For the first time since 1996, when the School's web site was first posted, the Woodruff School's web site was completely revamped with a new, modern design, many new features, and user friendly pages created especially for audiences outside of Georgia Tech. Visit www.me.gatech.edu to see the results. It is still a work in progress with many of the sections still incomplete or being modified.

The masthead design gives prominence to both Georgia Tech and the Woodruff School and provides a common framework for our three sites. The two other major sites that we maintain: www.nre.gatech.edu for the nuclear and radiological engineering program and www.mp.gatech.edu for the medical physics program will be updated soon.

The site is easy to navigate, with all pages designed for low maintenance. The two-level navigation bar leads to information About the School, Undergraduate Programs, Graduate Programs, Faculty & Staff, Research, News & Events, Employment, Alumni, and Giving to Tech. In addition, the entire site is searchable and archived files have a site-specific search capability, so that a search can be restricted to a very small range.
AN IMPORTANT ANNOUNCEMENT

On November 1, 2006, Dr. Ward O. Winer, School Chair, made the following announcement: This note is to confirm for all the School an announcement that I made at the faculty meeting this afternoon. I have informed Dean Giddens that I intend to retire at the end of next May (2007). I have enjoyed my time as School Chair and still enjoy 95 percent of what I do. This is a great place and a great group to work with. I have decided that I want to have more control over my time for the time I have left, and the typical work week of a School Chair doesn’t give me enough time to do many of the other things I would like to do. Thanks to all of you for your support of the School and of me as School Chair.

[Dean of Engineering Don Giddens appointed Dr. Gary May, Chair of the School of Electrical and Computer Engineering, to chair the search for Dr. Winer’s replacement. A committee consisting mainly of Woodruff School faculty, with representation from the Staff, Students, and Alumni was formed.]

A Message from the Chair

WARD O. WINER

Once again, we are pleased to bring you an issue of mega tech. Since this is my last introductory letter for the newsletter, I cannot help but reflect on my thirty-eight years at Georgia Tech and my nearly twenty years as chair of the Woodruff School of Mechanical Engineering. The changes here have been extraordinary.

The size and quality of just about anything you would care to measure have increased and improved phenomenally. When I first came to Georgia Tech in 1969, Mechanical Engineering had about twenty-five faculty members. We now have about 100 faculty when one considers tenure-track faculty, academic professionals, and research faculty. Our support staff has increased from about eight to fifty. The number of graduate students has grown by a factor of ten. Not only has the size increased, but the quality and stature of our program has also improved substantially. In 1972, the National Research Council ranked graduate programs. Mechanical Engineering at Georgia Tech was ranked somewhere between twenty-sixth and fiftieth; it was not possible to tell exactly where we were ranked because that group was listed alphabetically. In the most recent U.S. News & World Report, our undergraduate program was ranked 6th and our graduate program was 7th. These are extraordinary changes over a short period of time, especially because academic reputations are very difficult to change and have enormous inertia.

Why have we been so successful? Because we have had outstanding support from the Institute, the State of Georgia, and, most particularly, from our alumni and friends. The George Woodruff Endowment has made a fantastic difference in what we can accomplish in the Woodruff School.

In addition, we have a number of other significant endowments, both for chairs and for programs in the School, that help considerably in our ability to enrich our programs. In 1988, when I became chair, we had two endowed chairs and three professorships. Today, we have ten endowed chairs and five professorships. In addition, we have the Woodruff Faculty Fellows program for eight outstanding mid-career faculty members who we work hard to recruit and retain. We support a number of grants for Graduate Research Assistants that help us attract top graduate students. We are also able to have a number of exciting special events such as the Woodruff Distinguished Lecture, the Gegenheimer Lecture on Innovation, the Distinguished Alumni Program, the Jack Zeigler Outstanding Educator Program, and the Frank Webb Program in Professional Communication, to mention a few.

In terms of academic programs available to our students, we have become a major participant in Georgia Tech Lorraine at both the undergraduate and graduate levels, in a number of other international opportunities for our students, and in the undergraduate and graduate programs at Georgia Tech Savannah. We now offer enough courses online for distance-learning students to earn a master’s degree in mechanical engineering or medical physics completely online.

In 1988 when I became chair, the endowment of the Woodruff School was about $3,000,000. Today it has reached $100,000,000, which makes a big difference in the kinds of programs and activities we are able to offer our students. The increase in endowments for the School is not only the result of many gifts, but also the astute investment policy on the part of the Georgia Tech Foundation.

We now have activities in nine different buildings on campus. Four of the buildings contain the vast majority of the space and are all new since 1992, thanks to the generosity of the State of Georgia. Over the past few years, enrollment in both our mechanical engineering and nuclear and radiological engineering programs have increased substantially, to where we are now the largest mechanical engineering and probably the largest nuclear engineering program in the country, and the largest undergraduate program at Georgia Tech. The quality of the students we are able to attract is outstanding.

(continued page 2)
I have been asked what I consider my greatest success as school chair. Without hesitation, I would say it is the fact that we have been able to hire excellent faculty and staff. It is these people who attract outstanding students, which results in outstanding alumni, which, in turn, makes the reputation of the School.

The position of chair in the Woodruff School has changed a great deal since I started in 1988. At that time, the secretary handled all the mail, opening and dealing with most of it before it ever got to me. Today, very little mail comes in as hardcopy. Virtually all of it comes in as email, and it is enough to overwhelm a person trying to keep up with it. Another very big change over the past twenty years is the level of scrutiny and self-evaluation that takes place in the academic world. The reappointment, promotion and tenure process is much more structured and rigorous. We now have periodic peer review in which tenured faculty members undergo a review by their colleagues every five years. The quality and evaluation of teaching has increased significantly over the past two decades, and I am pleased to say that based on student evaluations, the quality of teaching is very good. Another thing that has changed over the years is my ability to maintain a research program. I did reasonably well, I think, for the first ten years, but then it began to taper off because of the chair workload. I graduated my last Ph.D. student about two years ago. The job of chairing a school of this size makes it difficult to maintain a personal research program and do a good job of caring for the school.

Although we have accomplished a lot, I am disappointed that there are a number of ideas that I have not succeeded in accomplishing. I hoped to get a faculty development endowment of $1,000,000 to support study leaves for faculty. We have a start on the program, but we are a long way from the goal. I also wanted to start a student professional development program that would be similar to our very successful Frank Webb Communications Program. I believe it would take a $2,000,000 endowment to maintain the personnel and activities that I envision for this program. We were fortunate enough to secure two, one million dollar charitable remainder trusts from two very supportive alums for this program, but it will be several years before the money becomes available to implement the program.

I am very optimistic about the future of the Woodruff School. We are on a roll. We have outstanding faculty, staff, and students, and are in a very important area of technology for the future. Many of the important technology issues facing society will be solved by contributions from mechanical engineers and nuclear engineers. I am confident that our faculty will keep their focus on good classroom teaching, graduate student mentoring, and pursuing cutting-edge, frontier research.

In closing, let me say that I am very pleased to have played a role in the Woodruff School of Mechanical Engineering at Georgia Tech. I have enjoyed my time on the faculty and particularly my time as chair of the school. It has been an honor to serve in this role. I look forward to hearing great things from the Woodruff School in the future. Thanks for your support.

Cheers!

Ward O. Woodruff

GEORGE W. WOODRUFF DAY

We held the first-ever George W. Woodruff Day, a celebration of the life and generosity of George W. Woodruff. Students receiving scholarships and fellowships from the Woodruff Endowment were invited as well as the holders of the two endowed chairs and the faculty fellows. Mrs. Missie Pierce, granddaughter of George Woodruff, introduced her grandfather to an audience who had never met him.

Mrs. Pierce told us that “when George Woodruff was born in 1895, the Cotton States and International Exposition drew thousands of visitors from around the world to Piedmont Park to witness the latest advances in technology. From then on, the Woodruff family did their part through the development of industries and business ventures to help transform the South. George’s daddy, Ernest, became president of the Trust Co. of Georgia (now SunTrust Bank) in 1904. The Woodruff family had traditionally worked with the development of mills for the region’s crops and to increase the size of the lumber industry. George’s mother’s family — the Winships — developed one of the most important iron foundries in the deep south. George would combine both heritages to become an engineer and astute businessman. He went to high school at Tech High in Atlanta. War broke out and his junior year at Georgia Tech was interrupted. He joined the Emory Medical Corps.

He then worked in a Savannah shipyard as a mechanic and draftsman. He married Irene King in 1918. At the end of the war, they moved back to Atlanta, and he got a job with Atlantic Steel Company, where he drafted plans for new equipment designs and machine overhauls. Then he worked at the Atlantic Ice Co.

In 1919, George’s father bought the Coca Cola Co. from Asa Chandler’s family for $25 million. The company’s staggering growth worldwide and success increased the wealth of the family and thus provided the philanthropic capital which later improved the entire region educationally, medically, and culturally.

As a civic leader, George Woodruff was involved with the Board of Directors of the Coca-Cola Co. (for 41 years), West Point Pepperell, Atlantic Steel Co., and Trust Co. of Georgia. Both Emory and Mercer Universities awarded him honorary doctorate degrees.

Even though he never returned to college to formally graduate because of the war, George Woodruff believed that education was the key to an individual’s success. He thought that education was the one thing that you can give someone that no one can ever take away. George and his older brother, Robert, combined their parents’ assets to form a large charitable foundation. Woodruff philanthropic money continues to help schools, universities, cultural centers, and hospitals across the state of Georgia. We continue to benefit from his generosity and wisdom to incorporate his strong values into the importance of education.”
IN MEMORIAM: HAROLD W. GEGENHEIMER

Harold W. Gegenheimer, a generous supporter of the Woodruff School, passed away in October 2006. We reprint here the biographical sketch that we updated and used each year for the Gegenheimer Lecture program.

Harold W. Gegenheimer was associated with the printing industry all his life: As a machinist, machine design engineer, inventor, product development manager, and corporate chief executive. He was the Chairman Emeritus of the Baldwin Technology Company, an international manufacturer of material handling, press accessory, and prepress equipment for offset printing.

His father, William, started the Baldwin Company in 1918 in a small building next to their house in Baldwin (Long Island), New York. He invented the Baldwin Press Washer and the company emerged as a manufacturer of printing press accessories and controls.

Harold always took an interest in things mechanical, so it was natural that he came to Georgia Tech, where he received his bachelor’s degree in mechanical engineering in 1933. Later, he invented the Convertible Offset Perfecting Press, a feature used by most press manufacturers that allows for one or more colors to be printed on both sides of the paper with just one pass through the press. His inventions, for which many United States and foreign patents have been obtained, were keys to the great growth of the offset printing process after World War II.

Mr. Gegenheimer was President of the National Printing Equipment and Supply Association from 1977 to 1979. He was an officer or director of other industry associations and the recipient of numerous technical and educational awards. In 1983 he was elected Graphic Arts Man of the Year. In 2003, he received the Harold Falk Distinguished Alumnus Award from Chi Psi fraternity for outstanding accomplishments.

Mr. Gegenheimer was a long-time contributor to Georgia Tech’s Thousand Club, served as co-chair of his 50th Reunion Committee, and was the recipient of the 1996 Woodruff School Distinguished Alumnus Award.

An endowment given to the Woodruff School in 1995 by Mr. Gegenheimer established the Harold W. Gegenheimer Lecture Series on Innovation. His endowment supports 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. As an inventor, Mr. Gegenheimer always expressed an interest in the great advances made at his alma mater through innovative programs that link industry with graduate and undergraduate studies. His endowment supports the School’s display, Patents of the Woodruff School Faculty, which features Mr. Gegenheimer’s twenty patents and more than 175 U.S. patents of current Woodruff School faculty.

THE GEGENHEIMER LECTURE ON INNOVATION

The Gegenheimer Lecture on Innovation was given by Mark D. Jenks, 787 Wing, Empennage and Landing Gear Team Leader for The Boeing Company to a packed house in Georgia Tech’s Ferst Center for the Arts in December 2006. He talked about the development of Boeing’s 787 Dreamliner, which represents a breakthrough in aerospace structures technology with the first-ever composite fuselage and wing, and the creation of a new business model for global collaboration.

The plane is now in initial production with the fabrication of the first major structures at seven major production sites around the world and the start of major assembly of the wing in Japan. Boeing assembled a network of the world’s leading aerospace firms to participate in the early development process and to take primary responsibility for the detail design and manufacture of large integrated volumes of the plane. These highly integrated partnerships have lead to vastly improved efficiencies through technology sharing as well as leveraging the differences in company and national cultures and their varied approaches to problem solving.

Mark Jenks has worked for Boeing since 1983. In his current position, he leads the international team responsible for design, manufacture, certification and delivery of the wing, empennage, and landing gear for the 787. Prior, he was director of Technology Integration for the Sonic Cruiser Program, Chief Engineer and Deputy Program Manager for the International Space Station, and Manager of the Helicopters Division Development Center. He holds B.S. and M.S. degrees in Aeronautical Engineering from Rensselaer Polytechnic Institute, and M.S. degrees in Management and Materials Engineering form MIT.

To listen to this lecture, go to our web page at www.me.gatech.edu and click on the Gegenheimer Lecture icon.

ASME MEETING IN CHICAGO

The Woodruff School had a booth in the Chicago Hilton at the American Society of Mechanical Engineers (ASME) Conference and Exposition. Although there were fewer booths than in past years, we still had large numbers of attendees stop by to talk about graduate school and mechanical engineering at Georgia Tech. Many of our successful alumni, with positions in academia and industry, stopped by for a visit. We enjoyed talking with you all.

Dr. Ward Winer became an Honorary Member of the ASME for forty years of research and leadership in the science and engineering of tribology, for innovative leadership in ME education, and for fostering interdisciplinary programs, and the advancement of international programs at Georgia Tech.
BOB NEREM NAMED ZEIGLER OUTSTANDING EDUCATOR

Dr. Robert M. Nerem was named the Woodruff School’s 2006 Jack M. Zeigler Outstanding Educator in recognition of his pioneering achievements in establishing the discipline of biomedical engineering at Georgia Tech and for having a profound influence on its development in the United States. In his acceptance speech, Professor Nerem inspired the audience with his Rules of Life: The Planet Earth School:

- In this school there are no such things as mistakes, only lessons. An unsuccessful experiment does not represent failure, it is just a learning experience; often one learns more from these experiments than from successes.
- Always be open in the widest possible way to encountering a new person or to a new opportunity, as these represent new teachers and new learning experiences; someone once said, leave the screen door (separating the outside world and you) unlatched, you never know who or what will walk in.
- If you encounter a closed door, simply look for another door that might be open; life is filled with a lot of paths and doors to walk through, don’t waste time on a door that is closed.
- Your life is up to you; at birth you were given a body and an inner self which represents a canvas onto which you have the opportunity to paint your life; take charge of your life and the painting of this picture because if you don’t someone or something else will.
- People will remember not what you said, but only how you made them feel.
- Remember that the cup is always half full, never half empty.
- Look for the good in people; try to imagine the world as it seems to the other person.
- Never, never worry about something over which you have no control.
- Whatever happens, place the least dramatic interpretation on the event, the incident, and/or whatever is said.
- Never have expectations, only hopes, and welcome each and every new day for each dawn is a new beginning.
- If someday, why not now; but remember, the impossible may take a while.
- Life’s journey isn’t to arrive at the grave safely in a well-preserved body, but rather to skid in sideways, worn out, shouting —holy cow, what a ride!

PAT EPPS (BME 1956) NAMED WOODRUFF SCHOOL OUTSTANDING ALUMNUS

Mr. Pat Epps was recognized for an outstanding career by being named the 2006 Woodruff School Outstanding Alumnus. In his acceptance speech, he told the gathered students about his life in flying. “You never graduate, you get out. To get out of Georgia Tech you need discipline; an ability to analyze; and persistence. I graduated from Tech one day, got married the next, and went to work a few days later. I never thought about owning an airline. Opportunities will come to you, but you will be prepared for whatever comes your way because of your degree from Georgia Tech. It’s Management 101: the only reason you’re on top is because someone’s holding you up. Don’t wait too long to see what happens, make things happen.”

Pat Epps graduated from Georgia Tech in 1956 with a degree in mechanical engineering. After graduation, he headed west to work as a flight test engineer for Boeing in Seattle on the prototype of the 707, America’s first jet airliner. He entered the U.S. Air Force in 1957 and began flight training. As a distinguished graduate of Class 58L, he became the fifth of Ben Epps’ sons to become a military pilot. Assigned to transports, he first was a Co-Pilot with MATS in the Pacific on the Boeing C-97 Stratofighters and later an Instructor Pilot in the Fairchild C-123. Epps has more than 9,000 flying hours as a commercial pilot with type ratings in the North American B-25 Mitchell, Douglas DC-3, Learjet, and Cessna Citation.

In June 1994, Mr. Epps piloted a friend’s DC-3 to France. As he flew over Normandy, veteran World War II paratroopers jumped to commemorate the 50th anniversary of the D-Day landings. Epps has been in Rotary more than 30 years and on the Board of the Georgia Aviation Hall of Fame since its inception.

For fun, he flies his acrobatic Beechcraft Bonanza in local air shows and tells tales of his adventures during an ill-year quest to recover the “Lost Squadron,” the spectacular recovery of a WWII Lockheed P-38 buried beneath 265 feet of the Greenland ice cap.

Mr. Epps started Epps Aviation at Peachtree DeKalb Airport in Atlanta in 1965, growing it from nineteen to almost two hundred employees. He said, “I’ve worked for forty years with no promotion.”

GT LORRAINE HAS A NEW PRESIDENT

Yves Berthelot, Professor of Mechanical Engineering, was chosen as president of Georgia Tech Lorraine. This position became vacant upon the departure of Provost Jean-Lou Chameau, who became President of the California Institute of Technology. This appointment is in addition to his responsibilities as director of the program. As director, Berthelot oversees all administrative, operational, and financial responsibilities for all research and academic programs at GTL, and coordinates operational relations with local and national institutions in France. GTL is beginning to take steps toward implementation of its five-year strategic plan. Georgia Tech Lorraine is poised for substantial growth in the next few years, Berthelot said. “Such growth must be thoughtfully planned.”
Lalit Kumar Bohra received a Graduate Student Grant-in-Aid from ASHRAE for his work on the fundamental understanding of heat and mass transfer in the ammonia-water absorber. Dr. Srinivas Garimella is his advisor.

Matthew Determan received an ASHRAE Graduate Student Grant-in-Aid for his work on a miniature cooling system that could make it possible to safely transport biological tissue and organs to remote areas without electricity. Dr. Srinivas Garimella is his advisor.

Eric Deutsch won the Tau Beta Pi Senior Engineering Cup for 2006-2007 as well as the Woodruff School Outstanding Scholar Award.

Sead Dzebo, Carla Uribe, and Sanjeev Heda each won Samuel P. Eschenbach Memorial Awards in Mechanical Engineering.

Alfred Frith won the Woodruff School Chair’s Award.

Donavon Gerty is a first-year ARCS scholar. His research concentrates on implementing forced convective cooling for small-scale electronic devices; Dr. Ari Glezer is his advisor.

Shelby Highsmith, Jr. is a first-year ARCS scholar. He won the ASTM Committee E08 and Fatigue and Fracture Student Presentation Competition. Dr. Steve Johnson is his advisor.

Joshua Inouye, Ryan Kane, Joshua Mackanic, Jeffrey Schlosser, and Damien Valentì each won a Richard K. Whitehead Jr. Memorial Award.

Jesse Killion will receive the International Institute of Refrigeration (IIR) Sadi Carnot Young Investigator Award at the 2007 International Congress of Refrigeration in Beijing, China. This award, given to researchers under the age of 35, is for outstanding contributions in the area of thermodynamics. Dr. Srinivas Garimella is his advisor.

Timothy P. Kochler is a first-year ARCS scholar. His research focuses on characterizing thermocapillary effects in thin liquid layers. Drs. Said Abdel-Khalik and Minami Yoda are his advisors.

Matthew Kontz is a first-year ARCS scholar. Dr. Wayne Boek is his advisor.

Charlotte Walker Kotas is a fourth-year ARCS scholar, whose research explores the role of fluid flows in hearing. Dr. Peter Rogers is his advisor.

Ambarish Kulkarni received a 2006 Science Applications International Corporation Student Paper Competition Award. Dr. Min Zhou is his advisor.

Anne-Marie Lerner received a Graduate Teaching Fellowship from the ASME. She is also a fourth-year ARCS scholar, working on vibration control. Dr. Ken Cunefare is her advisor.

Captain Chris McCall spent the second half of the fall semester just outside of Djibouti (Africa) as part of an ongoing stabilization and security effort. Chris flew his HC-130 around the region, including airlift missions to Yemen, Uganda, Kenya, and Ethiopia. His most rewarding missions were the medical evacuation of a solider who had suffered a heart attack while downrange and the airdropping of a funeral wreath that memorialized a squadron mate who passed away after returning home.

When he wasn’t flying, sleeping, or eating, he was most likely working on ME 6101 (Engineering Design), which he was doing through the distance-learning program. He accomplished the bulk of the coursework while in Africa, and saw striking similarities between design and tactical flying. At their roots, he said, “both are ultimately processes of making decisions correctly and in the correct sequence”. As with his flight training, he realized how much was left to learn.

Jessica Remmert won a Department of Energy NDSEG fellowship. Dr. Jens Karlsson is her advisor.

Jeff Schlosser won an NSF Graduate Research Fellowship. He has been doing undergraduate research with Dr. Chris Paredis for the past two years.

Joshua Vaughan received a Graduate Teaching Fellowship from the ASME. Dr. Bill Singhose is his advisor.

Jaime Zahorian participates in the STEP (Student Teacher Education Partnership) Program through CETL (Center for Teaching and Learning). He spends every Thursday at Marietta High School helping out with physical science and AP biology as well as running the Engineering Club. Jaime says the club has grown quite a bit this school year, and “it is just a little proof that engineers are not quite as introverted as we may seem or that we spend 24-7 in a lab, even if we wish we could.”

FOCUS 2007

The sixteenth anniversary of the FOCUS program at Georgia Tech was held in conjunction with celebrations for the Martin L. King, Jr. national holiday in January. The purpose of the program is to attract a diverse and talented pool of minority students and encourage them to pursue undergraduate and graduate degrees and academic positions at Georgia Tech and nationwide.

FOCUS Fellows encourages minority doctoral students who are one or two years away from graduation to consider an academic career. Sam Graham (2002 Fellow) and Tequila Harris (2006 fellow) are both assistant professors in the Woodruff School.

**FACULTY NEWS AND HONORS**

Said Abdel-Khalik, Southern Nuclear Distinguished Professor, has been appointed by the U.S. Nuclear Regulatory Commission to serve on the Advisory Committee on Reactor Safeguards (ACRS). Dr. Abdel-Khalik is the first Georgia Tech faculty member to be appointed to ACRS since its establishment by the Atomic Energy Act of 1954.

Scott Bair, principal research scientist, received the Alan Berman Award—Basic Research Category from the Chemistry Division of the Naval Research Laboratory for a paper that appeared in the *Journal of Chemical Physics* in 2006. Elsevier is the publisher of Scott’s book on High-Pressure Rheology for Quantitative Elastohydrodynamics.

Bert Bras, professor, received the 2007 Georgia Tech Award for Outstanding Interdisciplinary Activity at the Faculty/Staff Honors Luncheon in April.

Ken Cunefare, professor, and Anne-Marie Lerner (graduate student) received U.S. Patent 7,102,474, dated September 5, 2006, for Adaptable Vibration Absorber Employing a Magnetorheological Elastomer With Variable Gap Length and Methods and Systems Therefor.

Nico Declercq, assistant professor, received the International Dennis Gabor Award from the NOVOFER Foundation for Technical Creation. The Foundation is under the auspices of the Hungarian Academy of Sciences, the Hungarian Ministry of Information and Communications, and the National Office for Research and Technology.

Steve Dickerson, professor emeritus, and his wife, Jane, provided $1.5 million to create the first endowed chair in the School of Civil and Environmental Engineering. It will be named the Frederick R. Dickerson Chair in honor of his late father. The Dickerson Chair is intended to serve as the foundation for major research and education efforts in urban transportation systems.

Geoffrey Eichholz, professor emeritus in nuclear engineering, endowed the Geoffrey Eichholz Teaching Award to support teaching at Georgia Tech in the Center for Teaching and Learning.

Andres Garcia and Robert Guldberg, associate professors, were elected to the grade of Fellow in the American Institute for Medical and Biological Engineering.

Itzhak Green, professor, received the 2006 ASME Machine Design Award.

Robert Guldberg, Richard Neu, and Zhuomin Zhang were promoted to full professor.

Nolan Hertel, professor, was selected Faculty of the Year by the Georgia Tech Graduate Student Government Association. In addition, he was elected 2nd Vice-President of the Council on Ionizing Radiation Measurements and Standards for 2006-2007.

Yogendra Joshi, McKenney/Shiver Chair, received the 2006 Outstanding Contributions in Thermal Management from the Electronics and Photonics Division of the ASME. He resigned his service position as Associate Chair for Graduate Studies effective May 2007.


Dave McDowell, Carter Paden Distinguished Chair, is the recipient of the 2008 Khan International Medal for outstanding life-long contributions to the field of plasticity and was named a Fellow of the Society of Engineering Science.

Chris Paredis, assistant professor, received the 2007 CETL/BP Junior Faculty Teaching Award at the Annual Faculty/Staff Honors Luncheon. In addition, he is the recipient of an SAE Ralph R. Teetor Education Award.

Jiannin Qu, professor, received the 2006 Award for Outstanding Contributions in Mechanics from the Electronics and Photonics Division of the ASME. In addition, he and Larry Jacobs, professor, received the Sigma Xi (Georgia Tech chapter) 2007 Best Paper Award.

David Rosen, professor, has been appointed the new Associate Chair for Graduate Studies.

Suresh K. Sitaraman, professor, and Drs. Lunyu Dennis Ma (Ph.D. ME) and Qi Angela Zhu (Ph.D. ME) received U.S. Patent 7,011,530 for Multi-Axis Compliance Spring. Drs. Ma and Zhu are both employed at Intel.

Charles Une received the Sigma Xi (Georgia Tech chapter) 2007 Sustained Research Award.

**RESEARCH NEWS**

**A NEW RESEARCH CENTER FOR FLUID POWER**

Discovering ways to reduce fuel consumption, developing devices for people with mobility impairments and designing state-of-the-art rescue robots are just three of the goals of the new $21 million engineering research center that includes Georgia Tech. The National Science Foundation gave a $15 million, five-year grant to support the new Engineering Research Center for Compact and Efficient Fluid Power. Industry partners will augment NSF funding with $3 million, and seven universities involved in the center, including Georgia Tech, will contribute an additional $3 million. The center is based at the University of Minnesota. Dr. Wayne Book, HUSCO/Ramirez Chair in Fluid Power and Motion Control is the leader of the Georgia Tech team for the ERC.

Fluid-power technology encompasses most applications that use liquids or gases to transmit power in the form of pressurized fluid. The complexity of these systems ranges from a simple hydraulic jack used to lift your car when replacing a tire to sophisticated airplane flight control actuators that rely on high-pressure hydraulic systems.

**ENEMY DETECTION**

A new sensor that measures the motion created by sound waves under water could allow the U.S. Navy to develop compact arrays to detect the presence of enemy submarines. These arrays would detect quiet underwater targets, while providing unambiguous directional information. The novel underwater sensor uses optical fibers to detect the direction from which a sound is coming under water. This directional component is an important improvement over the current technology. The sensor was developed by Francois Guillot and Dave Trivett, both research engineers in the Woodruff School, and Peter Rogers, professor. The current prototype sensor has been tested in the School’s large underwater acoustic tank facility. Soon they will field test the system to see if it outperforms current technology. This research was supported by the Office of Naval Research.
CARTILAGE MONITORING

An innovative combination of existing technologies shows promise for noninvasive, high-resolution imaging of cartilage in research on the progression and treatment of the common degenerative disease osteoarthritis.

Microcomputed tomography (microCT), which yields three-dimensional X-ray images with a resolution 100 times higher than clinical CT scans, is commonly used to image bone for osteoporosis research but has not been useful for imaging soft biological tissues such as cartilage.

By combining microCT with an X-ray absorbing contrast agent that has a negative charge, researchers were able to image the distribution of negatively charged molecules called proteoglycans (PGs). These molecules are critical to the proper functioning of cartilage.

Associate Professors Andres Garcia and Marc Levenston established and validated the principles of the technique, called Equilibrium Partitioning of an Ionic Contrast agent-micro CT, or EPIC-microCT. Experiments conducted by Ph.D. student Ashley Palmer established the principles and protocol of EPIC-microCT.

MATERIALS MAY SOON AID ORTHOPEDIC SURGERY

An early-stage medical-materials company based at Georgia Tech is developing devices that may soon improve the treatment of human orthopedic conditions. The research at MedShape Solutions focuses on ‘shape-memory’ polymers and alloys — solid materials that can change shape on demand. The ability of these materials to mold actively to human bone and tissue will make them useful in several types of reconstructive surgery.

The shape-memory approach, which is patent-pending and expected to go into human trials soon, derives from the work of Ken Gall, associate professor of materials science and engineering and a joint appointment in the Woodruff School.

MedShape product application has been designed for use in knee surgery. Another product is a shape-memory alloy designed to help patients with diabetes and other conditions who suffer from soft-tissue damage in their lower extremities, resulting in ankle pain.

The research began about ten years ago at the University of Colorado, where Gall began his academic career. After Gall moved to Georgia Tech in 2005, MedShape received significant support from the State of Georgia. Venturelab — a unit of Georgia Tech Commercialization Services that aids fledging companies based on faculty discoveries — helped the company win Georgia Research Alliance commercialization grants. The company hopes to have a product to the market in about two years.

COMING SOON

The Woodruff School is pleased to announce that a new group of assistant professors has accepted offers of employment for summer or fall semesters, including:

- Antoniou Antonia (Mechanical of Materials, starting in 2008);
- Chaitanya Deo (Nuclear and Radiological Engineering);
- Michael Leamy (Acoustics and Dynamics);
- Erica (Bowden) Ryherd (Acoustics and Dynamics);
- Karim Sabra (Acoustics and Dynamics).

Two other faculty members in the MEMS and Mechanics of Materials areas will join us soon.
COLLEGE OF ENGINEERING AWARDS

Michael J. Bly (BME 1990) was inducted as a member of the COE Young Engineering Alumni. He is Engineering Director—Global Hybrid Vehicles for General Motors Corporation. He has been an active member of GM's university recruiting team at Georgia Tech for the past 13 years and also serves as a member of the Woodruff Schools Advisory Board.

Harold O. Davidson, Jr. (BME 1947, MSIE 1948) was elected to the Engineering Hall of Fame. He is Founder and Retired President of DTM, Inc., a consulting firm he formed in 1964. He received his Ph.D. from Ohio State University in 1951. After a 1968 merger with Arthur Young, DTM became the nucleus of that firm's systems analysis activities, which he directed until retirement in 1980. He remained active as an individual consultant, including some arbitration and expert witness assignments until the late 1990s.

Jeffrey T. Ellis (Ph.D. 1999) was elected to the Council of Outstanding Young Engineering Alumni. He is Research Advisor in the Cardiac Therapies Group at Abbott Vascular. As the lead research scientist in the company's vulnerable plaque program, he has been responsible for managing a broad spectrum of preclinical activities to investigate new interventional therapies for treating atherosclerosis. Dr. Ellis also enjoys being an industry career mentor to local high school students.

Dan C. Godbee (BME 1976, MSME 1987, MSIE 1989) became a member of the Academy of Distinguished Engineering Alumni. He is Faculty and Attending Physician in the Emergency Medicine Residency Program at Louisiana State University Medical Center. He graduated from Mercer University School of Medicine in 1999. After completing a residency in Emergency Medicine at Louisiana State University in 2003, he was activated with the Army Reserve and served as an Arabic linguist and deputy brigade surgeon. On his most recent deployment to Iraq, he was the battalion surgeon of the 3rd Battalion, 20th Special Forces Group from the Florida Army National Guard.

Stephanie M. Kladakis (MSME 1999, Ph.D. ME 2002) was elected to the Council of Outstanding Young Engineering Alumni. She is Senior Engineer, Research and Development for NMT Medical, Inc. in Massachusetts, where she is responsible for managing an engineering staff to develop a novel, bioabsorbable heart septum repair device that promotes biological closure. Her research and development activities at NMT Medical and, prior, at Johnson & Johnson, have resulted in four published and numerous unpublished patent applications.

James C. Leathers (BME 1955) was elected to the College of Engineering Hall of Fame. He is Retired Vice President of the Production Support Department of Duke Power Company. After graduating from Georgia Tech he served two years in the U.S. Navy and then began a thirty-seven year career with Duke Power in North Carolina. He represented Duke at the Electric Power Research Institute, the Global Environmental Management Initiative, and on the Corporate Conservation Council of the National Wildlife Federation. He served on the class project fundraising committee for his fortieth- and fiftieth-year reunions and is a member of the Charlotte GT Club.

Louis B. Long (BSPhys 1966, MSNE 1967) is a member of the Academy of Distinguished Engineering Alumni. He is Vice President of Technical Support for Southern Nuclear Operating Company where he is responsible for all engineering, licensing, and fuel support for the six nuclear units operated by SNC. He serves on the Electric Power Research Institute Nuclear Power Executive Committee and the World Nuclear Association Board. In addition, he is a member of the Woodruff School’s Advisory Board.

Bryan T. Labrecque (BME 1981) was elected to the Academy of Distinguished Engineering Alumni. He is President and Chief Operating Officer of Atlantic Southeast Airlines. Atlantic Southeast Airlines operates 150 aircraft to 120 cities and seven countries and employs approximately 6,000 people. He earned his MBA from Georgia State University in 1993 and is also a private pilot.

PAUL ALLEN APPRECIATION DAY

The Woodruff School celebrated Paul Allen (BME 1987) Appreciation Day at the Student Competition Center last summer. For ten years, Paul Allen was the General Motors University Relations Team Leader for Georgia Tech. The reception recognized Paul for his many accomplishments in promoting the General Motors-Georgia Tech relationship.

After a wonderful 23-year career at GM, he had to make a decision to stay with the company and move his family to Detroit or switch gears. He was presented with an opportunity to remain in Atlanta and work with a close friend. Paul is now the General Manager of SPW Industries, which sells and services tires and rubber tracks for industrial and commercial equipment (forklifts, loaders, excavators, graders, etc.). The company has eight locations in Georgia, Florida, Alabama, and Texas with a total of forty employees. Paul says, “It has been a steep learning curve but I really enjoy the interaction with the team that makes up this small business. I feel like I’m getting my MBA on the job as I learn from day to day all the aspects of running a small business.” He is one of the founding members of gt motorsports, the student formula SAE competition group, and he has continued to support the team and the Auto Show.
ALUMNI NEWS

John Auxier (Ph.D. NE 1972) received the 2006 Distinguished Scientific Achievement Award from the Health Physics Society. This award is given to someone who has furthered the profession of health physics through scientific achievement and the sharing of knowledge with others.

Bill Brant (MSNE 1972) was selected as a member of the Oxford Round Table and presented Professional Ethics: A Must for the Global Society of the 21st Century at Oxford University, England. He is an Engineering Ethics lecturer at the University of Texas at San Antonio and a Continuing Engineering Education course provider for PDHonline.org. He lives in Boerne, Texas.

Leo Cancio (BME 1961, MSNE 1962) has been semi-retired since 2003, but he is serving as Advisor to the President of Clopay Corporation, a plastic products company. Prior to his retirement he served for many years in positions at the company, beginning in 1977 as Manager of Plastic Technology, Product Development until his retirement in 2003 as President and Chief Executive Officer of Clopay Plastic Products Company. He was the first minority student to receive an MSNE degree.

Haejin Choi (Ph.D. ME 2004) accepted a position as Assistant Professor at the Nanyang Technical University in Singapore in January 2007.

Franco Cimatti (BME 1981) received his master's degree from MIT one year after his graduation from Georgia Tech. After a compulsory one-year tour in the Italian military, Cimatti landed a job with Ferrari. He was offered a position in the testing department working with a complete car. Then he tested shock absorber dampers on a 412, evaluated the Testarossa, and was chief testing coordinator for the 348 spider and the Mondial. In 1994, Cimatti was named concept design manager at Ferrari and given the task of creating the 612 Scaglietti, a four-seat, high-speed touring coupe.

Patrick Cross (BSME 2006) received an honorable mention in the NSF Graduate Research Fellowship competition. He is now a graduate student at UC Berkeley.

Anh Dang (MSME 1999, Ph.D. ME 2002) is Project Manager for China Outsourcing Initiatives at GE Energy Systems. He held the first minority student to receive an MSNE degree.

Haejin Choi (Ph.D. ME 2004) accepted a position as Assistant Professor at the Nanyang Technical University in Singapore in January 2007.

Lawrence T. Dauer (MSHP 1996) of the Memorial Sloan-Kettering Cancer Center, was elected president-elect of the Medical Health Physics Section of the Health Physics Society.

Dathan S. Erdahl (MSME 2000, Ph.D. ME 2005) is enjoying his position as a Research Engineer in the Structural Integrity Division of the University of Dayton Research Institute. In addition, he and his wife, Natalie, welcomed Annalieze Jane to the family; she was born on July 21, 2006.

Michele Sutton Ferenci (MSHP 1997, Ph.D. NE 2001) is a Medical Physicist in the Department of Radiation Oncology at Saint Joseph's Hospital of Atlanta. She is working with Dr. Nolan Hertel to organize the 11th International Conference on Radiation Shielding to be held at Callaway Gardens in April 2008.

Mark Floer (BME 1993) was recently promoted to the position of Manager Mechanical Engineering at Ride & Show Engineering for Walt Disney World. He also holds an MBA from the University of Florida and is a licensed PE in the State of Florida. Mark joined Walt Disney World Ride & Show Engineering in 2002 as a Project Engineer working on attractions and reliability teams.

Derek Garland (BME 1993) started work right after graduation as a Field Engineer for Schlumberger Technologies, the world’s largest oil and gas service company. His career progressed through many positions and locations, with seven moves in 13 years. His current position is the Schlumberger Training Center Manager for the U.S. Derek was also appointed an official liaison with Georgia Tech. Recently, he addressed the ASME student chapter. Derek said, “This is a great opportunity for me to bring some of my experiences to the students. Some of the most memorable classes and presentations were the ones that I could relate to the “real world” because an engineer came to speak to us and provide some perspective. I want to be that guy of today’s students.” Derek, along with his wife and three children, reside in Tulsa, Oklahoma.

Deborah Kilpatrick (MSME 1994, Ph.D. ME 1994) is currently the Vice President of Market Development at CardioDx in Palo Alto, California. CardioDx is a privately-held company developing clinically validated molecular diagnostics to aid cardiologists in identifying at-risk patients who will benefit most from advanced pharmaceutical and device therapies. She was elected a Fellow of the American Institute of Medical and Biological Engineering, chairs the Woodruff School’s Advisory Board, and serves on the Dean’s Advisory Board for the College of Engineering.

Byungki Kim (Ph.D. ME 2006) accepted a faculty position in the Department of Mechanical Engineering at the University of Massachusetts at Lowell.

Trevor Larsen (BME 1988, MSME 1990) is now a Vice President of Walt Disney Parks and Resorts Engineering Services and Maintenance and Manufacture in Orlando, Florida.

Todd Levine (BME 1997), currently manager of Hong Kong Disneyland Sustaining Engineering, is returning to Walt Disney World in Florida to assume the position of Manager Sustaining Engineering at Ride & Show Engineering. In addition to his degree from Georgia Tech, Tod is a professional engineer in California and Florida. He is married to Monica, and they are the parents of a new baby, Jared.

Kemper Lewis (Ph.D. ME 1996) was promoted of the rank of professor in fall 2006 at the State University of New York at Buffalo. He was appointed Director of the New York State Center for Engineering Design and Industrial Innovation and appointed the University Chair for Competitive Product and Process Design.

Pingping Ma (MSME 1989, Ph.D. ME 1992) was appointed to the position of Research Associate - Computational Fluid Dynamics in the Computational Modeling Center at the Enabling Technologies Center at Air Products. She joined Air Products in October 1995 as a Principal Systems Engineer after working for Fluent, Inc., as a technical support engineer. She holds five patents, and has published numerous papers in referred publications.
Nicolle (Zirkelback) Martin (Ph.D. ME 2001) works as part of the business development staff in the Advanced Development Programs (Skunk Works) at Lockheed-Martin Corporation in Marietta, Georgia. At Lockheed, she worked on the C-5 Modernization program and ADP's advanced mobility international programs. In 2003, she was named Most Promising Engineer-Advanced Degree by the Hispanic Engineering National Achievement Award Corporation.

J. Gregory McDaniel (MSME 1990, Ph.D. ME 1992), Associate Professor of Mechanical Engineering at Boston University, was elected to the grade of Fellow in the Acoustical Society of America. In addition, the senior class of the College of Engineering at Boston University chose him as Professor of the Year for exemplifying excellence in teaching.

David McKenney (BSPhys 1960, BIE 1964) received the ASHRAE/ALCO Medal for Distinguished Public Service. This award recognizes members who have performed outstanding public service in their community, and in doing so, have helped to improve the public image of the engineer. David is a registered Professional Engineer and Chairman and Chief Executive Officer of McKenney's, Inc., a mechanical contracting and engineering company in Atlanta. He is a life member of ASHRAE, a member of Mechanical Contractors Association of America, and the Sheet Metal and Air Conditioning Contractors (SMACNA). His service for this award includes funding half of the endowed chair in Building Mechanical Systems in the Woodruff School, trustee of the Georgia Tech Foundation, and board chair of the Bobby Dodd Institute. He also received The Joseph Mayo Pettit Alumni Distinguished Service Award at The Gold and White Honors dinner by the Georgia Tech Alumni Association.

Kristi (Landis) Mehaffey (BME 1994) was married on December 2, 2006 to Sutton Mehaffey. Kristi is the Undergraduate Academic Advisor in the Woodruff School, and the recipient of the 2007 Georgia Tech Outstanding Undergraduate Academic Advisor Award—Faculty Advisor.

James E. Moore (BME 1987, MSME 1989, Ph.D. ME 1991) was elected a Fellow of the American Institute of Medical and Biological Engineering. He is an Associate Professor in the Department of Biomedical Engineering at Texas A&M University.

Young-Bin Park (Ph.D. ME 2003) is an Assistant Professor in the Department of Industrial and Manufacturing Engineering at Florida A&M University and Florida State University in Tallahassee. Prior to joining the department in 2004, he was a postdoctoral fellow in the School of Polymer, Textile and Fiber Engineering at Georgia Tech. His research focuses on advanced composite technology.

Erika Parra (BSME 2003) is a graduate student at the University of California at Berkeley, where she is finishing the last few details for her master's degree. She will then begin work toward her Ph.D. on energy scavenging mechanisms inside the body to power, for example, pacemakers and artificial organs. On the personal side, Erika is engaged to Doug Densmore, a graduating EECS Ph.D. at Berkeley; they've taken up sailing.

Isaac Penney (BSME 2006) won a National Science Foundation Graduate Research Fellowship. He also won an NDSEG from the Department of Defense. He is doing graduate work at Stanford University.

Parker (Pete) Petit (BSME 1962, MSESM 1964) will be inducted into the Georgia State Robinson College Business Hall of Fame. The Hall of Fame provides the highest recognition given by the College to business leaders for their efforts in advancing the principles of the free market system while serving national and international business communities.

Scott Schwahn (BSHP 1989, MSHP 1990) received the Elda E. Anderson Award from the Health Physics Society. This award is given to a young member (less than 40 years old) to recognize excellence in research or development, invention, or significant contributions to the profession.

Carolyn Seepersad (MSME 2001, Ph.D. ME 2004) is an Assistant Professor of Mechanical Engineering at the University of Texas at Austin. She was recognized in 2006 by the University of Texas Student Engineering Council for her commitment to teaching excellence.

Mahesh Shenoy (Ph.D. ME Ph.D. ME 2006) and Ali Gordon (BME 1997, MSME 2000, Ph.D. ME 2006), along with their advisors Rick Neu and Dave McDowell, received the 2006 ASME Orr Best Paper Award. This award is sponsored by the Materials Division of ASME and is chosen by the editors of the Journal of Engineering Materials and Technology for the best fatigue and fracture paper to appear in the journal within a 12-month period.

James Shepherd (BME 1991, MSME 2002, Ph.D. ME 2006) is a Senior Engineer at Exponent Failure Analysis Associates, a premier failure analysis consultancy. Upon graduation from Georgia Tech with his bachelor's degree, Jim worked in industry for ten years as an engineer at the U.S. Army Missile Command, The Coca-Cola Company, and Polymer Solutions. His last employer prior to going back to school, Polymer Solutions, was a joint venture between GE Plastics and Fitch. GE Plastics created a large technical center in India and moved all of his group's work there and shut down his office. So he went back to school full-time to develop the knowledge and skills to acquire a new job that is less susceptible to outsourcing.

Tim Simpson (MSME 1995, Ph.D. ME 1998) was promoted to the rank of professor in fall 2006 at Pennsylvania State University, and he received the 2007 Penn State President's Award for Excellence in Academic Integration. He and his wife are the parents of Kayla Marie Simpson, born August 22, 2006.

Earl B. Smith (BME 1988) joined the faculty at Tuskegee University as an assistant professor of mechanical engineering.

Charles N. Sohn (BME 1998) was married in August 1998 and has one child, born in May 2005. He lives in Green Cove Springs, Florida.
TECH ALUMNA NAMED UNIVERSITY PRESIDENT

Dr. Carolyn Meyers (MSME 1979, Ph.D. ChE 1984) was named president of Norfolk State University in Norfolk, Virginia, a position she assumed in July 2006. Prior, she was provost and vice chancellor for academic affairs at North Carolina A&T State University.

Meyers has had a long academic career. She began at Georgia Tech in 1979 as an instructor of Mechanical Engineering. Soon after completing her doctoral degree, she became an assistant professor of Mechanical Engineering. She was promoted to Associate Professor in 1990, was the first Associate Dean of Research for the College of Engineering, and left Georgia Tech at the end of 1995. She then went to North Carolina A&T State University as Professor and Dean of Engineering, and then to the National Science Foundation, where she served as a program officer for the Divisions of Undergraduate Education and Human Resource Development. She then returned to North Carolina A&T as interim provost and vice chancellor.

Meyers received the NSF Presidential Young Investigator Award, the National Society of Black Engineers' Golden Torch Award, and the Society of Automotive Engineers Ralph A. Teetor Award. She was inducted into the Georgia Tech College of Engineering Academy of Distinguished Engineering Alumni.

Chip Starns (BSNRE 2002) works for Southern Nuclear and is stationed at Plant Farley in Dothan, Alabama as a senior nuclear engineer in operations and supervising nuclear refueling. Upon graduation from Georgia Tech, he went into the medical field and was with the same company for four years. In December 2004, he decided to get back into the nuclear power industry.

Angela Laam Tse (Ph.D. ME 2006) is working at F11X of Intel Corporation in Albuquerque, New Mexico. F11X is one of the largest 300mm silicon chip manufacturing factories in North America. She is a senior process engineer in the Lithography Department, where her primary role is to provide technical support on the state-of-the-art micro lithography equipment. She said, “Life is so different outside of School and being a student.” She misses the fall graduate cookouts.

Christine Valle (MSME 1996, Ph.D. ME 1999) is an Academic Professional in the College of Engineering at Georgia Tech. She teaches four sections of Statics in the fall and spring semesters, and serves as the advisor to students in the BS/MS program in the Woodruff School. Prior to returning to Georgia Tech, she held academic positions at the University of Maine and Embry-Riddle Aeronautical University. Christine won the Sigma Xi Best Ph.D. Thesis award in 2000.

Ky Vu (BME 1992), an honors graduate of the Woodruff School, spent five years in the United States Navy and worked as a project manager at Charles Schwab. He then chose to look for a more meaningful career and decided on public education. Vu joined the Broad Residency, a two-year management training program for emerging executives seeking to be leaders in education. He now applies the skills he learned from this intensive training in his position as Director of State and Federal Programs for the San Francisco Unified School District, where he leads the district’s training program for aspiring principals. “There are so many extremely dedicated people in our schools,” Vu says. “Our role in the central office is to provide the systems and structures they need to succeed.”

Tyler Warnock (BSME 2006) won a National Science Foundation Graduate Research Fellowship. He is doing graduate work at UC Berkeley.

Michael Woodmansee (MSME 1999, Ph.D. ME 2003) works for Schlumberger in the Product Research Center in Houston. Prior, he was in Aracaju, Sergipe, Brazil on an international assignment for Schlumberger as part of the Oilfield Services Tech and Field Program.

Sean F. Wu (MSME 1984, Ph.D. ME 1987), Distinguished Professor of Mechanical Engineering at Wayne State University, won an ESD 1st Annual Alpha Award for Innovation in Engineering and Technology.