair of the 139th Meeting of the Acoustical Society of America, held in Atlanta.

Ari Glezer received U.S. Patent No. 6,056,204 for his invention "Synthetic Jet Actuators for Mixing Applications," and with graduate student Mark Allen Trautman, was awarded U.S. Patent No. 5,957,413 for an invention titled, "Modifications of Fluid Flow About Bodies and Surfaces with Synthetic Jet Actuators."

Tom Kurfess received the Georgia Tech Class of 1940 W. Roane Beard Outstanding Teacher Award and he was promoted to full professor.
Kok-Meng Lee received the Best Paper Award in Automation at the 2000 IEEE International Conference on Robotics and Automation for his paper "Design Criteria for Developing an Automated Live Bird Transfer System."

Steven Liang was promoted to full professor.

Chris Lynch received tenure and was promoted to Associate Professor. He also won the Outstanding New Mechanics Educator Award from the Mechanics Division of the American Society of Engineering Education.

Robert Mabrey is leaving the Woodruff School to return to Tennessee. He came to Georgia Tech in fall 1999 to teach the new Engineering Graphics and Visualization course.

David McDowell received the Georgia Tech Outstanding Doctoral Thesis Award.

Farrokh Mistree received the 1999 Design Automation Award from the Design Engineering Division of the ASME and was named an Associate Fellow of the AIAA.

Jiamin Qu was promoted to full professor.

Farzad Rahiena was promoted to full professor.

Richard Salant served as the Charitable Campaign Coordinator for the Woodruff School.

Suresh Sitaraman received tenure and was promoted to Associate Professor.

John Valentine was elected to the Radiation Instrumentation Steering Committee of the IEEE Nuclear Science Symposium and Medical Imaging Conference.

Raymond Vito won the Georgia Tech ANAK Outstanding Faculty Award and the 2000 Georgia Tech Outstanding Service Award.

Bill Wepfer served as a judge for the Siemens Westinghouse High School Science and Technology Competition in Princeton, New Jersey.

Min Zhou received tenure and was promoted to Associate Professor.

NATIONAL SCIENCE FOUNDATION AWARD WINNERS

Eighteen current Woodruff School faculty members have received National Science Foundation (NSF) Career Awards (previously known as the Presidential Young Investigator Award or the Young Investigator Award. Imme Ebert-Uphoff and Min Zhou both won in 2000. Dr. Ebert-Uphoff received her award for "New Research Directions for Parallel Manipulators - Investigation of Redundant Acutation, Redundant Sensing and Static Balancing," and Min Zhou's award is for "Modeling and Characterization of Microstructure-Induced Toughening in Ceramic Composites with Multiple Micro and Nano Size Scales."

In addition, six faculty members who have since left Georgia Tech and nine Woodruff School Ph.D. alumni who have started academic careers elsewhere have received this prestigious award. See the brochure titled National Science Foundation Career Award Winners from the George W. Woodruff School of Mechanical Engineering for a complete list of the winners.

DAVID KU NAMED TO HUANG CHAIR

Woodruff School Regents' Professor David Ku was named to the Lawrence P. Huang Chair of Engineering Entrepreneurship by the DuPree College of Management, the College of Engineering, and the School of Electrical and Computer Engineering. David has a joint appointment in the Woodruff School and the DuPree College. The multidisciplinary chair was created to develop and teach technology management and entrepreneurship to engineering and management graduate students. The chair is housed in the DuPree College.

David joined the Woodruff School in 1986. He received a bachelor's degree from Harvard University in 1978, an M.S. and a Ph.D. from Georgia Tech in 1982 and 1983, respectively, and his M.D. from Emory University in 1984.
David's work in the Woodruff School involves peripheral vascular pathology and unsteady, three-dimensional fluid dynamics. Projects include the relative role of hemodynamics and thrombosis in vascular grafts; the development of a tissue-engineered vascular graft; and the collapsible tube behavior of highly stenotic arteries.

David has been a Woodruff Faculty Fellow, a program sponsored by the Woodruff School to help mid-career faculty members stay at GT. He received the Gustus Larson Memorial Award and the Y. C. Fung Young Investigator Award from the Bioengineering Division, both from the ASME. In addition, he is a fellow of the American Institute for Medical and Biological Engineering, and is licensed to practice medicine in Georgia and Illinois. He received an NSF Presidential Young Investigator Award, the Young Investigator Award from the American Heart Association, and won a Fulbright Fellowship to Germany.

For more information on David Ku, see Faculty/Staff.

**DICKERSON DONATES TO UNIVERSITY CLUB**

Woodruff School Professor Emeritus Steve Dickerson donated 143,000 shares of stock from his ATDC-incubated company, DVT (Dickerson Vision Technology) Corporation to the Georgia Tech Foundation to honor his father, Frederick R. Dickerson, and to establish a University Club at Georgia Tech. In turn, Tech sold the stock for $1,001,000 to set up the fund for the club.

Steve started the company in 1991 with Ken Oosting (MSME 1987) after a sponsored research program came to fruition. The research developed a patented apparatus for digital imaging and processing to be used for measurement and inspection in industrial processes.

When asked why he gave the stock to Tech, Steve said, "Jane and I decided to donate to Georgia Tech because we profited from my long association with Tech, we wanted to do something to honor my father, and I thought a first-class University Club was important."

Steve has been working with a number of other "old-timers" on campus to reestablish a faculty club, and was president of the resurgent group in 1998-1999. (The club was inactive for a number of years.) The current plans are for the University Club to be the top floor of the Undergraduate Learning Center, to be built near the site of the old Textiles Building. President Wayne Clough is committed to the idea of the club and has suggested this particular space because it is centrally located and accessible. Steve's gift makes the realization of these plans much more likely.
Trudy Allen, Academic Assistant II
Carla Bennett, Accountant II
Kimberly Blue, Undergraduate Academic Advisor
Vladimir Bortkevich, Electrical Engineer II
Donald F. “Butch” Cabe, Manager of Facilities
Tilden E. “Gene” Clopton, Director of Special Projects
Robert Cooper, Mechanical Technician III
Phillip R. Coulson, Accountant II
Betty M. Crumbley, Administrative Assistant I
Andrew G. “Drew” Davis, Electronics Technician III
Martin L. Davisson, Systems Analyst III
Royal F. “Pete” Dawkins, Director of Finance
Judith E. Diamond, Administrative Assistant I
Kenneth Dollar, Director of Support and Technical Services
Jeffrey A. Donnell, Communications Program Coordinator
Debra L. Finney, Administrative Assistant I
Melody Foster, Administrative Manager I
Norma L. Frank, Academic Advisor I
Phyllis Frost, Administrative Supervisor II
Rona A. Ginsberg, Director of Publications and Public Relations
John W. Graham, Machine Shop Manager
Rebecca Hembree, Administrative Assistant I
Angela L. Hicks, Administrative Assistant II
Wanda Joefield, Administrative Assistant I
Vivian Johnson, Administrative Assistant I
Cecelia Jones, Administrative Assistant I
Mary Jo Kleine, Administrative Assistant II
Joan Kraft, Undergraduate Academic Advisor
Sherron Lazarus, Administrative Manager I
Donald E. Long, Mechanical Technician III
Joyce Lowe, Administrative Assistant II
Lisa Manning, Administrative Assistant II
John P. McCullough, II, Manager of Computing, Networking and Electronics
Nancy D. Moody, Administrative Manager I
Jeffrey Murphy, Systems Analyst III
Michael L. Murphy, Administrative Assistant II
M. Claudine Nickens, Administrative Assistant II
The Outstanding Classified Employee Achievement Award is awarded each semester and at the end of the calendar year. At the end of a semester, nominations are received for any staff person who has performed in an exceptional manner during that term. A volunteer committee (six members and one tiebreaker) of staff members selects the winner from nominations received from any employee of the Woodruff School. The 1999 yearly winner was Claudine Nickens (Winter 1999) (at left in photo) and semester winners were: Betty Crumbley (Summer 1999), Mary Jo Kleine (Fall 1999) and Gail Payne (Spring 2000). Previous award winners are noted on the staff web pages.

Promotions
Phillip Coulson was promoted to Financial Specialist.
Betty Crumbley received a promotion to Administrative Assistant II. She provides administrative and secretarial support to NRE and HP faculty.
Judy Diamond was promoted to Administrative Assistant II and she serves as lead secretary in the Love Building.
Rona Ginsberg was promoted to Director of Communications for the Woodruff School. She is the web page editor, and director of publications, public relations, special events, and special projects. She also serves as creative consultant for the School’s Internet degree program.
Angela Hicks was promoted to Financial Specialist.
Wanda Branch-Joefield was promoted to Administrative Assistant II and she is the lead secretary in the MaRC Building.
Don Long was promoted to Mechanical Specialist.
Gail Payne was promoted to Administrative Assistant II and is now working with the bioengineering research group in the IBB Building.
David Stone was promoted to Financial Manager I.

Kimberly Blue: Undergraduate Academic Advisor
Kimberly E. Blue joined the Woodruff School in August 1999, filling the vacancy created by Joan Kraft. They had a three week overlap in August, when both had to deal with the last minute rush of students before the semester system began. Coincidentally, Joan moved to Chicago and Kimberly moved to Atlanta from Chicago.

Ms. Blue has been in higher education for nine years, and she has held positions in Academic and Student Affairs at Illinois Institute of Technology in Chicago and Miami University in Ohio. She has worked as Director of New Student Orientation and Retention, Director of First Year Experience and coordinated and directed commencement exercises. She enjoys working with students in the areas of student development and leadership and has extensive experience in counseling students in academic, career, and personal issues.

Of her tenure thus far at Tech she says, "It has truly been trial by fire, particularly with semester conversion! But it has been great working with the students as their Academic Advisor, and I look forward to working with them in other areas as well in the future." Kimberly earned a B.A. in Psychology and an M.A. in Counseling and Guidance with an emphasis on college student personnel, both from West Virginia University in Morgantown.

She may be reached by e-mail at kimberly.blue@me.gatech.edu or by phone at (404) 894-3205. Her office is MRDC, Room 3112.
Students in the Woodruff School are excellent. The class profiles of incoming Woodruff School undergraduate and graduate students in fall 2000 prove the previous statement.

<table>
<thead>
<tr>
<th>FRESHMAN CLASS PROFILE</th>
</tr>
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<tbody>
<tr>
<td><strong>Average SAT Score (Out of 1600)</strong></td>
</tr>
<tr>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Nuclear Engineering</td>
</tr>
<tr>
<td>Georgia Tech</td>
</tr>
<tr>
<td><strong>High School Grade Point Average</strong></td>
</tr>
<tr>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Nuclear Engineering</td>
</tr>
<tr>
<td>Georgia Tech</td>
</tr>
<tr>
<td><strong>Total Number of Freshmen</strong></td>
</tr>
<tr>
<td>Mechanical Engineering</td>
</tr>
<tr>
<td>Nuclear Engineering</td>
</tr>
<tr>
<td>Georgia Tech</td>
</tr>
<tr>
<td><strong>Males</strong></td>
</tr>
<tr>
<td>164</td>
</tr>
<tr>
<td><strong>Females</strong></td>
</tr>
<tr>
<td>37</td>
</tr>
<tr>
<td><strong>Georgia Residents</strong></td>
</tr>
<tr>
<td>60%</td>
</tr>
<tr>
<td><strong>Out-of-State Residents</strong></td>
</tr>
<tr>
<td>40%</td>
</tr>
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</table>
## INCOMING GRADUATE CLASS PROFILE

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>171</td>
</tr>
<tr>
<td>Number of Applicants</td>
<td>659</td>
</tr>
<tr>
<td>Number Admitted (43% of applicants)</td>
<td>2847</td>
</tr>
<tr>
<td>Matriculated (60% of those accepted; 26% of those applying)</td>
<td>171</td>
</tr>
<tr>
<td>Average Grade Point Average (GPA)</td>
<td>3.55</td>
</tr>
<tr>
<td>Average Score on Graduate Record Exam (GRE)</td>
<td>1905</td>
</tr>
<tr>
<td>Geographical Breakdown by Undergraduate School</td>
<td></td>
</tr>
<tr>
<td>East/Northeast</td>
<td>24 (14%)</td>
</tr>
<tr>
<td>South/Southeast</td>
<td>64 (37%)</td>
</tr>
<tr>
<td>Midwest</td>
<td>19 (11%)</td>
</tr>
<tr>
<td>West/Southwest</td>
<td>18 (11%)</td>
</tr>
<tr>
<td>International</td>
<td>46 (27%)</td>
</tr>
<tr>
<td>Demographics</td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>144</td>
</tr>
<tr>
<td>Females</td>
<td>27</td>
</tr>
<tr>
<td>Minority (U. S. Citizens)</td>
<td>21</td>
</tr>
<tr>
<td>International</td>
<td>54</td>
</tr>
</tbody>
</table>

## STUDENT BODY MAKEUP

In Fall Semester 1999, there were 954 males (82%) and 206 females (18%) for a total of 1160 students. Of these, 282 (23%) were minorities (note that minority includes only U. S. citizens and permanent residents: Asians, Blacks, Hispanics, American Indian, and (Multiracial)) and 30 (2%) were internationals. On the graduate side, there were 418 males (82%) and 87 females (18%) for a total of 505
students. Of these, 85 (17%) were minorities and 119 (19%) were internationals.

**ENROLLMENT**

There was a total of 1160 undergraduate students in the Woodruff School in fall semester 1999, excluding the co-op students at work. Of these, 1134 were in Mechanical Engineering and 26 in Nuclear and Radiological Engineering. The class breakdown is: 266 freshmen (257 ME and 9 NRE), 284 sophomores (280 ME and 4 NRE), 294 juniors (289 ME and 5 NRE), and 310 seniors (304 ME and 6 NRE).

On the graduate side, we had a total of 505 students. Of these, 282 were Master's students (259 in ME and 23 in HRE/HP), and 219 Doctoral students (197 in ME and 22 in NRE/HP). There were also four special students.

---

**ENROLLMENT IN THE SCHOOLS OF THE COLLEGE OF ENGINEERING**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineering</td>
<td>339</td>
<td>368</td>
<td>213</td>
<td>224</td>
</tr>
<tr>
<td>Bioengineering</td>
<td>—</td>
<td>—</td>
<td>30</td>
<td>47</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>690</td>
<td>662</td>
<td>100</td>
<td>106</td>
</tr>
<tr>
<td>Civil and Environmental Engineer</td>
<td>553</td>
<td>449</td>
<td>332</td>
<td>315</td>
</tr>
<tr>
<td>Electrical and Computer Engineer</td>
<td>1,765</td>
<td>1,786</td>
<td>745</td>
<td>780</td>
</tr>
<tr>
<td>Industrial &amp; Systems Engineering</td>
<td>1,098</td>
<td>1,072</td>
<td>243</td>
<td>269</td>
</tr>
<tr>
<td>Materials Science and Engineering</td>
<td>60</td>
<td>49</td>
<td>78</td>
<td>81</td>
</tr>
<tr>
<td><strong>Mechanical Engineering</strong></td>
<td><strong>1,099</strong></td>
<td><strong>1,160</strong></td>
<td><strong>495</strong></td>
<td><strong>505</strong></td>
</tr>
<tr>
<td>Textile &amp; Fiber Engineering</td>
<td>146</td>
<td>114</td>
<td>46</td>
<td>44</td>
</tr>
<tr>
<td>Undeclared</td>
<td>430</td>
<td>364</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total College of Engineering</strong></td>
<td><strong>6,180</strong></td>
<td><strong>2,200</strong></td>
<td><strong>2,282</strong></td>
<td><strong>2,371</strong></td>
</tr>
</tbody>
</table>
STUDENT NEWS AND HONORS

Anne Marie Albanese, a new graduate student, is a National Science Foundation graduate fellowship winner.

Grant Baynham (BME 1997), a GWW graduate student, received a Weaver-James-Corrigan Postgraduate Scholarship from the Atlanta Coast Conference.

Cavelle P. Benjamin, IV won first place (among undergraduate students) in the 1999 Technical Symposium Contest of the Georgia Tech Chapter of the National Society of Black Engineers.

Robert D. Carpenter won the Woodruff School’s Outstanding Scholar Award.

Lisa Chang won an NSF graduate fellowship.

Rhima Coleman has received a Whitaker Foundation Fellowship for her studies in biomedical engineering.

Elyssa Crafton won an NSF graduate fellowship.

Brian Davis was an honorable mention for the NSF graduate fellowship.
N. Peter Davis won the 1999 GoldKist Scholarship from the Georgia Engineering Foundation.
Stacey A. Dixon attended the NSF sponsored workshop for the retention and advancement of underrepresented and minority engineering educators. Stacey also won 3rd place (among graduate students) in the 1999 Technical Symposium Contest of the Georgia Tech Chapter of the National Society of Black Engineers.
Jiro Dokeh received a Georgia Engineering Foundation Senior Design Award.
Tim Ferguson won an NSF graduate fellowship.
Marco Fernandez won an NSF graduate fellowship.
Heather Gepford received the Health Physics Society Fellowship. She is the second consecutive graduate student from GWW to receive this prestigious award. Only eight are given each year.
Francois Guillot received an award for the Best Student Paper in Engineering Acoustics at the 139th Meeting of the Acoustical Society of America held in Atlanta. Jacek Jaryzinski is his advisor.
Johnney Green has been named the Outstanding GEM Alumnus by the 2000 Black Engineer of the Year Awards Selection Committee.
Joe Haemer has been awarded the 1999-2000 International Microelectronics and Packaging Society (IMAPS) Educational Foundation Grant. Joe is one of only six students in the country to be selected for the award.
Jennifer Hea won the School Chair’s Award on the basis of outstanding scholarship and contributions to the Woodruff School for a graduating senior.
Ashley James was accepted into the NSF Engineering Education Scholars Workshop at Carnegie Mellon University.
Philippe Jasport has accepted a job in the United States as a management consultant for Cambridge Management Consulting. Philippe was in the first group of French students at ENSAM who participated in the GTL program.
Angela Lin won an NSF Graduate Fellowship.
Justin McLoughlin received the Marjorie Roy Rothermel Scholarship from the ASME Auxiliary.
Brents Ring received a postdoctoral research award from the National Research Council.
Kristin Michael won the Richard K. Whitehead Jr. Memorial Award and an NSF Graduate Fellowship.
Reinhard Powell won the Pi Tau Sigma Outstanding Senior Award.
Chad Rasmussen won the Samuel P. Eschenbach Memorial Award in Mechanical Engineering.
Charlotte Cody Song was accepted into the NSF Engineering Education Scholars Workshop at Carnegie Mellon University.
Raye Sosseh was recognized as an outstanding Graduate Teaching Assistant and was a candidate for a CETL/BP Amoco GTA Teaching Excellence Award.
Matthew Spetzler received the Pi Tau Sigma Outstanding Sophomore Award.
Jodi Sulak received the Applied Health Physics Graduate Fellowship from the Oak Ridge Institute for Science and Education for travel to Seattle to attend the IEEE Nuclear Science Symposium.
David Tamburello received an honorable mention for the NSF graduate fellowship program.
Mark Allen Trautman, along with Professor Ari Glezer, was awarded U.S. Patent 5,957,413 for an invention titled, "Modifications of Fluid Flow About Bodies and Surfaces with Synthetic Jet Actuators."
Christine Valle was invited to attend the NSF workshop for the retention and advancement of underrepresented and minority engineering educators.
Jennifer Venton won the 2000 Hutchings Education Grant from SMTA (Surface Mount Technology Association). The award is given to a student pursuing an advanced degree in electronics assembly, packaging, or a related field. Annica Warrick won an NSF graduate fellowship. Russell Watts was an honorable mention in the NSF graduate fellowship program. Susan White won an NSF graduate fellowship. Hasani Wooten, a new graduate student, is an NSF graduate fellowship winner. Nicole Zirkelback was invited to attend the NSF sponsored workshop for the retention and advancement of underrepresented and minority engineering educators, and she won a NASA GRSP award.

PRESIDENT'S SCHOLARS

The President's Scholar Program, which began in 1981, identifies students who have excelled in academia and leadership. Financial awards are for four academic years, and students are expected to maintain honors-level academic performance and to be involved in campus or community activities. The program is funded entirely by endowments and annual contributions from Georgia Tech's generous alumni, industry supporters, and other friends through the Roll Call annual giving program.

In Fall 2000, seventy-six new President's Scholars will enter the Institute. Of these, nine will be Woodruff School students. Woodruff School students currently enrolled as President's Scholars are:

Saniya Akhtar Ahsan
Joshua Adam Bagwell
Jesse Ellis Barton
Emily Frances Beck
Adam Anthony Bierce
Robert James Carroll
Michael Allen Clements
Michael Sebastian DeNicola
Todd William Evans
Michael Andrew Gootman
Justin Michael Hargrove
Nathan David Liddell
Christyn Francesca Magill
John Philip Malek

David E. Moeller
Melissa Linnea Murray
Daniel John Muxie
Patrick Nardi
Shawn Michael O'Connor
Erica Welch Onsager
Adam Brian Reich
Ryan Elizabeth Reynolds
Nathan Taylor Scripps
Marc Vincent Thames
Damon Lee Underwood
Jennifer Renea Watson
Christina Lauren Weise
Roy Linwood Woodard
From July 1, 1999 to June 30, 2000, Woodruff School students were awarded $2,470,984 in fellowships for graduate study; in 1998-1999 that amount was $2,219,407 and in the previous year, $1.52 million. The impressive quality of our graduate students is demonstrated by the presence of 94 Georgia Tech President's Fellows and 83 winners, since 1990, of the prestigious National Science Foundation graduate fellowship.

**ARCS (Achievement Rewards for College Scientists) Foundation Atlanta**  
**Chapter Scholars**  
Carolyn Connor Seepersad  
Stacey Dixon  
Staci Edlund  
Dawn Foley  
Ashley James

**ASHRAE (American Society of Heating, Refrigeration, and Air Conditioning Engineers)**  
**Grant-in-Aid**  
Laura Schaefer

**ASME (American Society of Mechanical Engineers) Graduate Teaching Fellowship**  
Stacey Dixon  
Stephanie Kladakis

**ASME Marjorie Roy Rothermal Scholarship**  
Justin McLoughlin

**ALCOA/GTL Fellowship**  
Matthew Behr  
Rebecca Charpentier

**Atlantic Coast Conference Weaver James Corrigan Postgraduate Scholarship**  
Grant Baynham

**Department of Energy, Integrated Manufacturing Fellowship**  
R. Reid Bailey  
Matthew Bauer  
Anh Dang  
Ty Dawson  
Chad Duty  
Dathan Erdahl  
Andrew Scholand

**Department of Energy Health Physics Fellowship**
Edward Hoffman (NE)
Jodie Sulak (HP)

Department of Energy Traineeship
Steven Keller (NE)
Adam Rocker

Department of Energy, Civilian Radioactive Waste Management Fellowship
Michael Scott McKinley (NE)
Scott Mosher (NE)

Ford Foundation Graduate Fellowship
Gena Poe (HP)

Ford Foundation Dissertation Fellowship
Samuel Graham

Fulbright Fellowship
Gabriel Hernandez

General Electric Faculty for the Future
Doctoral Fellowship
Marco Fernandez
Susan White

GEM (Graduate Education for Minorities Fellowship)
Natalie Barrett (MS) Hernan Mercado-Corujo (MS)
Rafael deCardenes (MS) Erika Ooten (MS)
Brian Davis (MS) Frank Pyrtle (Ph.D.)
Charlene Demiel (MS) Patrick Reid (MS)
Taesha Diggs (MS) Michael Robertson (MS)
Jarrett Datcher (MS) Danielle Rose (MS)
Brett Fennell (Ph.D.) Curtis Sharif (MS)
Anthony Finch (MS) Mathieu Thames (MS)
Ali Gordon (Ph.D.) Ronney Versey (MS)
Shannon Malcolm (MS)

General Motors Fellowship
Pamela Broad
Mark Gaylord

Georgia Tech President's Fellowship
R. Reid Bailey Kristopher Kozak
Desiree Batth (HP) Timothy Lieuwen
Glenn Fellowship

Vincent Chan  Jordan Neysmith
Elyssa Crafton  Christopher Rinehart
Jacob Diez  Ryan Rye
Samuel Durbin II  Charlotte Song
Timothy Ferguson  Andrew Terrell
Aaron Graf  Eric Vanderploeg
Ai-Ping Hu  Russell Watts
Thomas Karastamatis  Nathan Weiland
Angela Lin  Tracy Williams

Gold Kist Scholarship, Georgia Engineering Foundation
N. Peter Davis

INPO (Institute for Nuclear Power Operations) Fellowship
Neale Griffis (HP)

INTEL Graduate Fellowship
Ruijun Chen
Saghir Munir
Thomas Tucker

Luce Fellowship
Stacy Imler

Merck-UNCF Fellowship
Stacey Dixon

NASA Graduate Fellowship
Frederick Cowan
Andrew Honohan
Wayne Johnson
Josiah Lindsay
Calvin Martin

National Defense Science & Engineering Graduate Fellowship
Sundiata Jangha
Kristopher Kozak
Michael Swinson
Nathan Weiland

NIH Traineeship
Phillip Harp
Adele Wright
NPSC (National Physical Science Consortium) Fellowship
Michael Woodmansee
Tracie Zoeller

NSF Graduate Fellowship
John Clayton
Carolyn Connor-Seepersand
Rebeccah Covert
Stephen Hill
Stacy Imler
Clifford Johnson
Stephanie Kladakis
Matthew Marston
Janna Mouw
Erika Ooten
Laura Schaefer
Timothy Simpson
Jeffrey Thiele
Monifa Wright
Claudia Zettner

NSF Composites Traineeship
Samuel Graham

NSF FACES Fellowship
Mathieu Thames
Annica Warrick
Brian Wayman

NSF Tribology Traineeship
Susan Harp
Bradley Miller

Packard Fellowship
Desirre Batth (HP)
Sheila Colbert

Raytheon Fellowship
Jeremy Harvey
Melissa Keohane

Sloan Foundation Doctoral Fellowship
Ali Gordon
Wayne Johnson
Jacqueline Menchaca
Gena Poe
Orlando Ruiz
U.S. Air Force Traineeship
Lynnane George (Ph.D.)
Donald Rhymer (MS)
Mark Tudela (Ph.D.)

U.S. Air Force Palace Knight Fellowship
Paul Hausgen
Ryan Morrissey

U.S. Air Force Palace Acquire Fellowship
Peter Christiansen

U.S. Army Traineeship
Blace Albert
Stace Garrett
Shawn Klawunder

U.S. Navy Graduate Study Traineeship
Toby Lentz
Joseph Root
Ryan Stoddard
John Wiggens

Whitaker Fellowship
Bryan Marshall
Brian Wayman
Stephanie Kladakis

Woodruff Fellowship
Desiree Batth (NE)
Matthew Bauer
Brad Beadle
Benjamin Byers
Peter Carnell
Sheila Colbert (NE)
David Copeland
Rebeccah Covert
Vincent Chan
Adam Coutee
Elyssa Crafton
Joseph Crawford
Thomas Crittenden
N. Peter Davis
Joseph De Kroon

Robert McGinty
Adam Melch
Jacqueline Menchaca
Mital Modi
Janna Mouw
Jordan Neysmith
James Nichols
Phillip Nguyen
John Pape
Gene Poe (HP)
Christopher Rinehart
Joseph Root
Orlando Ruiz
Griffith Russell
Ryan Rye
<table>
<thead>
<tr>
<th>Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marnico Deladisma</td>
<td>Laura Schaefer</td>
</tr>
<tr>
<td>Benjamin Dempsey</td>
<td>Brian Schroeter</td>
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<td>Jacob Diez</td>
<td>Ben Shapiro</td>
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<td>Hai Ding</td>
<td>Matthew Sin</td>
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<td>Michael Drexel</td>
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<td>Andrew Stack</td>
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<td>Jason Stammen</td>
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<td>Ai-Ping Hu</td>
<td>Brian Wayman</td>
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<td>Sundiata Jangha</td>
<td>Nathan Weiland</td>
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<td>Daniel Jean</td>
<td>John Wiggins</td>
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<td>Thomas Karastamatis</td>
<td>Tracy Williams</td>
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<tr>
<td>Travis Laker</td>
<td>Thomas Wilson</td>
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<td>Toby Leutz</td>
<td>Rex Wolf</td>
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<td>Angela Lin</td>
<td>Michael Woodmansee</td>
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<td>David Longanbach</td>
<td>Claudia Zettner</td>
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<tr>
<td>Matthew Marston</td>
<td>Nichole Zirkelback</td>
</tr>
<tr>
<td>Lisa Mauck</td>
<td>Tracie Zirkelback</td>
</tr>
</tbody>
</table>

**Woodruff School GTL Fellowship**
- Paul Haverkemp
- Mikhel Hawkins
- Diego Osorio
- Sheryl Raezer

**Woodruff Teaching Internship**
- Stephanie Kladakis
- Brents Ring
- Charlotte Song

**Yopp Fellowship**
- Stacy Imler
- Angela Lin
In 1888 mechanical engineering was the only degree-granting program at Georgia Tech. Today, the Woodruff School offers two undergraduate degrees and nine graduate degrees. In addition, the master’s degree can be completed off-site via video-based instruction or on the Internet.

DEGREES AWARDED

This past academic year, the Woodruff School awarded 394 degrees: 274 bachelor's degrees and 120 graduate degrees (83 master's degrees and 37 Ph.D. degrees). These graduation numbers place the Woodruff School among the top producers of both advanced degrees and bachelor's degrees in mechanical engineering in the country. In Mechanical Engineering, there were 269 bachelor's degrees, 78 master's, and 32 Ph.D.’s, while in Nuclear Engineering/Health Physics, there were five bachelor's degrees, five master's, and five Ph.D. degrees.

Of the bachelor's degrees awarded in Mechanical Engineering, 215 went to males and 54 to females and in Nuclear Engineering, four went to men and one to a woman. At the graduate level, 66 males and 11 females and four males and and two females received Master's degrees in Mechanical Engineering and Nuclear Engineering/Health Physics, respectively. Of the doctoral degrees, 24 men and eight women were in Mechanical Engineering and three men and two women were in Nuclear Engineering and Health Physics.

DEGREES AWARDED FOR THE COLLEGE OF ENGINEERING
BY SCHOOL FROM SUMMER 1999 TO SPRING 2000

<table>
<thead>
<tr>
<th></th>
<th>Bachelor's Degrees</th>
<th>Master's Degrees</th>
<th>Doctoral Degrees</th>
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<tbody>
<tr>
<td>Aerospace Engineering</td>
<td>28</td>
<td>53</td>
<td>11</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>0</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Chemical Engineering</td>
<td>143</td>
<td>7</td>
<td>11</td>
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<tr>
<td>Civil and Environmental Engineering</td>
<td>148</td>
<td>111</td>
<td>27</td>
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<tr>
<td>Electrical and Computer Engineering</td>
<td>321</td>
<td>222</td>
<td>50</td>
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<tr>
<td>Industrial and Systems Engineering</td>
<td>289</td>
<td>112</td>
<td>10</td>
</tr>
<tr>
<td>Materials Science Engineering</td>
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<td>14</td>
<td>9</td>
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<tr>
<td>Mechanical Engineering</td>
<td><strong>274</strong></td>
<td><strong>83</strong></td>
<td><strong>37</strong></td>
</tr>
<tr>
<td>Textile and Fiber Engineering</td>
<td>24</td>
<td>8</td>
<td>5</td>
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<tr>
<td><strong>Totals for COE</strong></td>
<td>1,243</td>
<td>614</td>
<td>160</td>
</tr>
</tbody>
</table>

UNDERGRADUATE DEGREES AWARDED
During the past academic year, 274 undergraduate degrees were awarded (52 degrees in Summer 1999, 94 degrees in Fall 1999, and 128 degrees in Spring 2000).

### Summer 1999

Andrews, Jason  
Barnes, Mandy Diane  
Barnes, Wesley  
Bentley, Jesse  
Blair, Christopher  
Bryant, Scott  
Chinik, James  
Colbert, Robert  
Cracyraft, Jeffrey W.  
Curtis, Eric  
Davis, Natedra  
Dayton, Christopher  
Do, Vuchuong  
Folger, James  
Fong, Kai  
Gadis, Edwin  
Gallant, Nathan  
Garmon, David  
Gould, Derek  
Greene, Andrea  
Hall, Melissa  
Hamley, Victor  
Hardy, Justin  
Hoffman, Brian  
Howard, Eric  
Hsu, Liwei  
Johnson, William  
Knapp, James  
Lacov, Brandon  
Lord, Nathan  
MacLean, James  
McCrobie, Theodore  
Moore, William  
Murty, Rahul  
Musheno, Matthew  
Musheno, Jason  
Nguyen, Leslie  
Padgett, Damon  
Patterson, Rafe  
Pattillo, Harold  
Porter, Wesley  
Price, Shannon  
Robinson, Daniel  
Short, Brandon  
Smith, Brian Matthew  
Smith, Carrie  
Trifiletti, Josehu  
Upton, Lindsay  
Wernz, Michael  
Wright, Charles  
Yang, Jin

### Fall 1999

Alune, Benjamin  
Ball, William  
Baptiste, Alvin  
Barbisch, Patricia  
Bartling, Bradley  
Benjamin, Cavelle  
Berkowitz, Charles  
Bouknight, Nathan  
Brannon, John  
Bray, Kemp  
Bretz, Kathleen  
Brooks, Colin  
Brown, Daniel  
Bussema, Sara  
Byrd, Thomas Alan  
Carpenter, Robert  
Kowall, Jeremy  
Lawrence, Chiestine  
Lynn, Wendell  
Lynn, Carroll  
Martin, Timothy  
McCahill, Jill  
McCoid, Kristan Jean  
McGlocklin, David  
McNames, John  
Mitchell, Stephanie  
Muglach, Kevin  
Murray, Peter  
Newberry, Kiyandi  
Ngo, Phong  
Nguyen, Huy  
Nichols, Jason Daniel
Agarwal, Mayank  Lawson, Kristi
Alexander, William  Lelli, Richard
Amin, Roopal  Loeffel, William
Archie, Marlin  Lokey, Charles
Arnett, Louie  Lynch, James
Barge, Jonathon  Mackey, Theral
Barletta, Jonathan  Malluck, John
Bell, Andrew  Martin, Kirk
Betkowski, Brian  Maymi, Melanie
Bracey, John  McAlhany, Dana
Burgess, Andrea Renee  McKinsey, Michael
Byrd, Thomas Alan  Meredith, Nathan
Caldwell, Edmonia  Michael, Kristin Elizabeth
Camp, Brian  Mitchell, Nathaniel
Carpenter, Eric  Monserrate, Carlos Jose
Carter, Frances  Montesinos, Jose
Chatting, Richard
GRADUATE DEGREES AWARDED

Here is a compilation of the master's and doctoral degrees granted by the Woodruff School in summer 1999, fall 1999, and spring 2000.
Thirty-four degrees were awarded in summer 1999, 41 in fall 1999, and 45 in spring 2000.

### Summer 1999 Graduates

<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Advisor</th>
<th>Thesis Title</th>
<th>Previous School Attended</th>
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<tr>
<td>Antonoff, Marcy</td>
<td>MSME-V</td>
<td>Jonathan Colton</td>
<td>Nonthesis</td>
<td>Georgia Tech</td>
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<td>Beilke, Robert L.</td>
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<td>Nolan Hertel</td>
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<td>Bennett, Valerie</td>
<td>Ph.D. ME</td>
<td>David McDowell</td>
<td>A Microscale Study of Small Crack Propagation in Multiaxial Fatigue</td>
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<td>Bradshaw, Jennifer B.</td>
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<td>Butler, George Cox</td>
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<td>Incorporating Dislocation Substructure Into Crystal Plasticity Theory</td>
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<td>Chen, Shelley L.</td>
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<td>William Black</td>
<td>Programs for Calculating High Temperature Ampacity and Sag for Overhead Electrical Conductors</td>
<td>Florida State University</td>
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<td>Chen, Wei</td>
<td>Ph.D. ME</td>
<td>Chris Lynch</td>
<td>Nonlinear Constitutive Behavior and Fracture of Ferroelectric Materials and Structures</td>
<td>Clemson University</td>
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<td>Dawson, Ty Grant</td>
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<td>Thomas Kurfess</td>
<td>White Layer Surface Damage Generated When Turning Hardened 52100 Steel</td>
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<td>Effective Thermal Conductivity of Damaged Composites</td>
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<td>Harp, Phillip A.</td>
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<td>Robert Cargill</td>
<td>System to Compress While Electrically Stimulating the Hippocampul Brain Slides</td>
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<td>Simulation of Tubular Solid Oxide Fuel Cell Behavior for Cycles</td>
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<td>Heising, Raymond C.</td>
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<td>Effectiveness of Pulsed Spray Combustion for Suppression of Combustion Instabilities</td>
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<td>Development of a Haptically Enabled Disassembly Simulation Environment</td>
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<td>Second Order Boundary Condition Perturbation Theory</td>
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<td>Steady-State Response of an Axial Compression System to a Constant Heat Input</td>
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<td>Piepermeier, Jenelle L.</td>
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<td>Harvey Lipkin</td>
<td>A Dynamic Quasi-Newton Method for Model Independent Visual Servoing</td>
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<td>Pitts, Michelle G.</td>
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<td>Design and Analysis of Subcritical Experiments Using Fresh Fuel Assemblies</td>
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<td>Ribadeneira, Marcelo X.</td>
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<td>Russell, Griffith B.</td>
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<td>Ari Glezer</td>
<td>Local and System Level Thermal Management of a Single Level Integrated Module (SLIM) using Synthetic Jet Actuators</td>
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<td>Tognetti, Lawrence J.</td>
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<td>Actuator Redesign for a Passive Haptic Display</td>
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</table>
Turner, Anita L. Ph.D. NE Show-Hwa Fong & Bernd Kahn A Physiologically Based Pharmacokinetic Model for Lactational Transfer of Na13I Southern University

Variyam, Manjula MS Suresh Sitaraman Palletization and Design of Simulations for Large Area Processing and Assembly in Electronic Packaging Indian Institute of Technology-Madras

Walker, Andrew E. MSME Dan Baldwin Nonthesis University of Technology-Jamaica

Watson, Cody L. MSME Wayne Book Modeling of Pressure Transients for Fuel Injection Lines Texas Tech

**Fall 1999 Graduates**

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<tr>
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<td>Beadle, Brad M.</td>
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<td>Jacek Jarzynski</td>
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<td>Braden, Jason B.</td>
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<td>Open Architecture and Calibration of a Cylindrical Grinder</td>
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<td>Stereolithography Mold Design</td>
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<td>Geometric Interfaces for Analyzable Product Models with Highly Mismatched Design-Analysis Geometry</td>
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<td>Dang, Anh X.</td>
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<td>Study on Warpage of Base Substrate and Materials for Large-Area MCM-D Packaging</td>
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<td>Daughtrey, William</td>
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<td>Measurement of Underwater Surface Displacement in the Presence of Underwater Sound Using LDV</td>
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<td>Du, Winncy</td>
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<td>Stephen Dickerson</td>
<td>Real-Time Robust Feedback Control Algorithms for Vibratory Part Feeding</td>
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<td>Acoustic Enhancement of Water Evaporation in a Pulsating Combustion</td>
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<td>Numerical Model of the Transient Behavior of a Copper Wafer Heat Pipe</td>
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<td>Assessing the Value of Rapid Prototyping and Rapid Tooling in Product Design Processes</td>
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<td>Geng, Haining</td>
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<td>Theoretical Modeling of the Effect of Noncondensables on Critical Flow Flashing in Subcooled Liquids</td>
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<td>Parametric Study of Cryocooler Regenerator Performance</td>
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<td>Plasma Torch Interaction with a Melting Interface</td>
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<td>Product Platform Concept Exploration of Automobile Engines</td>
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<td>Li, Bo</td>
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<td>Analysis and Synthesis of Machining Fixture-Work Place Systems with Multiple Frictional Contacts</td>
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<td>Li, Ping</td>
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<td>Investigation of the Binding Characteristics and the Possible Blockade of CD16A Molecule</td>
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<td>Lieuwen, Tim</td>
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<td>Investigation of Combustion Instability Mechanisms in Premixed Gas Turbines</td>
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<td>Pete Rogers</td>
<td>Characterization of Non-linearities in the Propagation of High Frequency Seismic Waves</td>
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<td>Aussaguel, Pierre</td>
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<td>Thomas Kurfess</td>
<td>A Numerical Simulation of Hard Turning 52100 Steel to Detect White Layer Formation</td>
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<td>Bougye, Frederic</td>
<td>MSME</td>
<td>Iwona Jasiuk</td>
<td>A Multiscale Model of Cancellous Bone</td>
<td>University of Metz, France</td>
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<td>Conroy, Justin</td>
<td>MSME</td>
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<td>Analysis of Adaptive Neuro-Fuzzy Network Structures</td>
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<td>Cook, Daniel</td>
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<td>Yves Berthelot</td>
<td>Monitoring Small Fatigue Cracks Using Ultrasonic Surface Waves</td>
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<td>Low, Yee Weng</td>
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<td>A Deterministic Mixed-Elastohydrodynamic Lubrication Model and Analysis of Lip-Seal Performance</td>
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<td>The Role of Integrins in the Differential Upregulation of Tumor Cell Motility by Endothelial Extracellular Matrix Proteins</td>
<td>Carnegie-Mellon University</td>
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### Spring 2000 Graduates

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<td>Techno-Economic Model for Designing Marine and Offshore Power Generating Systems</td>
<td>University of Michigan</td>
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<td>Michaelides, Stylianos</td>
<td>Ph.D. ME</td>
<td>Suresh Sitaraman</td>
<td>Physics-Based Process Modeling, Reliability Prediction, and Design Guidelines for Flip-Chip Devices</td>
<td>University of Leeds</td>
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<td>Miller, Matthew</td>
<td>MSME</td>
<td>I. Charles Ume</td>
<td>Development of a Non-Contact Data Acquisition System for Robotic Welding Process Monitoring</td>
<td>University of New Mexico</td>
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<td>Pedersen, Kjartan</td>
<td>Ph.D. ME</td>
<td>Farrokh Mistree</td>
<td>Designing Product Platforms: An Evolutionary Approach to Developing Engineering System</td>
<td>Norwegian Institute of Technology - Trondheim</td>
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<td>Prasse, Brian S.</td>
<td>MSME</td>
<td>Peter Rogers</td>
<td>The Determination of Far-Field Backscatter Using a Near-Field Calibration Array</td>
<td>Tufts University</td>
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<td>Reid, Robert</td>
<td>Ph.D. ME</td>
<td>Prateen Desai</td>
<td>Oscillatory Thermodynamics with Steady Through Flow</td>
<td>Iowa State University</td>
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<td>Rhymer, Donald</td>
<td>MSME</td>
<td>Steve Johnson</td>
<td>Fatigue Damage Mechanism in Advanced Hybrid Titanium Composite Laminates</td>
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<td>Schmitt, Robert</td>
<td>MSME</td>
<td>Shreyes Melkote</td>
<td>Design of a Flexible Fixturing System</td>
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<td>Shi, Fanghui</td>
<td>Ph.D. ME</td>
<td>Richard Salant</td>
<td>A Deterministic Mixed-Elastohydrodynamic Lubrication Model and Analysis of Lip-Seal Performance</td>
<td>Florida International University</td>
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<td>Su, Jiann-Ming</td>
<td>MSME</td>
<td>Jerry Ginsberg</td>
<td>A Methodology for Studying Distortion of Speech Resulting from Propagation Through a Layered Wall</td>
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<td>Trautman, Mark</td>
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<td>Ari Glezer</td>
<td>The Manipulation of Instabilities in a Natural Convection Boundary Layer Along a Heated, Inclined Plate</td>
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<td>Valle, Christine</td>
<td>Ph.D. ME</td>
<td>Jianmin Qu &amp; Laurence Jacobs</td>
<td>Guided Circumferential Waves in Annular Structures</td>
<td>Foundation Ecole Polytechnique, Sceaux-France</td>
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<td>Veinot, Kenneth</td>
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<td>Nolan Hertel</td>
<td>An Angular Dependent Neutron Effective-Dose-Equivalent Dosimeter</td>
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<td>Wang, Jianwei</td>
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<td>S. Abdel-Khalik</td>
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<td>Willis, Richard L.</td>
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<td>Yves Berthelot</td>
<td>Non-Invasive Characterization of Microvoided Polymers Under Controlled Static Pressure and Temperature using Laser Doppler Vibrometry</td>
<td>Georgia Tech</td>
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<td>Wright, Adele</td>
<td>Ph.D. ME</td>
<td>Cheng Zhu</td>
<td>The Role of Integrins in the Differential Upregulation of Tumor Cell Motility by Endothelial Extracellular Matrix Proteins</td>
<td>Carnegie-Mellon University</td>
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<tr>
<td>Name</td>
<td>Degree</td>
<td>Advisor</td>
<td>Title</td>
<td>Institution</td>
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<td>MSME</td>
<td>Christopher Lynch</td>
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<td>Geving, Bradley</td>
<td>MSME</td>
<td>Imme Ebert-Uphoff</td>
<td>Enhancement of Sterolithography Technology to Support Building Around Inserts</td>
<td>Georgia Tech</td>
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<td>Gordon, Ali</td>
<td>MSME</td>
<td>David McDowell</td>
<td>Nonthesis</td>
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<td>Grosser, Karen</td>
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<td>William Singhose</td>
<td>Input Shaping For Tele-robotic Manipulators</td>
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<td>Harp, Susan</td>
<td>Ph.D.</td>
<td>Richard Salant</td>
<td>A Computational Method For Evaluating Cavitating Flow Between Rough Surfaces</td>
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<td>He, Xiaoling</td>
<td>MSME</td>
<td>Robert Fulton</td>
<td>A Theoretical Framework for Dynamic Response of the Printed Wiring Board With Mechanical and Thermal Loading</td>
<td>University of Tennessee</td>
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<td>Hecker, Rogelio</td>
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<td>Steven Liang</td>
<td>Power Feedback Control in Cylindrical Grinding Process</td>
<td>Instituto Balseiro, Argentina</td>
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<td>Houston, Paul</td>
<td>MSME</td>
<td>Daniel Baldwin</td>
<td>On the Development of Statically Balanced Parallel Platform Manipulators</td>
<td>Georgia Tech</td>
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<td>Hunter, Christopher</td>
<td>MSME</td>
<td>Robert Neremm</td>
<td>Nonthesis</td>
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<td>Hussain, Aftab</td>
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<td>William Wepfer</td>
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<td>Jackson, Robert L.</td>
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<td>Itzhak Green</td>
<td>An Investigation of the Wear and Lubrication of a Thrust Washer System in an Automatic Transmission</td>
<td>Georgia Tech</td>
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<td>Jiang, Mingxiao</td>
<td>Ph.D.</td>
<td>Iwona Jasiuk</td>
<td>Scale and Boundary Condition Effects in Fiber-Reinforced Composites</td>
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<td>Johnson, Kevin</td>
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<td>On the Development of Statically Balanced Parallel Platform Manipulators</td>
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<td>Koontz, John</td>
<td>MSME</td>
<td>Robert Guldberg</td>
<td>Digital Imaged-Based Finite Element Modeling: Simulation of Mechanically-Induced Bone Formation</td>
<td>University of Michigan</td>
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<td>McDonald, Richard P.</td>
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<td>Prasanna Kadaba</td>
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<td>Miller, Bradley</td>
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<td>New Formulations for Numerical and Semi-Analytic Dynamic Analysis of Gas Lubricated Triboelements</td>
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<td>Moore, Chad A.</td>
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<td>Thomas Kurfess</td>
<td>Multi-Axis Sterolithography Controller With Graphical User Interface (GUI)</td>
<td>West Virginia Wesleyan College</td>
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<td>Pitakwatchara, Phongsaen</td>
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<td>Razavi, Hosein Ali</td>
<td>Ph.D.</td>
<td>Thomas Kurfess</td>
<td>Identification and Control of Grinding Processes for Intermetallic Compounds</td>
<td>Sharif University of Technology, Iran</td>
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<td>Rhim, Sungsoo</td>
<td>Ph.D.</td>
<td>Wayne Book</td>
<td>Limitation and Improvements of Time-Delay Command Shaping Filters</td>
<td>Seoul National University, Korea</td>
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<td>Ruiz, Orlando E.</td>
<td>Ph.D.</td>
<td>William Black</td>
<td>Numerical Analysis of the Dropwise Evaporation Process</td>
<td>University of Vermont</td>
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<td>Rye, Ryan P.</td>
<td>MSME</td>
<td>Kenneth Cunefare</td>
<td>Model Analysis of a Squealing Disc Brake Via Sound Intensity And Laser Doppler</td>
<td>University of Tennessee</td>
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<td>Siddique, Zahed</td>
<td>Ph.D.</td>
<td>David Rosen</td>
<td>Common Platform Development: Designing For Product Variety Mechanical Performance of a Novel Biomaterial for Articular Cartilage Replacement</td>
<td>Georgia Tech</td>
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<td>Stammen, Jason</td>
<td>MSME</td>
<td>Robert Guldberg</td>
<td>Onset of Flow Instability and Critical Heat Flux In Horizontal, Thin, Uniformly Heated Annuili</td>
<td>University of Cincinnati</td>
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<td>Stoddard, Ryan</td>
<td>MSME</td>
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<td>Sucosky, Philippe</td>
<td>MSME</td>
<td>Steven Danyluk</td>
<td>Water Jet Cutting of Silicon: Kerf Width Prediction</td>
<td>ENSAM, Aix, France</td>
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<td>Swanberg, Erik</td>
<td>MSHP</td>
<td>John Valentine</td>
<td>Improving the Performance of a Personnel Monitor Based On Long-Range Alpha Detection</td>
<td>University of California at Berkeley</td>
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<td>Thorpe, Ryan</td>
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<td>Reliability Analysis of Flip Chip On Board Assemblies Using No-Flow Underfill Materials</td>
<td>University of California at San Diego</td>
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<td>Walker, Anthony L.</td>
<td>MSME</td>
<td>Daniel Baldwin</td>
<td>Nonthesis</td>
<td>Tuskegee University</td>
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<td>Wang, Jianwei</td>
<td>Ph.D.</td>
<td>Sheldon Jeter</td>
<td>An Experimental Investigation of Droplet Impact Cooking at Controlled Surface Temperatures</td>
<td>McMaster University</td>
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</table>
Weber, Amanda  MSME  Paul Neitzel  Visualization and Quantitative Measurements of Flow Within A Perfused Bioreactor  Georgia Tech

Weiland, Nathan  MSME  Ben Zinn  Nonthesis  Purdue University

Wiggins, John S.  MSME  Thomas Kurfess  Design of a PC-Based Open Architecture Machine Tool Controller  U. S. Naval Academy

Yao, Qizhou  Ph.D. ME  Jianmin Qu  Modeling and Characterization of Interfacial Adhesion and Fracture  West Virginia University

Zhai, Jun  Ph.D. ME  Min Zhou  Micromechanical Modeling of Dynamic Fracture In Heterogeneous Materials  Shanghai Jiao Tong University, China

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To show how good the job market is for graduates of the Woodruff School, here is an anecdote from School Chair, Ward Winer: "It was interesting to talk to students about their job or graduate school plans. An indication of how strong the job market is for our graduates is the fact that a number of students had not bothered to interview or look for jobs a week before graduation. They are so confident about the job market that they believe they can get a good position as soon as they decide to do so. Interestingly, some students who had made commitments reported receiving signing bonuses and the use of an automobile. Things were certainly not that way when I graduated."

The reported starting annual salary in 1999 for mechanical engineering was: BSME $43,900; MSME $54,600; Ph.D. $59,400. For nuclear engineering it was $47,700 for those with a bachelor's degree. The average reported starting annual salaries for all the schools in the College of Engineering was $44,381 for those with a bachelor's degree; $51,920 for the master's degree; and $64,500 for the doctoral degree. The numbers reflect only those students who reported the salary information to Career Services which is not a high percentage. The data for this past academic year is not yet available.
The Woodruff School maintains a vigorous publication schedule and a rigorously updated web page. All of our publications are maintained in two versions: print and online. You may obtain a hard copy of any publication or view them first online (see Publications). Copies of most of our older publications are also kept on hand.

Publications
All publications produced by the School since 1997 are on our home page. Major publications during the past academic year are pictured here. In addition, a number of items are in various stages of production. Check our home page for publication information.

Our Home Page: http://www.me.gatech.edu
The School's web site has undergone a number of significant changes in the past academic year. A copy of our home page is printed here to offer our readers a sense of the breadth of the on-line coverage.

As part of our new on-line services, we added more than 100 résumés of our doctoral students. Open Ph.D. Student Résumés. These graduate students are between twelve to eighteen months from the completion of their degree and are seeking jobs in academia or industry. If you prefer a printed copy of these résumés, they are available from the
Woodruff School Graduate Office. Please contact any of these students directly to talk with them or bill.wepfer@me.gatech.edu to discuss something about the graduate program.

In November 1999, the Woodruff School's Graduate Application packet was placed on our home page. See the Graduate Buzz or the Graduate Programs page.

We also opened a Video section and added additional webcasts: the 2000 Woodruff Distinguished Lecture by Dr. William Wulf (see the George Woodruff icon) and the Symposium on Women in Engineering (see the NAE bridge icon). In addition, we have a narrated slide show in About the Woodruff School.
For fiscal year 2000 (July 1, 1999 to June 30, 2000), the Woodruff School's finances were reflected in the number of grants and contracts received from external sources, the budget of the School (state support), and the revenue generated from the Woodruff Endowment. These categories break down as given below. Detailed information on any of these categories is available from the School's Director of Finance, Pete Dawkins, at (404) 894-7400.

### Grants and Contracts

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Total new funds received on external/internal grants and contracts active during fiscal year 1999 (includes endowment revenue)</td>
<td>$24,011,526</td>
</tr>
<tr>
<td>Endowment and externally funded grant and contract expenditures</td>
<td>$19,825,458</td>
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<tr>
<td>Internally funded grant expenditures</td>
<td>$499,065</td>
</tr>
<tr>
<td>Total grant, contract, and endowment expenditures</td>
<td>$20,324,523</td>
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### Number of Grants, Contracts, and Proposals

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
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<tbody>
<tr>
<td>Total number of active (external/internal) grants and contracts (includes endowment accounts)</td>
<td>513</td>
</tr>
<tr>
<td>Number of proposals submitted to external agencies</td>
<td>147</td>
</tr>
<tr>
<td>Number of externally funded grants, contracts, and endowments receiving new funds</td>
<td>256</td>
</tr>
<tr>
<td>Number of internally funded grants receiving new funds</td>
<td>26</td>
</tr>
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### School Budget

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>State support</td>
<td>$11,576,236</td>
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<tr>
<td>Sponsored grant support</td>
<td>$16,843,828</td>
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<tr>
<td>Total budget</td>
<td>$28,420,064</td>
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### Endowments

<table>
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<tr>
<td>Total endowment (market value principal)</td>
<td>$65,620,606</td>
</tr>
<tr>
<td>Endowment-generated revenue available for expenditure</td>
<td>$2,799,081</td>
</tr>
</tbody>
</table>
a Includes direct costs, fringe benefits, and overhead, where applicable.
b Includes direct costs and fringe benefits (overhead, if applicable).
c Includes direct costs but not overhead.
Funds from the George W. Woodruff Trust continue to provide for the enhancement of the School of Mechanical Engineering. George W. Woodruff received his degree in mechanical engineering in 1917. He served as a trustee and trustee emeritus of the Georgia Tech Foundation from 1941 until his death at the age of 91 in 1987, and he received the Alumni Distinguished Service Award in 1963. In addition to providing a significant endowment for the School of Mechanical Engineering, his contributions to Georgia Tech provide National Merit Scholarships and scholarships for student athletes in nonrevenue producing sports and are an ongoing source of unrestricted support for the Institute. The market value of the Mechanical Engineering Woodruff Endowment on July 1, 1999 was $50,098,728. The endowment generated $2,123,237 that was available to the Woodruff School to update and enrich our programs. The expenditures may be categorized as follows: faculty, students, facilities, lectures and seminars, staff, publications, and general projects and supplies. A specific breakdown of the use of these funds includes:

**FACULTY**

- Funds from the Woodruff Trust are used to endow the George W. Woodruff Chair in Mechanical Systems. This chair is held by Dr. Jerry H. Ginsberg, Professor of Mechanical Engineering.
- Funds developmental leaves, travel, and equipment for faculty.
- Funds the Woodruff Faculty Fellows Program, which encourages young professors to build their careers at Georgia Tech by providing seed money ($10,000 per year) for research projects and other discretionary activities. The award is given for a five-year period. In the past academic year, the faculty fellows were: Steven Liang, Jianmin Qu, and Cheng Zhu.
- Partially supports the School’s participation in the Georgia Tech Lorraine Program at Metz, France.
- Provides funds for the yearly Faculty Retreat. The retreat was held at Aberdeen Woods Conference Center in Peachtree City, Georgia.
- Ads for various faculty openings, such as for the Woodruff Chair in Thermal Systems.

**STUDENTS**

- During the course of the academic year, approximately 133 graduate student semesters were funded for research and teaching assistants in the Woodruff School; they receive an average of $5,775 a semester.
- Awards Woodruff Graduate Fellowships to outstanding Ph.D. students; currently there are 83 holders of these fellowships. See Fellowships for a listing of these students.
- Provides funds for the Woodruff Doctoral Teaching Program, which enables graduate students interested in academic careers to team-teach with a senior faculty member; three graduate students (Stephanie
Kladakis, Brents Ring, and Charlotte Song) participated in this program in the past academic year.

- Provides funds to recruit new graduate students to the Woodruff School. This includes four recruiting weekends in which potential graduate students are brought to campus for a full weekend of activities.
- Funds the ME Spring Banquet, a yearly gathering of students, staff, and faculty to recognize the accomplishments of Woodruff School students and to honor the Woodruff School's Annual Distinguished Alumnus and the Outstanding Educator.
- Partially funds student organizations such as GT Motorsports and GT Off-Road (Mini Baja Team).
- Funds the end-of-semester meeting of graduate students finishing their degrees with the Associate Chair of Graduate Studies and others in School administration to evaluate the program.
- Provides funds for the Résumé Book, a yearly presentation of the résumés of doctoral students at the School who are close to finishing their degree and are seeking employment.
- Provides partial financial support for participants in the Georgia Tech Lorraine program.

FACILITIES

- * Funds general provisions for various research labs, including labs in the Love Building and partial renovation of the Neely Building.
- Provides funds to improve and furnish School facilities, including computer projection equipment in three instructional rooms and upgrading machine tools.
- Provides funds to obtain remote computer system access for faculty, staff, and some graduate students.
- Funded a hospitality suite and an exhibition booth at the American Society of Mechanical Engineers (ASME) International Meeting and Exposition in Nashville, Tennessee.

LECTURES AND SEMINARS

- Funds activities associated with the the Annual Woodruff Distinguished Lecture Series.
- Provides support for the Woodruff Seminar Series. These funds allow the Woodruff School to bring in well-known scholars to present a seminar and interact with the faculty in small groups.
- Provided some funds to support the National Academy of Engineering Regional Symposium on Why Don't More Women Choose Engineering as a Career.

PUBLICATIONS AND PUBLIC RELATIONS

- Funds the design and production of all Woodruff School publications.
- Placement of various event ads in The Technique, the Georgia Tech student newspaper.
- Photographic sessions in various Woodruff School faculty laboratories and research sites and photography for various School events.
- Purchase of a digital camera for the School for use at events, meetings, workshops, and for web-related items.

MISCELLANEOUS PROJECTS
Purchase of various software programs for web use and preparation of PowerPoint shows.
- Provides funds for the Woodruff School Advisory Board meetings.
- Funds for the design and production of tee-shirts, tote bags, and mouse pads for new and potential graduate students and guests.
- Money to maintain the Pi Tau Sigma (the mechanical engineering honorary organization) National Office.
- Purchase of gifts for lecturers, special guests, and retirees.

SPECIAL PROJECTS

- Provided funds to research and prepare the nomination of the Woodruff School as an ASME Mechanical Engineering Heritage Site, including the help of an HST graduate student for spring and summer 1999 terms to do research.
- Travel funds to attend the National History and Heritage Committee Meeting and the ASME meeting in Nashville to defend the nomination.
- Copying, binding, and mailing of the successful nomination packet to a selected mailing list.
- Funds to improve office equipment.
- Provides support to purchase computers for offices and laboratories.

PERSONNEL

- Provides funds for various personnel in the Woodruff School, including the Director of Communications, the Director of Special Projects (to coordinate the move to the Love Building), and three Academic Professionals (Director of the Frank K. Webb Professional Communications Program, the instructor for ME 1770 (Engineering Graphics and Visualization), and the Associate Director of Georgia Tech Lorraine).

TRAINING

- Funds for both off-site and on-site staff training programs.
THE WOODRUFF SCHOOL REACHES GOAL!

The Woodruff School proudly announces that we have passed our goal and as of June 30, 2000 we have raised $30,618,764 from over 370 donors. "This has been an incredible year. The generosity that our alumni, friends and corporate partners have bestowed on us is amazing" said Ward Winer, Chair of the Woodruff School.

The major highlight of our development year happened last October when Mrs. J. Erskine Love, Jr. and the Love family decided to celebrate the 50th anniversary of J. Erskine Love, Jr.'s (ME'49) graduation from Georgia Tech. To honor Love's 50th reunion they committed $5 million to name the J. Erskine Love Jr. Manufacturing Building in his memory. See the accompanying article for all the details.

Georgia Tech's overall campaign has been very successful. Last Fall the Georgia Tech Foundation trustees voted to raise the goal from $500 to $600 million after reviewing recommendations proposed by President Wayne Clough and campaign chairman and former Phillips Petroleum chairman Pete Silas. This is the 3rd goal increase in the campaign that draws to a close on December 31, 2000. As of June 30, 2000 the overall total was $533,900,000.

It is not too late to add your name to our list of donors. For a full briefing on programs you can support, please contact Caroline Gaines Wood at (404) 894-0762 or e-mail her at caroline.wood@me.gatech.edu.
NEW BUILDING NAMED IN MEMORY OF J. ERSKINE LOVE JR.

J. Erskine Love, Jr. (ME 1949) was one of Tech's most dedicated alumni. Love helped lay the foundation for Georgia Tech's private fundraising efforts and he was serving as chair of the Centennial Campaign Steering Committee when he died unexpectedly in 1987.

To honor Love's 50th reunion, the Love Family and their foundation have committed $5 million to name the Manufacturing Related Disciplines Complex-II in his memory. The funds will establish a permanent, named endowment within the Woodruff School.

"Erskine said many a time that much of his success in life was the result of his Tech education," says Love's wife, Gay. "It cost him so little and gave him so much." She adds that Love himself would probably shy away from seeing his name grace a building, admitting, "That was my choice."

Income from the endowment will be used to support education and research programs in manufacturing related subjects, including interdisciplinary research among faculty and students in mechanical, chemical, electrical and computer, and industrial and systems engineering. The funds will also support faculty retention and junior faculty development, general facilities, and undergraduate and graduate students.
School Chair Dr. Winer is extremely pleased with the Loves' commitment. "This is fantastic! We are honored that the Love family chose the Woodruff School to receive this significant gift," he says. "The funds will help us to advance not only our education and research programs, but also our commitment to engineering. I once had the pleasure of meeting Erskine, and was struck by what a leader he was among his colleagues at Georgia Tech. He was a cherished alumnus, and his family members have, in turn, become treasured friends. We look forward to the spring when we will dedicate this very important building."

Erskine Love was founder of Printpack, Inc. which began as a small manufacturer of unprinted cellophane bags for local food companies and has grown into one of the largest companies in the flexible packaging industry. The company is now run by their five sons - Dennis, Jimmy, Bill, Keith, and David - with support from their mother and chairman of the board, Gay. Daughter Carol Anne Love Jennison also serves as a board member.

In addition to leading Tech's Centennial Campaign, Love was a trustee of the Georgia Tech Foundation, and served as its president from 1981 to 1983. He was also a trustee of the Alumni Association, and he is credited with being one of the founding members of the Thousand Club. Love received the Alumni Distinguished Service Award in 1986, and the Outstanding Young Alumnus Award in 1963. Gay Love, a graduate of Duke University, was named an Honorary Alumna at Georgia Tech in 1989.

**ALUMNI HONORS**
Four alumni were inducted into the College of Engineering Hall of Fame at the College of Engineering Alumni Awards Induction Ceremony on October 22, 1999. This designation is the college’s most prestigious award and is based on life-long career accomplishments. The alumni inducted were **Thomas S. Lucas (BME 1947)**, **Arturo**
Rodriguez-Ulloa (BME 1933), A. Chester Skinner, Jr. (BME 1943), and David I. J. Wang (MSME 1952).

Four mechanical engineering alumni were honored with selection into the Academy of Distinguished Engineering Alumni of the College of Engineering. The award is intended for alumni who have sustained and made distinguished contributions to Georgia Tech, the profession, or the society at large. The 1999 group included: Jose Estrada (BSME 1963), Joseph K. Tannehill (BME 1955), John H. Tundermann (BME 1963, MSME 1964), and F. Thomas Tuttle (BME 1964).

Carter N. Paden, Jr. (BIM 1951) was nominated by the Woodruff School to receive the Georgia Institute of Technology Honorary Engineering Award for his work in the engineering field.

In addition, three of the School's young alumni were inducted into the Council of Outstanding Young Engineering Alumni. Membership is reserved for those individuals under the age of 40 who have distinguished themselves through professional practice and/or service to Georgia Tech. The 1999 group included: Deborah K. Beattie (BESM 1989, MSME 1994, Ph.D. ME 1996), Kennon H Guglielmo (MSME 1990, Ph.D. ME 1992), and Julie Miller (MSME 1984).

Figure caption: Top Row (Left to Right) John Tundermann, Joseph Tannehill, Thomas Tuttle, Debbie Beattie, Julie Miller, Kennon Guglielmo, and Ward Winer. Bottom Row (Left to Right) Carter Paden, Arturo Rodriguez-Ulloa, Chester Skinner, and Thomas Lucas. Not shown: Jose Estrada.
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The Woodruff School Advisory Board meets annually, usually in the fall. Members are invited to join the Board so that its composition reflects the varied scope of mechanical engineering in industry, the health-related professions, and the academic community. The Advisory Board recommends strategic direction for the School, suggests broad-based curriculum revisions, and consults with the Chair and faculty on issues that are important to the Woodruff School.

Topics of discussion at this year’s meeting included an overview of the past academic year in the Woodruff School by Dr. Ward Winer; a presentation by Mr. Robert Mabrey about the new Engineering Graphics and Visualization course (ME 1770); a discussion and demonstrations on the new on-line master’s degree courses in mechanical engineering by the faculty members teaching the courses; a proposal on the Student Leadership Program by Drs. Raymond Vito and Ward Winer; and an update on the Campaign for Georgia Tech by Ms. Caroline Wood, Director of Development.

We again scheduled the Gegenheimer Lecture on Innovation a day before the Advisory Board meeting. This gave us the opportunity to have a dinner to honor the members of our advisory board, Harold Gegenheimer and the representatives from the Baldwin Company. Dr. Winer presented a slide show detailing the history of Mechanical Engineering at Georgia Tech and the story of the Woodruff School today. The presentation was well received.

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The covers show the new J. Erskine Love Jr. Manufacturing Building, which houses Woodruff School research groups in acoustics and dynamics; fluid mechanics; heat transfer, combustion, and energy systems; and microelectromechanical systems.

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