Features:

Dale Klein
Appointed U.S. Assistant Secretary of Defense

Steve Nichols
Appointed UT Associate VP for Research

Byron Tapley
Directs NASA Mission

Applied Materials
Gives $500K

Keys Curry is Distinguished Grad

Upcoming Events:

Tailgate 2002
Class of ‘72 Reunion 2002
Grand Opening of T Room 2003
Book Signing 2003

Driving Excellence!
I would like to thank all of you for your support and participation in this publication. The purpose of **ME ALUM** is to provide a voice to the UT Mechanical Engineering Community. This is Your forum for recognition, discussion and departmental information. **ME ALUM** provides a means not only of looking backward, but also of looking forward to new innovations, inventions and opportunities. What one man cannot do alone, many can do together. That is why building and sustaining a community of mechanical engineers is important. We are living in interesting and exciting times. The world relies on mechanical engineers to solve problems of enormous significance and magnitude. As you will read in this publication, an education in mechanical engineering does not limit one exclusively to engineering. Mechanical Engineers have great influence as leaders, researchers and humanitarians. What more noble a profession when directed toward noble causes? Without a doubt our society needs mechanical engineers.

I have noticed that our department lacks a written historical account. I am calling for a written record of the history of the UT Mechanical Engineering Department. I have put former ME Chairman and ME Alum, Dr. Grady Rylander, Jr. in charge of this endeavor. He will have assistance from Joanna Hofer along with our new employee in the Senior Design Projects Program, Dan Loew. Joanna and Dan will help with compiling the research, writing, editing, photographs, illustrations and so forth. We have collected a lot of data and hopefully will wrap up this project by January 1, 2003. Alumni input is welcomed and truly necessary, so if you have anything you would like to contribute to our historical record, please send it to Joanna at hofer@mail.utexas.edu or mail it to the address on the back of this Newsletter.

I would like to take this opportunity to announce Dr. Rich Crawford as our new UT Mechanical Engineering Faculty contact for Alumni Relations. Dr. Crawford has taken over for Dr. Steve Nichols in our Senior Design Projects program. He has many new and interesting ideas for alumni development. I know you will enjoy working with him.

I am often asked how ME Alums can become more involved in supporting the department. As I see it, there are two fundamental ways an Alum can support the department; by helping the department build and sustain a community of mechanical engineers and by financial support. Community support can be exhibited in several ways. For example, an Alum can maintain ties to the department by attending reunion events such as Tailgate and Back to School. Requests can be made that the ME Alumni Office help to invite old friends and former classmates. An Alum could be supportive by contributing stories to the newsletter or history book, or an Alum could exhibit support by simply staying informed on what our community is doing, by reading the newsletter, checking the calendar of events on the alumni website [http://www.me.utexas.edu/~alumni](http://www.me.utexas.edu/~alumni) and letting us know if they have any ideas on articles to add. Finally, an interested Alum can request the ME Alumni Office’s aid in organizing an ME Alum happy hour. For information about ways to give financial support, please feel free to contact Joanna at 512-471-2832 or e-mail her at hofer@mail.utexas.edu. You may also contact Kelsey Evans at the College level at kelsey.evans@mail.utexas.edu or you may contact me at beaman@mail.utexas.edu or call 512-471-0796. We’ll be glad to help you!

Joe Beaman  
Chair  
UT Mechanical Engineering
I would like to acknowledge and give special thanks to everyone who contributed news items to this edition of ME ALUM. There are many interesting projects underway this year and congratulations are in order to many of you. With each year that passes, I receive more submissions. With your help this publication is growing from a newsletter into a magazine. ME Alums truly have some interesting stories to tell!

There have been some very exciting personnel additions over the past year. Dr. Rich Crawford is now our department faculty contact for Alumni relations. At the College level, new staff additions include: Kelsey Evans, our Associate Director of Development, Mary Beth Maddox, our Assistant Director of Corporate Relations and Lisa Schooley, our Alumni Relations Coordinator.

Recently we rekindled the UT Mechanical Engineering Back to School tradition in the form of an ME community party in nearby Eastwoods Park. This year 350 students, faculty, staff, alumni and their families converged on the park and ate BBQ, played games, and participated in a free raffle in our first Back to School Bash. Each person who attended received a T-shirt. We had so much fun that we are planning to make this an annual event which will occur sometime before or around the first day of the fall semester. Mark your calendars for next year for late August or early September.

I would also like to thank those of you who have become “friends of the Newsletter” by donating to the printing and mailing costs of ME ALUM. The growing size of the Newsletter is driving our publication costs. Your continued support will be truly appreciated and will allow us to sustain the types of improvements we have been able to make over the last couple of years.

Thank you so much for your participation and interest in this publication. Please do not hesitate to let us know if there is anything the ME Alumni Office can do for you.

Joanna Hofer
UT Mechanical Engineering
Alumni Office Coordinator
Editor, ME ALUM

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From the Director, Billy Wood

Writing From Abroad About Study Abroad
Or
The Economy May Be Down But I’m Not

Dateline: Munich, Germany
It’s June and it’s hot in Bavaria - Texas hot. This is a problem here. The Germans, the Austrians, and the northern Italians know to keep it warm when the weather is cool, but air conditioning is a Texas thing, like ice in your tea and serving your beer cold. When you are in Europe and visiting the truly classic architectural and engineering marvels of the world, complaining about the weather is a waste of time. There will be plenty of time to do that when I return.

The news from around the world is mostly about the economy. The economy isn’t strong anywhere. Unemployment, lay offs, the plunging stock market, and overstatement of profits are all the headlines. This is a good time to be excited about our students studying abroad. If you are nearing graduation and nobody is hiring, then there has never been a better time to delay graduation. Take the time to see the world. Get valuable exposure to other cultures. Expand your horizons and earn college credit in the process.

Since the tragedy of Sept. 11, 2001 the global study abroad programs have seen an increase in student applications and acceptances. More American students are going abroad than ever before. The world is still a safe place. Europeans are eager to improve their English language skills. More and more European programs are being offered in English. So while we are all waiting for the stock market to rebound and the economy to turn around, this is a great time to get an international experience to add to your resume, work on those foreign language skills, and meet your future colleagues on the other side of the world.

As one of the newest members of the GE3 Executive Committee I have a unique position from which to view the opportunities to study abroad. As an invited guest to the 2000 GE3 conference in Madrid, Spain, I was first introduced to the opportunities by visiting three engineering schools in Spain, two in Madrid and the third in Balboa. In 2002 I visited an additional five schools, two in Munich, one in Lobe, Austria, one in Vienna, Austria, and one in Trento, Italy. However, this time it was a working conference. I gave a presentation and chaired a break out session on expanding the use of alumni to promote international exchange. My fellow educators from Europe are extremely interested in our students coming abroad. The students that I meet when abroad are anxious to meet our students when they come abroad. The environment to collaboratively exchange ideas, language skills, and cultural diversity is very positive. I strongly encourage all of our engineering students to consider studying abroad. Potential employers will hold the experience in high esteem.

Billy Wood
Teaching Specialist
Undergraduate Advisor
Director of Alumni Relations
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The Value of ‘Learning Backward’ in Higher Education
By Alice Chu and Scott Evans

In a March 18th Washington Post article, “You’re the Dr.,” Linton Weeks wrote, “Look around -- PhDs are everywhere. There’s Dr. Laura Schlessinger. There’s Dr. Ruth Westheimer . . . And there, in the March madness, is ESPN college basketball analyst Dr. Jack Ramsay." Is this finding such a surprise? More importantly, are there latent expectations of scholars, especially science matriculates, that make this remarkable?

In the sciences, this discussion is slightly different, and perhaps even more relevant, as Ph.D. career choices are more diverse. For instance, 75% of Georgia Tech's Ph.D. graduates in 2001 sought industrial positions. This reflects the pressure for tenure-track scientists and engineers to move away from, and even limit, their "non-academic" and "soft" pursuits. While exploring competing ideas is the foundation of intellectualism, the sciences rarely encourage it. Thus, the titles of "engineer" and "scientist" become defined independent from academia, and ultimately, society in general. Recently, however, individual passion and constructivist learning are beginning to be accepted and promoted.

Susan Basalla and Maggie Debelius of “So what are you going to do with that?: A guide to career-changing for MAs and PhDs” list other graduate degree holders who debunked the Ivory Tower and ventured onto the road less taken. Consider chemical engineering Ph.D. Tom Magliozzi, better known as one half of NPR’s “Car Talk” dynamic, problem-solving mechanic duo. Despite or because of his teaching experiences, Magliozzi emerged as a radio personality by embracing his “New Theory of Learning,” based on the premise to “learn backward.” That is, learning is about fixing problems that are important to you and acquiring the requisite skills and resources to solve them.

Learning backward should be recognized as an integral skill of functional professionals and citizens. Graduate programs responding to this need are developing courses and programs that prepare students for a life and world after the thesis or dissertation in which the capacity to fix problems is a critical survival skill.

The authors accepted one program’s challenge to become greater than the sum of their degree-earned parts, to become in the program’s parlance “citizen-scholars.” We learned how to use in equal parts our academic training and personal interests. While many of us pursued avenues outside of academe, others were enlightened with what a university career had to offer. Regardless of our approaches, the outcomes were the same: we were applying our interests in "esoteric" areas to "real world" problems with tangible results — learning backward.

Here are several personal accounts to show what we mean by learning backwards:

Scott Evans, a Ph.D. student in mechanical engineering, pursued a curriculum reform project that integrated project management and communication skills in engineering courses. The project reconciled Evans’ textbook-driven education with his engineering training, satisfying both his intellectual and applied interests. The course demonstrated to Evans “the connections and collaboration engineers can pursue within academe, or society at large, on issues not typically considered the providence of engineering.”

Molecular biology Master’s student, Nan Yan, designed a project for an e-learning course on antibody modification techniques for biotech and pharmaceutical firms wishing to improve their online learning resources. The experience encouraged Yan to leave the lab and teach non-molecular biology specialists to appreciate its intricacies. “It challenged me to present a molecular biology idea that even a general audience can understand and in a format that is educationally applicable.”

Although well-trained to be researchers and scientists, grad students are often unfamiliar with situating their knowledge within an interdisciplinary setting. A recent mechanical engineering doctoral graduate, Mitch Pryor, sought to reexamine the teaching of science through this approach. Observing a history professor who integrated storytelling in his course taught Pryor that teaching science should “focus on developing a scientific literacy in a student” that moves the student beyond the fundamentals of scientific fact alone. From a business perspective, Noppadon Kamolvilas-atian, a computer science Masters student, claimed that “discussions with classmates from many different disciplines were particularly helpful in generating and clarifying ideas on what I wanted to pursue...”
The authors are pursing their doctoral degrees at the University of Texas at Austin, Chu in linguistic anthropology and Evans in mechanical engineering.
When the University first opened in 1883, classes were held Monday through Saturday, professors sent monthly attendance reports home to parents, and holidays were in short supply. The academic calendar of choice was the quarter system, with the fall term beginning in late September or early October, finishing just in time for Christmas. Winter classes resumed the third or fourth day of January and ran through mid-March. And without a pause, the spring term began immediately after winter finals and continued mercilessly until the first week of June. Students were permitted only two days to catch their breath: March 2nd in honor of Texas Independence Day, and April 21st for San Jacinto Day.

In 1908, the start of spring classes was joined by a student movement for a third holiday, preferably April 1st. The faculty was officially opposed to the idea, but did nothing to prevent the cause from gaining momentum. Students began to organize, and decided that if their request wasn't granted, they would stage a group walkout.

About a month before the spring term began, UT engineering students received an invitation from their counterparts at the University of Missouri to travel north to the Show Me State for St. Patrick's Day. Since 1903, Missouri engineers have claimed St. Patrick was an engineer, and every March 17th since have taken the opportunity to celebrate their patron saint, engineering . . . and everything else.

Since 1901, Texas engineers have claimed their own patron saint. Alexander Frederick Claire, or simply “Alec,” was the main character in “Hi Ho Balls,” a favorite song of the engineers. But Alec was known in name only; an appropriate physical rendering had not yet been found.

The invitation from Missouri, along with the students’ request for a holiday, sparked an idea. Why not dedicate the first of April as a day to honor the patron saint of Texas engineers?

On the evening of March 31st, members of the TECEM Club (which stood for Texas Engineers: Civil, Electrical and Mining) gathered in a second-floor room of the old Engineering Building (now the Gebauer Building). The Club’s purpose, according to Dean Thomas Taylor, was to “promote practically everything but learning and scholarly attainments,” and the March meeting fell right in line. First on the agenda was to make plans for the April 1st holiday. To encourage their fellow students to cut classes, the group wanted to smuggle a few dogs up to the top floor of the old Main Building, tie tin cans to their tails, and let them loose during the first class hour. The group adjourned to find the required canines, but the neighborhood dogs weren’t very cooperative, and the idea was dropped due to a lack of volunteers. Instead, the Club retired to Jacoby’s Beer Garden, just south of the campus on Lavaca Street.

While they sampled Jacoby’s refreshments, one member of the group spied a five-foot tall wooden statue of a chubbier, medieval-like character under a shed near the exit. The statue was a likeness of Falstaff, and was intended to promote Falstaff Beer, but its right arm had broken off, and Mr. Jacoby had removed the statue from the garden. Seized by inspiration, the engineers believed they had found the long-sought-after physical presence of their patron saint. Distracting Mr. Jacoby, they spirited the statue out of the shed and off to the campus, where it spent the night in B. Hall, the men’s dorm. A sunny and balmy morning greeted the month of April in Austin. Because the professors were on record as against any additional holidays, students arrived for class as usual. Everyone knew, though, that “something was up.”

Promptly at the 9:00am bell, more than three hundred engineering students assembled in front of the old Engineering Building. Falling into ranks of four across, and with their new likeness of Alec resting on the shoulders of those in front, the group loudly paraded around the Forty Acres and came to a stop in front of the old Main Building. Alec was carefully placed in front of the Old Main fountain (now found behind the Alumni Center), and the crowd formed a circle around him.

In a ceremony that better resembled a church service, sophomore and TECEM Club member Murray Gill was dubbed “Priest” for the day, and led the assemblage in a rousing hymn that was popular among students but less known to those off-campus: “Nero, My Dog, Has Fleas.” Priest Gill then gave a stirring speech on the life and times of Alec. It was Alec himself who founded engineering science, designed the Great Wall of China, the Pyramids of Egypt and the Hanging Gardens of Babylon. He was the chief consultant for all roads built by the Roman Empire, and even assisted in the digging of the Suez Canal. Gill was reportedly so touched by his subject matter, he had to have a handkerchief ready at all times to wipe away the flood of tears from his eyes.

Following Gill’s remarks, the group swore their allegiance to Alec, with each right hand placed solemnly on a copy of the beloved Calculus. Then, “with much uncontrollable weeping and lamentation,” the engineers filed by the image of their patron saint, each student leaving a tribute of bluebonnets.

With the formalities concluded, the engineers split into classes and fled the campus. The seniors promptly kidnapped Dean Taylor and went to Bull Creek in north Austin. The junior class organized a picnic near Mount Bonnell, and the sophomores and freshmen spent the afternoon swimming in Lake Austin.

Not about to miss out on the fun, students in the other departments evacuated classrooms for the Great Outdoors. Law students crowded onto several horse-drawn trolleys and spent the day cruising Congress Avenue, with the singular intent of interrupting as much of the normal business day as possible. Those in the Academic Department (“Academs” majored in the arts and sciences) acquired their own transportation and picnic supplies, and made a beeline for the open fields east of Austin. April Fool’s Day remained a University holiday for almost thirty years. In the mid-1930s, it was replaced with a four-day “spring vacation” around Easter weekend. Students didn’t get a full week off for Spring Break until 1967.
ME Professor, Dr. Dale Klein, Becomes Assistant to the U.S. Secretary of Defense

Dale Klein, UT Mechanical Engineering professor and vice chancellor for special engineering programs in the University of Texas System, was chosen by President George W. Bush in October 2001 to head up the U.S. Defense Department’s nuclear, chemical and biological defense programs. The Editor of ME ALUM had the great honor of conducting an interview with Dr. Klein in May 2002 five months after he accepted the position. Below is a record of our conversation. The Department sends its best wishes and congratulations to Dr. Klein as he continues to serve our nation in this challenging and vital capacity. Many thanks to him for his career of public service.

ME ALUM: Dr. Klein, now that you have served as Assistant to the U.S. Secretary of Defense, Donald Rumsfeld, for the past five months, what do you find the nature of the position to be?

KLEIN: As you know, I was sworn in as the Assistant to the Secretary of Defense (Nuclear and Chemical and Biological Defense Programs) (ATSD(NCB)) on November 15, 2001. In this position, I am the principal staff assistant and advisor to the Secretary of Defense and Deputy Secretary of Defense and the Under Secretary of Defense for Acquisition, Technology, and Logistics for all matters concerning the formulation of policy and plans for nuclear, chemical, and biological weapons. The ATSD(NCB) is also directly responsible to the Secretary and Deputy Secretary of Defense for matters associated with nuclear weapons safety and security, chemical weapons demilitarization, chemical and biological programs, counter proliferation of weapons of mass destruction and nuclear treaties.

ME ALUM: What are your goals associated with the position?

KLEIN: My goals include ensuring that our nuclear weapons are safe, secure and reliable; developing a strong and comprehensive chemical and biological defense program; meeting the requirements of our nuclear treaties; completing the safe destruction of our chemical weapons; and enhancing our counter proliferation efforts regarding weapons of mass destruction.

ME ALUM: Can you elaborate on some of the specific challenges in the nuclear, chemical and biological defense programs?

KLEIN: One specific challenge in the nuclear arena is how to ensure the safety, security and reliability of nuclear weapons as they age and with the current policy of no full-scale weapons testing. Obviously a challenge in the chemical and biological area is the development of stand-off sensors and having a response plan if the sensors pick up a signal. The chemical weapons demilitarization program has been behind schedule and over budget. We need to make better progress in the safe disposal of these chemical weapons, especially in light of the terrorist attacks on 9/11. The current cost to dispose of our old chemical weapons is $24 billion (yes, it really is billions!)

ME ALUM: Do you foresee a growth in our nuclear program here at UT and/or around the country as a direct result of the heightened focus on nuclear defense programs? Do you have any advice for students or alumni who would like to participate in this area?

KLEIN: I anticipate growth in the nuclear program at UT in the commercial arena of electricity generation, in the defense arena that includes considerable basic research, and in the use of radioactive isotopes for medical and scientific research.

The University of Texas at Austin has excellent nuclear research capabilities. With the planned addition of nuclear trained faculty, UT is well positioned to contribute to the nuclear needs of the nation.
Currently the demand for nuclear trained students is very high in all sectors: commercial, national laboratories, DOE and DoD. My best advice for students is to consider a career in the nuclear field. There are very exciting job opportunities and not enough individuals to meet the current and forecasted demand. Another piece of advice that I would provide to students today is to consider a career in the military. I did not serve in the military and was unaware of the career opportunities the military provides. Today’s military uses some very impressive technology and a technical background enables exciting career opportunities.

ME ALUM: What has been your impression of your job so far?

KLEIN: First, I should point out that I am extremely honored by having been selected by President Bush to serve our country. Public service is not without its sacrifices. The pay is often less, the cost of living is higher, and, in my case, being separated from my wife (who resides in Texas.) However, the positive aspects of my new position far outweigh the negative. After the terrorist attacks of 9/11, most Americans wanted to help our country and I’m fortunate to have the opportunity to make my contribution. Obviously, the issues in my position are at the forefront of fighting terrorism.

The second major point I would like to make is about the people at the Pentagon. I expected to put in long hours in my new position so the work hours did not surprise me.

The most important advice is the “aim high” part. If anyone would have told me, a farm boy from rural Missouri, that I would someday be a Presidential Appointee working at the Pentagon as the Assistant to the Secretary of Defense, it would have been very difficult to imagine this situation. UT has prepared you well, so set your goals high and take advantage of your opportunities.

Nuclear and Radiation Engineering at UT Mechanical Engineering

The nuclear option at the University of Texas at Austin has been in existence for over forty years. The program now encompasses the fields of health physics, radiation engineering, research reactor beam port experiments, radioactive waste management and reactor and computational nuclear engineering.

An education in Nuclear and Radiation Engineering can be applied to emerging new areas and technologies. Students are prepared to work on a variety of diverse problems at the frontiers of science and technology. These areas include: Radiation Effects on Materials, Stewardship of Existing Nuclear Weapons, Managing Existing Radioactive Waste, Production Methods of Radioisotopes, Neutron Activation Analysis, Environmental Chemistry, Nuclear Electrical Power, Health Physics Applications, and Neutron Imaging.

Recent graduates of the UT Nuclear and Radiation Engineering program have gained employment at the following companies and laboratories: North Wind Environmental, Omicron, Duke Consulting, Motorola, Intel, Brookhaven National Laboratory, Lockheed Martin, Raytheon, Pantex, Fram-atome, Lawrence Livermore National Lab, Structural Research and Analysis US Nuclear Navy Corporation.

UT Mechanical Engineering offers both a Master’s of Science and a Ph.D. in Nuclear and Radiation Engineering. Nuclear and Radiation Engineering is offered as an option in the Mechanical Engineering undergraduate degree program. For more information access the Nuclear and Radiation Engineering website at http://www.me.utexas.edu/~nuclear
Most people accept that the Earth is round and that gravity is constant. Well, hold on to your cowboy hats, folks, scientists now know that the Earth is globular, even lumpy! And don’t let changes in gravity get you down because now there’s a new way to find oil! Turns out — mass on Earth is distributed unevenly. Because of this uneven distribution, the pull of gravity depends on where you are. The farther you are from the Earth’s core (i.e. the Earth’s center of gravity), the less you will be "pulled down" by gravity and the less you will weigh. This is truly good news for all y’all dieters out there who are planning a move to the mountains!

Now consider that the distribution of the Earth’s mass is in constant flux. This is largely due to factors such as the water cycle, ocean currents, the flow of magma, the movement of glaciers, etc. Clearly, mass distribution on Earth varies over time. Well then - you might conclude – gravity distribution must also vary over time. Bingo! — Buckeroo — gravity on Earth is not likely to stay constant in any one place. Of course these variations are so minute that we in our daily lives might never notice them. The exciting part comes when you realize that by studying and mapping changes in gravity, we are suddenly able to deduce factors behind other phenomena which do radically affect our lives. Because of the new NASA Gravity Recovery and Climate Experiment (a.k.a. GRACE) within five years scientists will have a greater understanding and ability to predict El Nino events. They will have data on the rates of melting glaciers and even the ability to determine the location new oil reserves. Quantum physicists see the potential to develop applications that would enable the construction of highly detailed three dimensional maps of Earth’s underground structure — essentially rendering the Earth’s surface transparent. GRACE promises something for everyone.

The debate over global warming is about to heat up. With the data gathered by GRACE, scientists will be able to trace the transport of water and heat between the oceans, atmosphere and land vital to the study of global climate change. Scientists will be able to use the temporal GRACE data to infer the amount of water in large river basins and to estimate the amount of water stored in aquifers. Researchers will be able to calculate long term changes in sea level and changes in the thickness of polar ice sheets. And that’s not all. After oceanography and global climate studies are completed, data from GRACE will be used to understand the internal structure of Earth.

Mechanical Engineering Alumnus, Dr. Byron Tapley, BSME ’56, Director of The University of Texas at Austin Center for Space Research, is the director of the GRACE mission. GRACE is an international collaboration between NASA of the United States and DLR (Deutsches Zentrum fur Luft und Rumfahrt) of Germany. Russia pitched in by supplying its Rockot vehicle(a Russian SS-19 ICBM with a Breeze upper stage) and her launch facilities in Plesetsk,
How it Works

The satellites are identical twins, nicknamed Tom and Jerry. Each satellite weighs 950 lbs. Tom and Jerry were deployed to fly in formation, with one approximately 140 miles in front of the other. As they travel around the Earth in their 311 mile high orbits, the distance between them is measured continuously with highly accurate K-band and Kα-band range finders. Variations in gravity deflect the orbit of the lead satellite, causing it to speed up or slow down relative to its twin. For example, a region of higher gravity will cause each satellite to alternatively speed up or slow down as they pass overhead. Say the front satellite approaches an area of higher gravity. It will then be pulled toward the area of higher gravity and will increase its speed to get there. This causes the distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. The distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. The distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. The distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. The distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. Changes in the distance between the satellites reflects changes in the gravity levels that the two satellites encounter. Equipment sensitive to 10 microns detects and records the satellites’ paths and any deviations that occur as the result of changes in the gravitational field. An instrument aboard the satellites called an atmospheric limb sounder measures the amount of distortion given by Earth’s atmosphere. That ability, coupled with Global Position System technology allows scientists on the ground to monitor changes in the speed and distance between the spacecraft.

a former intercontinental ballistic missile site. Scientific data processing, distribution, archiving and product verification are managed under a cooperative arrangement between NASA’s Jet Propulsion Laboratories (JPL), DLR, The University of Texas at Austin Center for Space Research and Germany’s Earth Research Center (GeoForschungsZentrum). A control center in the MCC building in Northwest Austin, operated by engineers and graduate students, supervises the flights of the satellites. The day-to-day operations are carried out in Germany. UT will only get involved in the event that problems develop with the mission. If that happens, UT will help formulate solutions.

The GRACE satellites transmit data each day to the DLR which sends the data electronically to NASA’s JPL (Jet Propulsion Laboratory) and then on to UT’s Space Research Center where researchers use it to draw new maps of Earth’s gravity field. One complete global gravity map will be developed each month for the next five years, allowing researchers for the first time ever to study fluctuations in gravity over time. For all who are interested, the data will be released through free public access websites at NASA and in Germany beginning sometime around September 2002.

There are limits to the data that the satellites can provide. Anything that changes or cycles in less than a month, the time that it takes the satellites to complete a single scan, is impossible to study in detail. Any change in mass smaller than 2.8 billion tones is invisible. GRACE also picks up an overall gravity signal, which is a composite of the gravitational pull from various features such as water, ice and rocks. The challenge is to distinguish between the different materials in the signal. One factor in determining the source of the data is the time scale involved. Rivers are expected to produce faster changes than ocean currents, and ocean currents should produce faster changes than deep magma flows. Other information such as rainfall data help to distinguish between different events.

GRACE Promises Greater Knowledge of:

- Quantities of Global Ice Deposits and their Rates of Change
- Pacific Sea Surface Temperatures
- Subsurface Ocean Currents
- Global Climate Change
- The Water Cycle’s Affect on Gravitational Fields
- Amount of Fresh Water Entering the Oceans from Melting Glaciers
- Underground Oil Field Locations
- Magma Locations
- Huge Sea Currents that Shape Earth’s Climate
- Subterranean Structural Features

How it Works

The satellites are identical twins, nicknamed Tom and Jerry. Each satellite weighs 950 lbs. Tom and Jerry were deployed to fly in formation, with one approximately 140 miles in front of the other. As they travel around the Earth in their 311 mile high orbits, the distance between them is measured continuously with highly accurate K-band and Kα-band range finders. Variations in gravity deflect the orbit of the lead satellite, causing it to speed up or slow down relative to its twin. For example, a region of higher gravity will cause each satellite to alternatively speed up or slow down as they pass overhead. Say the front satellite approaches an area of higher gravity. It will then be pulled toward the area of higher gravity and will increase its speed to get there. This causes the distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. The distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. The distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. The distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. The distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. The distance between Tom and Jerry to increase. As the first satellite straddles the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. As the trailing satellite passes the area of higher gravity it slows down allowing the second satellite to catch up, decreasing the distance between the two. Changes in the distance between the satellites reflects changes in the gravity levels that the two satellites encounter. Equipment sensitive to 10 microns detects and records the satellites’ paths and any deviations that occur as the result of changes in the gravitational field. An instrument aboard the satellites called an atmospheric limb sounder measures the amount of distortion given by Earth’s atmosphere. That ability, coupled with Global Position System technology allows scientists on the ground to monitor changes in the speed and distance between the spacecraft.

Dr. Byron Tapley, BSME ‘56
Director UT Center for Space Research and Director of the GRACE Mission

For more information, you may access the following websites:

- [http://www.csr.utexas.edu/grace](http://www.csr.utexas.edu/grace)
- [http://www.jpl.nasa.gov/grace](http://www.jpl.nasa.gov/grace)
- [http://op.gfz-potsdam.de/grace/index GRACE.htm](http://op.gfz-potsdam.de/grace/indexGRACE.htm)
Steve Nichols, BSME '72, MSME '73, PhDME '75, J.D. '83, has been appointed associate vice president for research at The University of Texas at Austin. Dr. Nichols will oversee university-wide activities related to technology transfer, protection of intellectual property and commercialization. The position will report to the vice president for research, Dr. Juan Sanchez. Dr. Nichols, the Clint W. Murchison Chair of Free Enterprise in the College of Engineering and associate professor of mechanical engineering, held previous positions as the Director of the Center for Electromechanics, Director of the Center for Energy and Environmental Resources, Director of the Senior Design Projects Program and Associate Chair of Mechanical Engineering Alumni & Industrial Relations.

The mission of the Office of the Vice President for Research at The University of Texas at Austin is to support the education, research, and service missions of The University of Texas by facilitating the transfer and commercialization of the knowledge base of The University. As the Associate Vice President for Research, Dr. Nichols' position is to manage the process of technology commercialization by working with faculty, staff, and students to support that mission. Dr. Nichols' goal is for The University to be seen as the model for technology commercialization for public universities. "Our efforts should ensure that the knowledge base of The University enures to the benefit of society not only philosophically but also practically."

"I am very pleased that Dr. Nichols has accepted the challenge to lead The University of Texas at Austin to a position of national prominence in technology transfer," said Dr. Juan Sanchez. "Steve brings superb qualifications to the job. As past director of two major research centers, he has firsthand knowledge of the depth, breadth and value of the intellectual property created by our faculty, researchers and students on a daily basis. As an entrepreneur, he brings personal experience and a clear understanding of the difficult path towards commercialization."

"I am very excited about the position since it matches well my own interest in developing entrepreneurship at The University of Texas at Austin - a goal I know is shared by the leadership of The University and the colleges," Nichols said. "Over the last two years, 14 new companies were launched to commercialize UT Austin technologies. I intend to build on this momentum in close collaboration with the colleges and key research centers at The University of Texas at Austin."

Dean Streetman also received the change enthusiastically, "Commercializing ideas and inventions and the development of intellectual property are intertwined, and I believe Nichols will raise significantly the level of both at UT. Our students and faculty will benefit from his experience and enthusiasm for developing new technologies, protecting the intellectual property, and bringing the resulting products to the marketplace."

Right away there are some administrative and procedural improvements that he is pursuing, but the most interesting changes, says Nichols, involve the education and research activities. One of the key elements of success is the cooperation among various colleges, schools, research centers and administrative units of UT-Austin. Dr. Nichols has been impressed with the amount of support that these efforts have received across campus. It may be useful to give an example of that cooperation that he believes supports the commercialization activities. On September 1, 2001, Dr. Nichols took on the position of Director of the Murchison Chair of Free Enterprise in the College of Engineering. Faculty, staff, and members of the Engineering Foundation Advisory Council (EFAC) had just completed a revision of the mission of the Chair. The new mission of the Chair is "to create and nurture a culture of technology innovation, creativity, and leadership at The University of Texas at Austin and the global community that we serve." (In a related activity, the Department of Mechanical Engineering began implementation of PROCEED that should increase innovation, creativity, and leadership.) As part of the activities of the Chair of Free Enterprise, faculty, staff, and students from the College of Engineering are working with faculty, staff, and students in natural sciences, business, and law (as well as staff from IC2 and the Austin Technology Incubator) to identify UT-Austin technologies that have strong potential for commercial success.

When asked if there were any words of wisdom he would like to pass on to our students, Dr. Nichols responded that he would gladly accept any words of wisdom that our students or alumni had to offer him. "I argue that the faculty of the College of Engineering has worked diligently to create a learning environment that challenges students and encourages technology innovation and creativity. I believe that successful engineers need these attributes to succeed whether in a commercial or in an academic setting. (We hope to be educating the next generation of leaders in engineering.) I strongly encourage our alumni and our future alumni (current engineering students) to embrace innovation and to help lead our society in designing a better world."
Applied Materials Gives $500,000

Contributed by Joanna Hofer

Applied Materials has pledged to give UT Mechanical Engineering $500,000 in support of the department’s new Project Centered Education Initiative (PROCEED). The Department of Mechanical Engineering will receive Applied Materials’ gift in incremental amounts of $100,000 each year over the next five years. The first installment of $100,000 has already been received for the year 2001. “This is an excellent time to support the department,” stated UT Mechanical Engineering Chairman Dr. Joe Beaman, “It is an exciting time in the history of the department and in the history of mechanical engineering discipline. The comprehensive education that mechanical engineers receive continues to insure that mechanical engineers are exceptionally well positioned to apply their degrees to a diverse range of problems. Our graduates continue to enjoy the benefits and security that a solid education provides in the form of a wealth of career opportunities within the global market - many of those opportunities supplied by such fine organizations as Applied Materials.”

The Project Centered Education Initiative (PROCEED) aims to change UT Mechanical Engineering’s undergraduate educational model to “just in time” education. The PROCEED style educational model promotes academic conditions which focus on solving tangible problems. Early in their academic careers, students are required to get actively involved to find “hands on” solutions to “real life” challenges.

The first round of Applied Materials PROCEED funding targets ME 302 Introduction to Engineering Design and Graphics (to be headed by Dr. Ron Barr), ME335 Probability and Statistics for Engineers (directed by Drs. Elmira Popova and John Hasenbein) and ME343 Thermal Fluid Systems (headed by Dr. Phil Schmidt).

The Department welcomes inquiries from alumni. For more information about how your company can become a corporate partner in PROCEED, please contact:

Dr. Philip Schmidt, PROCEED Director, pschmidt@mail.utexas.edu, or Dr. Joe Beaman, ME Department Chair, jbeaman@mail.utexas.edu. You may also write to the Department at:

The University of Texas at Austin
Dr. Phil Schmidt
Mechanical Engineering Dept.
1 University Station C2200
ETC 5.160
Austin, Texas 78712

Keys Curry, BSME ‘58, 2001 College of Engineering Distinguished Graduate

Reprinted from COE Website

Keys Curry has a long, successful history of combining his engineering background with skillful entrepreneurship. Since graduating from UT, he has started, or been a principal in, four companies, two of which were taken public with very successful initial public offerings. He has achieved licensure as a Texas professional engineer and a Texas real estate broker, acquired an M.B.A. and ran enterprises in computer software, mineral acquisition and power generation engineering.

Mr. Curry began his career at the Westinghouse Electric Corporation, where he held the position of sales engineer for seven years. In 1967 he received his M.B.A. from the University of Houston, and the following year launched Land Value Dynamics, Inc, a computer software firm, where he held the posts of founder, president and member of the board of directors. Two years later, he became founder, vice president and executive committee member of Steve T. Cochran and Associates, Inc. His next venture was as founder, president and member of the board of directors of Texas Resource Development Corporation, a mineral acquisitions firm. From 1978-87 he held various executive positions with Power Systems Engineering, Inc., that launched a successful initial public offering in 1986 as PSE Inc. (AMEX), rising to become president and chief operating officer from 1987-89. Between 1989 and 1997 he served as executive vice president and chief operating officer and subsequently as president and chief operating officer of Destec Energy, Inc., an independent power firm specializing in combined cycle electric power generation and coal gasification and clean gas technology. He was a member of the National Petroleum Council from 1987-97.

His dedication to the College of Engineering is reflected in a wide range of College-related and University-wide leadership roles. He has long been active in recruiting talented Houston-area high school students to engineering at UT, is a two-time past chair of the Engineering Foundation Advisory Council, a member of the Department of Mechanical Engineering Visiting Committee and a Friend of Alec.
Help for Small Businesses
Len Martinez, BSME ‘88 (with honors), is pursuing his dream to work for himself after a 12 year career with IBM Corp working as an Internet and ebusiness Specialist/Consultant and two years in a senior management role with a small consulting firm. His new role includes recruiting the self-employed (contractors, small business owners, those who pay for their own benefits, etc) to a non-profit group called the National Association for the Self-Employed (NASE). Leveraging the power of numbers (over 400,000 members) in purchasing, NASE provides people access to deep discounts on products they already buy, including group rate health insurance and universal life plans.

NASE started in the Dallas / Fort Worth area 22 years ago, with the express purpose of trying to create some buying power for small or independent business people. It has since grown into a progressive and active lobbying non-profit organization. NASE sponsored the legislation that increased the self-employed person’s tax deduction for health care premiums and long term health plans from 50% to 60% to 70% this year, and eventually, to 100%.

Membership is created through people like Len Martinez who are called “enrollers.” A person may join for either $30 or $45 a month. Benefits are very extensive, but people usually join due to a financial incentive provided by just one or two benefits. They are not geared at “selling” anything, but rather at providing discounts on products people already need. Membership is mostly nationwide, but several do relocate internationally and many stay in touch.

NASE sends out regular newsletters and a magazine to members. The newsletter is an update of lobbying activities, opportunities like scholarships and general information. The magazine is full of useful business and personal articles like tax planning, retirement planning, marketing guidelines and tips, how to(s) like “how to read a financial statement easily” and include: Washington update (president of NASE), Retirement Planning (local financial radio show host), dealing with IRS, leveraging the IRS 105 code (allows some married couples to deduct 100% of their health care costs, including out of pocket expenses, legally and easily), mistakes small business owners make, long term care discussion - who needs it(?) and technology in small business.

NASE is a dues-paying association. Some benefits include low cost insurance and networking events. The insurance portion, if desired, is subject to underwriting. The two most popular benefits, by far, are the Association 105 benefit – write off premiums, co-pays, deductibles, medical expenses, etc AND health insurance purchased at the NASE group rates (but written on an individual basis - transportable, non-cancellable, no single out for increase or non-renew). NASE also has several annual events for its members which provide networking opportunities.

For more information: Go to the company website at http://www.nase.org
Or see Mr. Martinez’s website at http://www.lenmartinez-ins.com

Jerri Paul - New DVC Chair
Jerri Paul, BSME ‘95, MSME & MBA ‘97, will serve as Chairman of the Mechanical Engineering Visiting Committee beginning in Fall 2002. The Department Visiting Committee is a prestigious organization of distinguished engineering alumni, industry leaders and entrepreneurs. Their role is to advise the department on questions of policy, curriculum, and direction. While working at Ford Motor Company, Ms. Paul championed the ME Department’s fund raising efforts. In particular, she has been instrumental in the development of PROCEED and the implementation of the ETC second floor renovation project. Ms. Paul makes UT Mechanical Engineering history by her acceptance to serve as the first female chairman.
James W. Jones Appointed ASME Government Fellow

On April 2, 2002 The American Society of Mechanical Engineers (ASME International) appointed Dr. James W. (Bill) Jones, P.E.,BSME '66, MSME '68, and PH.D '73 from the University of Pittsburgh, PA., to serve as an ASME federal government fellow. Dr. Jones will serve on the staff of the security and international division of the White House Office of Science and Technology Policy (OSTP). His 1-year term began April 15, 2002.

Jones, a consulting engineer for more than 25 years, is recognized as an expert in the design and analysis of pressure vessels using the ASME codes. He will apply his knowledge and expertise as a consultant in the area of nuclear engineering and pressure vessels to the OSTP staff, which serves as a source of scientific and technological analysis and judgment for the President and others within the executive office, with respect to major policies, plans and programs of the federal government.

Under the ASME Federal Government Fellowship Program, selected Society members have the opportunity to spend one year in Washington, D.C., working in the White House Office of Science and Technology Policy, on the staff of a congressional committee, U.S. representative or U.S. senator. ASME congressional fellows conduct research, draft bills and provide engineering and technical advice to policy makers in the White House, Congress and federal agencies.

From 1968-72, Jones worked on the design and analysis of naval nuclear power plants while employed at the Westinghouse, Bettis Atomic Power Laboratory. Later, he became a consultant for both nuclear and fossil-powered plants and was involved in the development of design and analysis methodology of the liquid metal-cooled fast breeder reactor plant and the fast flux test facility in Hanford, Washington.

Jones has contributed to the design, analysis and licensing of spent nuclear fuel shipping and storage containers and holds patents on the design of impact limiters for these devices. He has also been involved in the development of probabilistic risk assessment methods for spent fuel shipping.

Having worked in the field of finite element analysis for over 30 years, Jones developed courses in the analysis of electronic packaging and automotive durability. After selling his consulting company to the MacNeal-Schwendler Corporation in 1998, Jones became director, Expert Solutions Group, a position he held until recently resigning to accept his current government fellow position. Jones, an ASME member since 1971 and ASME fellow since 1984, is a registered professional engineer in California, Illinois and Pennsylvania.

ASME was the first engineering society to establish a congressional fellowship program. Since 1973, ASME has sponsored the congressional fellowship to provide an opportunity for Society members to work with the U.S. Congress. As federal legislation becomes increasingly technical, the need for engineering expertise is essential.
SAE Project Update

Contributed by Deanna Stewart, Chair’s Assistant

UT SAE
The UT Chapter of the Society of Automotive Engineers (SAE) was established in 1980 by Dr. Ron Matthews and three ME students, Paul Miller, Mike Best and Robert Edwards. From that time on, SAE has provided students the opportunity to tangibly apply what they learn in the classroom. The goal of SAE is to improve engineering education by getting students involved in real-world engineering design projects. While students design, modify, and build vehicles, they learn time management, project management, and teamwork - all of which are important to engineers. Participating in SAE gives students hands-on experience that they can put to work immediately, enhancing their prospects upon graduation and furthering their careers.

Formula SAE
In 1981, Dr. Matthews founded Formula SAE (FSAE), which is part of SAE International’s Collegiate Design Series. Student members design and build a small formula-style racecar. The only limitations are on the car’s frame and engine. Students are able to use their knowledge, creativity, and ingenuity for all other aspects of the car. UT FSAE tries to design and fabricate as much of the car as they can; other parts, such as the muffler and the engine, the raw materials and software are donated by sponsors. The completed vehicle is judged on static inspection and engineering design, solo performance trials, and high-performance track endurance.

The Formula SAE Competition has grown from 4 national schools hosted by UT Austin in a parking lot-turned racetrack to 125 international schools hosted by a consortium of automakers at the Pontiac Silverdome. The 2002 competition included teams from as far away as Venezuela, Japan, Korea, and England. UT FSAE - whose sponsors include the College of Engineering, Ford, GM, Honeywell, and PerkinElmer— placed 50th overall in the 2002 competition (a rear wheel broke during the endurance race). After the team returned to Austin, they learned that they had won second place in the Functional Digital Formula Car Award. The prize of $250 and a trophy is awarded by MSC Software ADAMS (formerly Mechanical Dynamics, Inc.) for the most effective use of virtual prototyping tools while engineering the Formula SAE car. The 2002 team members were Jeff Gensler (Chief Engineer), Everett Barksdale (Team Captain), Salomé Balderrama, Sameer Bhat, Perry “Aaron” Hutchison, Susan Levy, Joey Liotta, Ross Patterson, Aaron Riley, Travis Rouse, Nick Schroeder, Sujesh Thomas, and Ruben Vasquez. The UT FSAE team has already begun to prepare for the 2003 competition. The first step is to thoroughly test the 2002 car to see which aspects worked and which should be redesigned. Seven students have been working on the effort this summer, including interim co-Captains Sujesh Thomas and Nick Schroeder. Dr. Matthews hopes to have about fourteen students working during the fall with Team Captain Rex Travis.

Longhorn Solar Race Car
The University of Texas at Austin is also host to the Longhorn Solar Race Car Team, but UT FSAE has not participated since the LSRCT’s first year due to budget constraints. UT FSAE has an annual budget of $20,000 to $30,000, which is almost a shoestring compared to that of LSRCT ($80,000).

1937 Chevys
Not all of UT SAE’s projects are aimed at competition. One of their “fun” works-in-progress is a pair of ‘37 Chevy sedans. Former SAE president John Ramsey got one of the sedans donated in a bit of good luck. He noticed the car sitting in front of Carlisle Chevrolet in Waxahachie, TX, and approached the owner, who turned out to be ME alum Frank Blankenbeckler. After two years of cleaning, painting, and repairing, the car has been fully restored, including original-style mohair upholstery.

The other sedan came into the SAE garage in a trade for an old engine. It is also being cleaned up, but the end result will be a thoroughly modernized hot rod. It will have a V-8 engine, air-conditioning, and disc brakes. So far the frame has been completed, disc brakes have been put on the front, and the rear end has been modernized. The body is being worked on at a local body shop. When completed, SAE will display the two vehicles for comparison at car shows and also for visitors to the University. During the spring of 2002, the SAE members who worked on the cars were John Langsdorf (Captain), Aaron Riley, Matt Simister, and Matt “Rex” Travis.

Distillation System
Last year, Dr. Matthews, with a team of colleagues, patented an on-board
distillation system that promises to reduce vehicle emissions by 50 percent or more! According to Dr. Matthews, the beauty of the distillation system is its compact nature, and that it works on the engine, as opposed to other systems that are bulky, use costly precious metals and do not affect emissions until they reach the exhaust system. This summer, Dr. Matthews is installing the prototype into a Ford 2001 Lincoln Navigator, which will be further tested and refined in the upcoming year.

Dr. Matthews
The members of SAE all agree that they are lucky to have Dr. Ron Matthews as their faculty advisor and mentor. In honor of his personal achievements and his work with UT SAE, Dr. Matthews won several awards from SAE International in 2002: the Faculty Advisor Award, the “Triple E” (Excellence in Engineering Education) Award, and the Myers Award for Outstanding Student Paper as a co-author. In addition to these awards, Dr. Matthews was named a Fellow of SAE, a prestigious and honorary grade, recognizing individuals whose technical or scientific achievements have brought about meaningful advances in the fields of technology covered by SAE.

For more information about the UT SAE access the website at:
(http://www.me.utexas.edu/~sae/)

Contributed by Deanna Stewart. Deanna works as the Chair’s Assistant. She graduated from The University of Texas at Austin in 1996 with a double major in German and English.

Update on Operation SuperCharge

Operation SuperCharge
Founder - Jerri Paul (BSME 95, MSME & MBA 97)

Operation SuperCharge
Team Drivers
Jeff Cloud (BSME 93)
Bruce Croker (BSME 92)
Erik Frank (BSME 96)
Courtney Frey (BSME 00, MSME 02)
Jim Moritz (BSME 86)
Jerome Morrow (BSME 95)
Dick Morton (BSME 83)

2000 Operation SuperCharge
Donors

Platinum
Jerri Paul (BSME 95, MSME & MBA 97)
David Perkins (BSME 85, MSME 96)
Dean Seime (BSME 83)

Gold
Rudy Acevedo (BSME 84)
Kent Browning (BSME 84)
Yong-Duk Cho (BSME 84)
Dr. Wen Dai (MSME 92, PhD ME 95)
Gordon England (BSME 85)
Gus McGrath (BSME 85)
Jim Miller (BSME 85)
Dick Morton (BSME 83)

Silver
Jeff Cloud (BSME 93)
Don Glover (BSME 86)
David Kieke (BSASE 01)
Prof. Ron Matthews (SAE Faculty Advisor)
Carl Morris (BSME 82)
Byron Smith (BSME 86)
Scott Story (BSME 90)
Joe Strubhar (BSME 97)
Ravi Subramanian (BSME 91)

Bronze
Holger Boehm (BSCE 90)
Stephanie Brew (BSME 99)
James Chiu (BSME 82, MSME 88)
Jeff Clawson (BSME 82)
James Cole (BSME 89)
Barry Dove (BSME 94)
Erik Frank (BSME 96)
Dr. Chris Hackert (PhD ME 97)
Dr. Pei-feng Hsu (PhD ME 91)
Brett Ingram (MSME 82)
Dr. Rafiq Islam (Post-doc 96-98)
Jason Ku (MSME 98)
David Levine (BSME 95, MSME 97)
Michael Manoucheri (MSME 95)
Dave Masser (BSME 96)
Kevin Miller (BSME 81, MSME 84)
Jim Moritz (BSME 86)
Jerome Morrow (BSME 95)
Steve Nabours (BSME 00)
Dean Schoppe (BSME 89)
David Schorr (BSME 83)
Dr. Kun Shen (PhD ME 96)
Bill Smith (FSAE 80-83)
Karl Staggemeier (BSASE 82)
Dr. Rudy Stanglmaier (MSME 93, PhD ME 96)
Jim Stewart (BSME 86)
Steve Sykes (BSME 91)
Dr. Xiao Wei Zhao (PhD ME 94)
Jay Zheng (MSME 99)

CrMo
Shrik Aithala (MSME 01)
Christopher Barker (BSME 02)
David Baskett (BSME 87)
Brett Bickerton (BSME 00)
Vijay Bobka (BSME 96)
Cam Carter (BSME 81)
Brad Cox (BSME 03)
Carroll Dase (BSME 95)
Ted Gaubert (BSEE 03)
Dr. Jianwen Li (Post-doc 97-00)
Jack McMahon (BSME 97)
Michael Muhlert (BSME 96)
Kevin Shotts (BSME 01)
Ivan Souza (BSME 02)
Steve Vilano (BSME 00)
Chuck Villa (BSEE 86)
Prof. Billy Wood (SAE Co-Advisor 81-83)

2001 Operation SuperCharge
Donors

Platinum
Dr. Kelvin Dobbins (PhD ME 85)
Prof. Ron Matthews (SAE Faculty Advisor 80 - present)
Dick Morton (BSME 83)
Steve & Stephanie Nabours (BSME 00 & BSME 99)
Jerri Paul (BSME 95, MSME & MBA 97)

Gold
Kent Browning (BSME 84)
Dr. Tom Kliehe (PhD ME 85)
Dr. Rafiq Islam (Post-doc 96-98)
Bill Smith (FSAE 80-83)

Silver
Clark Kibler
Mike Manoucheri (MSME 95)
Carl Morris (BSME 82)
David Sprinkle (BSEE 95)

Bronze
Barry Dove (BSME 94)
Dr. Chris Hackert (PhD ME 97)
Prof. Matt Hall (SAE Co-Faculty Advisor)
Dr. Pei-feng Hsu (PhD ME 91)
Dr. Yiqun Huang (PhD ME 01)
Mark Koeroghlian (BSME 82, MSME 87)
Mohammed Golam Sarwar (MSME 91)
Dr. Rudy Stanglmaier (MSME 93, PhD ME 96)

CrMo
Vijay Bobka (MSME 96)
Jason Cotrell (BSME 95, MSME 97)
Kevin Miller (BSME 81, MSME 84)
Dr. Kun Shen (PhD ME 96)
Operation Phoenix
Contributed by Kelsey Evans, COE Associate Director of Development

History

In the early 1950’s, engineering students and faculty worked shoulder to shoulder to excavate a recreation and study lounge beneath Taylor Hall. Twenty-one students and two faculty members removed the first shovels of dirt on December 4, 1952. Over 3,000 students were ultimately involved in “Operation Gopher,” as it was termed, and together built the “Taylor-T Room.” College alumni joined the effort donating $27,000 and by the time the project was completed students and faculty had removed more than 2,300 cubic yards of dirt and rock to create the 8,000 square foot lounge.

In 1982, when Engineering students left Taylor Hall and the Mechanical Engineering Department moved into its new home in Engineering Teaching Center II (ETC), students and faculty left behind the Taylor-T Room. The T-Room had been a gathering place for engineering students – a special place where engineers could come together as a community to discuss everything from Heat Transfer to the upcoming Football game. It was a second home for all who entered its walls.

The Project

The twenty years since Mechanical Engineering moved from the T Room have taken a toll. The camaraderie of the old days has drifted away. But a renewal is on the horizon—a “phoenix” is on the way, thanks in part to a $1.2 million gift from the Ford Motor Company that will assist in the renovation of the ground floor area of ETC II. This renovated space will become the new gathering area for engineering students and will again be known as the T-Room, in honor of the original Taylor-T Room.

What’s Next

ME’s goal is that Ford Motor Company’s $1.2 million gift, which will be paid over four years, will excite it’s Alumni and stimulate additional support for this project. Indeed the department hopes to raise an equal amount of money, $1.2 million, to match the Ford gift for construction, plus an additional $2.5 million, for a total of $3.7 million through an effort called “Operation Phoenix.” The funds raised will not only renovate existing lobby space into the new state-of-the-art T-Room, they will also be invested into an endowment for the Mechanical Engineering Department. These funds will greatly enhance the community and the educational opportunities available to Mechanical Engineering students and faculty.

Operation Phoenix Initiatives

T-Room Highlights
* 5,000 square foot area designed to promote community and teamwork
* Open and bright workspace with moveable furnishings and whiteboards for informal and comfortable student / faculty “fireside” areas
* Quiet, carpeted individual study carrels with data-hook-ups and privacy screens to facilitate research and studying
* Wireless network throughout T-Room to maximize available study space
* 10’ floor-to-ceiling bay windows overlooking Waller Creek to promote natural light
* Durable terrazzo flooring throughout walkways and T-Room to enhance aesthetic space

* Technology Learning Labs to provide 2-way access to industry experts, corporate leaders and other university researchers through real-time internet broadcasts and video conferencing
* New technology to allow for distance learning and enhanced interactions among students and faculty
* Engineering History and Technology exhibit on display to reinforce heritage of discipline and department
* Snack bar area to increase time spent in the ME community

ME Endowment Overview

* Distributions from endowment will award scholarships, leadership initiative awards, faculty seed funds, and program enrichment resources to enhance the ME community
* Portion of endowment distribution will launch the Creativity and Technical Innovation Fund which will support budding entrepreneurial undergraduate and graduate students with seed funds for Design Competitions and Idea to Product forums
* The ME Endowment fund, and all donors associated with this effort, will last in perpetuity as the builders of Mechanical Engineering’s 2nd century

For More Information or to Contribute, please call Kelsey Evans at (512) 471-6151, or e-mail kelsey.evans@mail.utexas.edu.
Alumni News Information Form

Name: ____________________________________________________________

Class: ____________________________________________________________

Street Address: (Home, Work) _______________________________________

City: _____________________________________________________________

State: ____________________________________________________________

Zip: ______________________________________________________________

Phone: (Home, Work) ______________________________________________

E-Mail: ____________________________________________________________

Company: __________________________________________________________

Position: __________________________________________________________

Would you like to volunteer to help organize UT ME Alum Activities for your City or Business? Y N

What is your favorite Alumni activity or event and why?

______________________________________________________________

News: (Please jot down the news that you would like to share with your fellow Alum in the space provided below.)
Department News

Mechanical Engineering History Book Project

Dr. Grady Rylander, Jr., UT BSME '43 and UT MSME '52, and PhD '65 from Georgia Tech has taken on the project of writing a book which chronicles the history of The University of Texas Department of Mechanical Engineering. Dr. Rylander, a former Chairman of the ME Department, has long been known for his story telling ability and says he has the added benefit of having "experienced half of the department's history first hand". Rylander says it’s now just a matter of remembering it all. Dr. Rylander has two assistants on this project - which our current Chairman, Dr. Joe Beaman, would like to see finished by January 1, 2003. They are Joanna Hofer, an Alumna of The University with a Liberal Arts degree in Russian, East European and Eurasian Studies and Dan Loew a graduate of the University of Wisconsin, Madison with a B.A. in Psychology. The history book promises to be an interesting undertaking and already has entries from former UT Mechanical Engineering Chairmen and alumni. If you have anything you would like to contribute to this effort or if you would be willing to answer some “historical questions”, please contact Joanna Hofer at hofer@mail.utexas.edu or via mail at:

The University of Texas at Austin
Joanna Hofer
Mechanical Engineering Dept.
Alumni & Industrial Relations
1 University Station C2200
ETC 5.160
Austin, Texas 78712

ETC 2nd Floor Renovation Project Comes to Completion February 2003

The Department of Mechanical Engineering is all a buzz these days in preparations for our building’s second floor renovation project. The Ford Motor Company Operation Phoenix Fund has generously donated funds for work on this project with the help of Alumni Support, the Grand Opening will be some time next Spring!

Explore UT
On Saturday, March 2, 2002, Texans of all ages were invited to EXPLOR- E a variety of adventures to enjoy:

“getting blown away by the supersonic wind tunnel, reporting for jury duty at a mock trial, sinking your teeth into vampire fangs, compounding a medicine, taking a pulse, boning up on bones, climbing rocks and building blocks, exploring your career frontier, unearthing fossils and devouring dinosaurs, appren- ze à parler Français, apprenez à parler Deutsch y más in 30 minutes, tak- ing stock of a virtual market, towering above Austin at 300 feet and starr- ing in the Explore UT grand finale."

A good time was had by all! The College of Engineering itself had over 70 events. If you missed this year’s event, come see us next year, March 2003!

Shell Oil Company Foundation Supports The University of Texas College of Engineering

HOUSTON (Feb. 20, 2002)-The Shell Oil Company Foundation awarded $85,000 in six departmental grants to The University of Texas’ College of Engineering. The purpose of the Shell Departmental Grants is to strengthen activities in specified academic areas in colleges and universities with well-developed areas of teaching and research.

The Mechanical Engineering Department used the funds to support students in national design competitions and to purchase equipment and consumables for both the undergraduate and graduate computing laboratories. Overall giving from the Shell Foundation to the University of Texas in 2001 totaled $576,463.

Department Visiting Committee 2001-2002 Members

William Beazley, President of Information Assets, Inc., Houston, Texas
John Casstevens, President of Dallas Optical Systems, Rockwall, Texas
Keys Curry, Engineering Entrepreneur, Curry & Associates
Tom Dolbear, Senior Member of Technical Staff, Advanced Micro Devices, Austin, Texas
Gloria Ho Driscoll, Marketing and Sales Director, Simpler-Webb, Inc., Austin, Texas
Debra Hentz, Engineering Project Manager, Hewlett-Packard Company, Vancouver, Washington
Henry Kleespies, III, Senior Staff Engineer, Lockheed Martin Aeronautics, Ft. Worth, Texas
Gary Kott, Manager of Electrical Engineering, Fluor Daniels, Sugar Land, Texas
Jeff Kunz, President, Standard Industrial Structures Corporation, Houston, Texas
Angus McCrordouade, Commercial Manager, CSO-Aker Maritime, Inc., Houston, Texas
Brian Matusek, General Manager, Schlumberger, Houston, Texas
Stephen Morgan, Director of Operation - CPCG, Compaq Computer Corporation, Houston, Texas
Arthur Ratzel, III, Group Manager, Thermal Fluids and Aero Sciences, Sandia National Laboratories, Albuquerque, New Mexico
Rick Relyea, Investor, Austin, Texas
Brian Renz, Plant Manager, TXU Electric, Tatum, Texas
Elliott Short, Principal Mechanical Engineer, Raytheon Company, Dallas, Texas
Colonel Nathaniel Sledge, Jr, Project Manager, Combat Ammunition Systems, Picatinny Arsenal, New Jersey
Ben Sumrall, Senior Director, Applied Materials, Austin, Texas
Warren Waggoner, Manager: Systems Software, ExxonMobil Corporation, Houston, Texas
Susan Wang, University Relations Manager, Halliburton, Houston, Texas
UT Student Design Projects Make a Difference
Contributed by Matthew Green, MSME 2001 and PhD

Service Oriented Design
UT ME students are making a difference in their local and global communities through service-oriented design projects. Recent projects provided enabling devices to Austin children with disabilities and others supported medical relief in rural Mexico. Soon students will begin designing affordable transportation for rural areas of developing countries. In addition to helping those in need, these service-learning projects broaden engineering education into a “global and societal context,” exposing students and faculty to new research and career opportunities addressing humanitarian issues.

Enabling Austin’s Children
Students taking Dr. Kristin Wood’s graduate prototyping class deliver working designs to “customers” with physical disabilities in Austin area schools. Since 1994, twelve teams from UT Austin have won an international rehabilitation engineering (RESNA) design competition. Figures 2 and 3 show two RESNA winners currently used in Austin schools. The assistive bowling device, Figure 2, allows people with disabilities to bowl with more autonomy and normalization than current wheelchair bowling ramps offer.

Design for Medical Relief Workers
Some ME students taking the 366J Design Methods class have chosen to do service-oriented projects. A recent project was for medical relief teams that make semi-annual trips into rural Mexico and establish a temporary clinic, hospital, and operating room. The medical team needed a device to capture waste heat from a 5kW diesel generator and heat water for cooking, bathing, and medical purposes. Design constraints included strict limitations on weight, volume, cost, and complexity.

Students passed their conceptual design reports on to a graduate student for detailed design, prototyping, and field-testing. During a two-week operation in rural Mexico, the $50 prototype, Figure 1, heated 5 gallons per hour of tap water to 150°F. The unit is light, small, and simple to operate and maintain.

Figure 1: Field Testing in Mexico
Figure 2: Assistive bowling device.
The adaptive key handler, Figure 3, allows a wheel-chair user with severely limited strength and range of motion to use key-operated elevators and doors. The device was designed to be compact, portable and lightweight for use by an 11-year-old student with rheumatoid arthritis.

Figure 3: Assistive key handler.

Affordable Transportation for Developing Countries

Future plans include “K” Capstone Design projects sponsored by the Institute for Affordable Transportation\(^1\) (IAT). IAT is evolving a vehicle design, Figure 4, intended to revolutionize transportation (and life) in rural areas of developing countries, much as the Model-T did for the US. The non-profit group has issued a national call for engineering students to participate in designing a charter vehicle. UT ME students will decompose the “Basic Utility Vehicle” design problem into subsystems, and optimize them for exceptional simplicity, durability, and low cost. The final IAT design will be placed in the public domain, and ultimately help reduce poverty by enabling transportation of people and crops to market.

Matthew Green is an ME Ph.D. student researching applications of engineering design in developing countries. Contact: matthew.green@alumni.utexas.net

See Also, Student News, p. 27


\(^7\) “Basic Utility Vehicle Design Competition”, Institute for Affordable Transportation, www.drivebuv.org
Understanding the Cytoskeleton

Responding to the dearth of information explaining the structural behavior of the eukaryotic cytoskeleton, University of Texas Mechanical Engineering Associate Professor Dr. Tess J. Moon and her colleagues Dr. Josef Käs and Dr. Michelle Follen are collaborating to develop a quantitative framework for understanding in vivo cytoskeletal behavior. Their hope is that a greater understanding of the mechanical properties of a cell’s cytoskeleton will reveal the nature of cell elasticity and cell movement, identify specific signaling pathways and elucidate the role of each component in the cytoskeletal structural network. The findings of this research promise to revolutionize current knowledge of the cytoskeleton, and in particular, the mechanisms behind cell motility, cell division, intercellular transport and perhaps malignant transformations.

Cell Motility

The cytoskeleton is a cytoplasmic network of filamentous protein fibers that span the cytosol, providing the structural support of the cell, regulating cell function and controlling cell motility. Cellular movement is enabled when the cytoskeleton undergoes rearrangements in its structure. These movements are carefully controlled by the cell and take place at specified times and in particular locations. Primitive cells are believed to have been immobile. Diffusion within the cell was sufficient to distribute metabolites, but as cells grew larger and acquired more sophisticated functions, transport systems evolved to move materials within the cell and in some instances to mobilize the cell to locations more conducive to growth.

The majority of cells in the body are stationary but none the less exhibit routine dramatic morphological changes (i.e. changes in cell shape) which utilize the same internal machinery as those employed by their mobile counterparts. The contraction of muscle cells, the elongation of nerve axons, the formation of cell surface protrusions, such as microvilli and filobodia are all examples of cellular morphological changes which have their basis in the cell’s ability to regulate motility. “In healthy organisms,” states Moon, “cell motility is an integral part of the host’s self-defense mechanism; however, uncontrolled cell motility is a warning sign of cancer.” According to Dr. Michelle Follen, Professor of Gynecologic Oncology at M.D. Anderson, “[Dr. Moon’s research] has great promise and is well founded since malignantly-transformed cells demonstrate a dramatic disruption in their cytoskeleton.”

Below: Traditional drawing of eukaryotic cell. Cytoskeleton is not pictured.

Cell Function Regulation

Cytoskeletal disruptions not only impede cell motility but also destroy regulation of normal cell function. Growing evidence suggests that the cytoskeleton forms a complex, intracellular fiber “highway” for organelle and signaling molecule transport. Moon elaborates, “Diffusion along the cytoskeletal fiber network has been recently demonstrated to be a viable mechanism for intracellular transport of signaling molecules from cell surface to nucleus, thereby providing an effective means for cell function regulation, including gene activation and expression...changes in cell elasticity may be indicative of dramatically-altered cell functioning.”

Elasticity and Actin

One aspect of Moon’s research focuses on the role played by the cytoskeletal protein actin in the mechanism by which the cell is able to self-regulate cytoskeletal elasticity. Healthy in vivo cells can display differing degrees of elastic stiffness at different times when responding to different needs. These differing degrees of elastic stiffness occur without the action of severing and/or capping proteins, i.e. without depolymerizing and dismantling the actin filament network as preceding in vitro experimental evidence seems to indicate. Dr. Moon elaborates, “Recently, several experimental tools, such as optical tweezers, the optical stretcher and atomic-force-microscope-based-microrheology, have been developed that are capable of micromanipulating and probing a whole cell. These tools have made it possible to measure the local and global elastic displacements of intact cytoskeletons to known external load distributions. For each of these techniques, structurally – and constitutively – simple models have been developed which assume the cytoskeleton to be homogeneous and isotropic. Using these model adjuncts, estimates of the bulk cytoskeletal elasticity are extracted while the effect of individual filament networks and their interactions remain unresolved.”

The Mechanism for Varied Stiffness

An intact actin filament network can display differing degrees of stiffness depending on the cell’s changing motility needs. Dr. Moon’s research demonstrates specifically how transient crosslinking and transcellular protein migration/clustering into various ensembles can explain “a spatially – and temporally labile, actin network stiffness that conspicuously spans the viscous solution-like to viscoelastic gel-like behavior” witnessed in healthy eukaryotic cells. Therefore a healthy cell may self-regulate and fluctuate in its degree of elastic expression. This
ME Research

The Hypothesis

Preliminary findings of Dr. Moon and her colleagues have led to their hypothesis that the stiffness of the cytoskeleton (or in other words - the degree of cytoskeletal elasticity) is directly related to the concentration of actin that is in turn affected by the cell’s ability to synthesize actin. The cell’s ability to synthesize actin may also be a function of the health of its cytoskeletal fiber network. Once a cell looses its ability to synthesize actin, and thereby looses the ability to self-regulate elasticity, control of cellular motility is impaired. Impaired cellular motility and stiffness is believed to be an early diagnostic indicator of impending malignancy. Dr. Moon believes that increased understanding of the mechanism involved in cytoskeletal function is key to the development of increasingly earlier cancer detection techniques, giving doctors an ever greater chance of early identification of precancerous cells and patients an ever greater chance of survival.

Colleagues

Dr. Josef Käs directs the Institute for Soft Matter Physics at the Universität Leipzig in Leipzig, Germany. Dr. Käs is the co-inventor of the Optical Cell Stretcher and has been awarded the prestigious Wolfgang Paul Award by the Alexander von Humbolt Foundation of Germany. Dr. Michelle Follen, Professor of Gynecologic Oncology at M.D. Anderson Cancer Center, has received numerous awards and been internationally recognized for her teaching, research and clinical practice on cervical cancer diagnosis and prevention. Her research program includes chemoprevention and biomarker development, fluorescence spectroscopy as a diagnostic and screening device, the gene therapy of cervical cancer, and the epidemiology of cervical cancer.

Evacyle

Austin-based company, Evacyle Corporation (www.evacyle.com) is developing related technology for in vivo monitoring of cellular elasticity. They provide cytostructural assays and laboratory service for research, therapeutic and diagnostic applications to various sectors of the healthcare industry, most notably the metastatic cancer market.

Experimental Techniques

Using the optical stretcher, Dr. Moon and her colleagues are measuring the variability of cell elasticity within a cell line and within different clones of malignant cells transformed by H-ras. Currently, two normal fibroblasts, NIH 3T3 and BALB 3T3 and one malignant fibroblast STV 2 are being studied. The change in elastic stiffness during differentiation and malignant transformation will also be monitored. They are correlating their cell elasticity data with confocal microscopy of the cell’s actin and microtubule architecture and measurements of the cell’s actin and microtubule content. Using the qualitative model, they are backing out the respective structural contributions of actin filaments, microtubules and their interactions. This will serve to identify how tightly regulated cell elasticity is within normal and malignantly-transformed cell lines.

Probing the normal and malignantly-transformed fibroblasts with the AFM, Dr. Moon and colleagues are spatially resolving the cytoskeletal assemblies, which are primarily responsible for variations in cell motility. They provide cytostructural assays and laboratory service for research, therapeutic and diagnostic applications to various sectors of the healthcare industry, most notably the metastatic cancer market.


Zone of actin polymerization

Filopodium
August 2001

Dr. Eric Taleff receives the 2001 College of Engineering Award for Outstanding Engineering Teaching by an Assistant Professor. Nominees typically show warmth of spirit and genuine concern for both students and subject matter, while continuing to challenge students.

Dr. Eric Taleff receives the Ex-Student’s Association Texas Excellence in Teaching Award.

September 2001

Drs. Kris Wood, Joseph Beaman, Richard Crawford and David Bourrell received a $25,000 grant from Schlumberger, a French-based oil services company, for their work to combine prototyping and desktop manufacturing. “The objective of the project is to fundamentally change the engineering design process,” says Wood, “and dramatically shorten development times for engineering systems by breaking the design-test-tuning bottleneck.”

Dr. S.V. Sreenivasan teams with Austin entrepreneur Dr. Norman Schumaker and chemical engineering professor Grant Willson to found a startup technology company called Molecular Imprints, Inc. The collaboration between Willson and Sreenivasan has led to the development of a new mechanically driven process to emboss the tiny silicon chips used in computers and other household products. The University of Texas will receive royalties from the sale of products made by Molecular Imprints, Inc. which the university partly owns with Austin-based Foretel Associates Ltd.

Dr. Joe Beaman receives Best Paper Award in conjunction with research at Sandia National Laboratory at the International Symposium on Liquid Metal Processing and Casting at Santa Fe, New Mexico.

October 2001

Billy Wood is inducted into the Global E3 Executive Committee.

November 2001

Dr. Dale Klein, the University of Texas System Vice Chancellor for Special Engineering Programs, is confirmed by the U.S. Senate to become assistant secretary of defense for nuclear, chemical and biological defense programs. Dr. Klein will retain tenure as a professor of mechanical engineering.

December 2001

Dr. Paul Ho is elected fellow of the Institute of Electrical and Electronics Engineers “for contributions to metalization of and metrology for multi-level interconnects and electronic packaging.” Interconnects enable microchips to work and metalization is a method used to improve the reliability of metals in chips and helps to develop measurement techniques that can be used to measure the properties of metals. Electronic packaging refers to the way a chip is put together so that it can work in the specific device in which it will be used.

Dr. Ron Matthews is awarded the “Triple E” (Excellence in Engineering Education) Award by the Society of Automotive Engineers, presented by the society to one engineering educator each year for outstanding contributions in promoting student activities. This award recognizes outstanding contributions to engineering education, and is more often given to industry leaders that support SAE’s educational mission than to academics. The primary reason for Prof. Matthews selection for this award was that he founded the Formula SAE competition (along with his students) in 1981, hosted it for its first four years, and has had teams involved in this competition ever since. Formula SAE has evolved into the premier intercollegiate student engineering design competition in the world, and is now hosted by a consortium of Ford, General Motors, and DaimlerChrysler.

Dr. Steve Nichols, BSME ’72, is named associate vice president for research for The University of Texas at Austin. Dr. Nichols will oversee university-wide activities related to technology transfer, protection of intellectual property and commercialization.

January 2002

Ted Aanstoos, Lecturer in Mechanical Engineering, BSME ’80, MSE ’87 is named a Fellow of ASME International and is accepted to the PhD program of the LBJ School of Public Affairs beginning Fall 2002. Fellow grade is conferred upon a member with at least 10 years active engineering practice who has made significant contributions to the field.

March 2002

Dr. Joseph J. Beaman, BSME ’72, receives the College of Engineering’s Joe J. King Professional Engineering Achievement Award for exemplary leadership in the engineering profession. Dr. Beaman is a world-recognized authority in solid freeform fabrication, a manufacturing technology that produces solid objects directly from computer modeling. This innovative “Selective Laser Sintering” technology developed in his lab has generated more than $3.5 million in royalties for The University. Dr. Beaman is a Fellow of the ASME and has held leadership posts in the Rapid Prototyping Associate of the Society of Manufacturing and American Society for Engineering Education and is currently the Chairman of the UT Department of Mechanical Engineering.

April 2002

Dr. John Goodenough was conferred a Dr. “honoris causa” in Spain by the ancient University of Santiago de Compostela in a traditional Latin ceremony.

Dr. Ronald Matthews is elected a fellow of the Society of Automotive Engineers. Dr. Ronald Matthews receives the SAE Faculty Advisor Award. Of the more than 350 SAE Faculty Advisors, 6 are chosen for this award each year. Dr. Ronald Matthews shares the Phil Myers Award for the most outstanding student-authored technical paper of the year with Dr. Janet Ellzey and two of their former students, Yiqun Huang and Terrence Alger. Each of the four co-authors received a trophy, and the former students split a $3000 prize. This is the fifth year for the Myers Award, and UT has now won 40% of them (Prof. Matt Hall and his former PhD student, Mike Koenig, won in 1997). You can retrieve a copy of the news release about the Myers Award from the SAE website at www.sae.org, select “About SAE” from the top pull-down menu, and then select “SAE News”. 
Dr. Rich Crawford and Dr. Janet Ellzey were promoted to professor.

Dr. David Bogard receives the 2001-2002 Outstanding Graduate Advisor Award by The University of Texas Graduate School.

May 2002

Dr. Jonathan Bard receives the David F. Baker Distinguished Research Award from the Institute of Industrial Engineers. The award is given for lifetime work that has a significant and lasting impact on the field of industrial engineering.

June 2002

Dr. Ronald Barr receives the Spread the Word and Campus Representative awards from the American Society for Engineering Education. The award recognizes the group’s campus representative who has recruited the highest number of new faculty and student members to the society’s local region in the last year.

Dr. Sheldon Landsberger, professor of nuclear and radiation engineering, has been appointed Director of the UT Nuclear and Radiation Engineering Teaching Laboratory (NETL).

Dr. Kris Wood wins the 2002 Lockheed Martin Aeronautics Company Award for the Excellence in Engineering Teaching.

Dr. Rick Neptune receives the 2002 American Society of Biomechanics Young Scientist Award.

Dr. Shaochen Chen, assistant professor of mechanical engineering, has been awarded the Serope Kalpakjian Outstanding Young Manufacturing Engineer Award from the Society of Manufacturing Engineers.

Dr. Fred Ling retired from the UT Department of Mechanical Engineering this summer (Summer 2002). Dr. Ling has devoted his life to research, teaching and service. His efforts have increased engineering knowledge and understanding of surface mechanics, wear, friction and lubrication. Having made contributions to tribology, biomechanics and machinery durability, he is now engaged in research on manufacturing machinery effectiveness, a critical element of the microelectronics industry.

Besides holding positions as a mechanical engineer in industry, an assistant professor of mathematics at Carnegie-Mellon University (Pittsburgh, Pa.) and president of the Institute for Productivity Research in New York, Dr. Ling has spent his career in the academic arena in the engineering field. He worked at Rensselaer Polytechnic Institute (Troy, N.Y.) for 30 years (1956-1986), the last 12 as William Howard Hart professor and chair of mechanical engineering, aeronautical engineering and mechanics. He was professor of mechanical engineering at Columbia University in New York (1986 to 1990) and joined the University of Texas at Austin in 1992.

Dr. Ling has performed sponsored research for countless industrial concerns and numerous government agencies including the departments of Defense, Transportation and Energy, the National Aeronautics and Space Administration and the National Science Foundation. He has also served various agencies including the National Research Council’s Committee to Assess the U.S.-Japan Industry and Technology Management Training Programs, the Organization for European Cooperative Development and NATO’s Advisory Group for Aerospace Research and Development.

The author or editor of 11 books and some 90 archival publications, Dr. Ling established worldwide recognition for his book, Surface Mechanics (John Wiley & Sons, 1973), which brought disparate aspects of solid mechanics, heat transfer and rough surface characterization into a coherent whole. Since 1987, he has served as editor for the Mechanical Engineering Series at Springer-Verlag in New York.

For his excellence in research, Dr. Ling won the coveted Senior Fellow Award of the National Science Foundation in 1970 and was elected to the U.S. National Academy of Engineering in 1977. In the area of tribology, he won ASME’s Mayo D. Hersey Award in 1984 and the Alfred E. Hunt Award of the Society of Tribologists and Lubrication Engineers (STLE). ASME also presented Dr. Ling with the Centennial Medallion in 1980 and the Charles Russ Richards Memorial Award in 1991. Recognition in Europe includes the Joseph Marie Jacquard Medal (France) and honorary membership in Academia Romana (Romania).

A Life Fellow of ASME, Dr. Ling also holds the grade of Fellow in the American Academy of Mechanics, STLE, the American Association for the Advancement of Science and the Society of Manufacturing Engineers. He is also affiliated with numerous other professional and scientific societies including the Society of Engineering Science, New York Academy of Science, American Physical Society, National Space Society and the Machinery Failure Prevention Technology Society.


Dr. Ling received a bachelor’s degree in civil engineering from St. John’s University, Shanghai, in 1947. After emigrating to the United States, he earned a bachelor’s degree in mechanical engineering in 1949 from Bucknell University (Lewisburg, Pa.) and, in 1951 and 1954 respectively, earned a master’s and doctor of science degree in mechanical engineering from Carnegie-Mellon University. He is a registered professional engineer in the state of New York.
Student News

February 2002

Jeff Gensler, BSME 2000 and Master’s Candidate in Mechanical Engineering and his team members, Jay Fuentes and Adriana Acevedo (MSME 2001), C. R. Karyekar and Marvin Wolgast (Master’s Candidates in Manufacturing Systems Engineering), and Gulis Sule (graduate student in education) were one of five winning teams chosen in the 2002 RESNA Student Design Competition. Their winning entry was “Magic Timer: A Multi-Sensory Assistive Innovation”. A second team consisting of Dhruv Gajaria (Dotoral Candidate in Mechanical Engineering), Adi Sujanto (Master’s Candidates in Manufacturing Systems Engineering), Anshuman Cherala (Master’s Candidate in Mechanical Engineering), Praveen Bhagavathula (Dotoral Candidate in Mechanical Engineering), Aparajit Pratap (Master’s Candidate in Mechanical Engineering), Sameer Kotasthane (Master’s Candidates in Manufacturing Systems Engineering) were also chosen for their design, “An Assistive Bowling Device.” The entries were carefully reviewed by a panel of consumers, advocates, engineers, therapists, and manufacturers. The teams were students in the graduate class ME392M Product Design, Development, and Prototyping, taught by Dr. Kristin Wood. The experiential nature of the course is unique for a graduate class. The students focus on creating a working prototype for a real customer. Since creating the class in 1994, Dr. Wood has chosen projects that require the design of assistive technology devices for persons with disabilities. All students in the class submit their projects to RESNA. There has been at least one national winner from this class every year. (See Also Matthew Green’s article, p. 21)

April 2002

A team of students from the UT Department of Mechanical Engineering became the 5th UT ME team in seven years to win the Rube Goldberg Machine Contest. Team members were from the Theta Tau engineering fraternity and are as follows: Kevin Smith of Houston - team captain, Brody Knudtsen, Timon Chiang, Chris Nance and Salvador Santolucito III. This national contest was held at Purdue University in West Lafayette, Indiana and the challenge was “to build the wackiest, most inefficient method to raise, secure and wave an American flag using at least 20 steps and within a time limit.” Our ME team built a patriotic 63-step contraption. Their chain reaction began with a fire alarm that released a toy dog that triggered a miniature fireman sliding down a pole to set the mechanics in motion.

The machine used five major energy transfers that launched mechanisms, released a catapult, unlatched levers, pulled pins, tripped photo transistors, cut strings and lifted weights until a pulley released a pendulum that ultimately picked up an American flag. Incorporated in the machine were patriotic and fire-rescue related representations, including a fire hydrant, a fire escape, a Statue of Liberty lamp and a replica of the Alamo. “Our goal at first was to be competitive in the contest,” said Kevin Smith of Houston, the Texas team captain. “Then it became a way to pay tribute to fire and rescue and military personnel.”

The students received $500 and a trophy. On April 20th, the UT Tower was lit to commemorate the victory.

May 2002

Nathan Rylander was named the most outstanding undergraduate student at the 2002 Graduation Commencement.

June 2002

The 2002 UT Formula SAE team won second place (a trophy and $250) in the Digital Car Award. This award is given by Mechanical Dynamics, Inc., for the best use of computer aided engineering in the design of the Formula SAE race car. The team members are:

Team Captain - Everett Barksdale (ME)
Chief Engineer - Jeff Gensler (Master’s student in ME)
Manager - Salome Balderamma (ArchE)
Traveling Team Manager - John Robinson (ME)
Sameer Bhat (Master’s student in ME)
John Langsdorf (ME)
Susan Levy (ME)
Joey Liotta (ME)
Ross Patterson (ME)
Aaron Riley (ME)
Travis Rouse (undeclared)
Nick Schroeder (ME)
Matt Simister (ME)
Alan Stanard (ME)
Rex Travis (ME)
Sujesh Thomas (Master’s student in ME)

Prof. Matt Hall and Prof. Ron Matthews took a team of six students to the SAE Congress this year. The students entered an exhibit in the Eaton Student Booth Competition, and won Third Place, which included a $600 prize. The students were: John Langsdorf (Booth Team Captain and senior in Mechanical Engineering), John Chung (UT SAE President and senior in ASE/EM), Tina Vo (UT SAE Vice President and junior in Mechanical Engineering), Everett Barksdale (Formula SAE Team Captain and senior in ME), Alok Warey (Masters student in ME, who also presented a technical paper at the Congress), and Nick Schroeder (Formula SAE team member and junior in ME).
Community Events

War Years Reunion
CLASSES of 1940 - 1949

DATE: October 19, 2002
HOTEL BLOCK: DoubleTree Guest Suites
PRICE: $119
PHONE: 512-478-7000
IDENTIFY YOURSELVES AS: “UT Engineering War Years Reunion”
LAST DAY TO RESERVE A ROOM AT THE SPECIAL RATE: September 27th
CONTACT: Lisa Schooley
PHONE: 512-471-8850
EMAIL: lschooley@mail.utexas.edu
WEBSITE: http://www.engr.utexas.edu/alumni
RSVP to Lisa Schooley.

College of Engineering
HOMECOMING
November 8th-10th, 2002

College of Engineering Women in Engineering
DATE: November 8 - 9, 2002
CONTACT: Tricia Berry
PHONE: 512-471-5650
EMAIL: tsberry@mail.utexas.edu
WEBSITE: http://www.engr.utexas.edu/alumni
RSVP to Tricia Berry

ME Class of ’72 Reunion for Classes 1971, 1972 & 1973

DATE: Saturday, November 9, 2002
HOTEL BLOCK: Crowne Plaza Austin Hotel & Executive Meeting Center
PRICE: $159 - $179
PHONE: 1-800-2-CROWNE
IDENTIFY YOURSELVES AS: “ME Reunion”
LAST DAY TO RESERVE ROOM AT THE SPECIAL RATE: Oct 17, 2002
FOOTBALL TICKETS - first come first serve $40 per ticket
CONTACT: Joanna Hofer
EMAIL: hofer@mail.utexas.edu
PHONE: 512-471-2832
RSVP to Joanna Hofer

Taylor T - Room
Anticipated Grand Opening

DATE: TBA; We estimate February 2003
WEBSITE: http://www.me.utexas.edu/~alumni
CONTACT: Joanna Hofer
EMAIL: hofer@mail.utexas.edu
PHONE: 512-471-2832
U.S. MAIL: to the address on the back of this Newsletter
RSVP to Joanna Hofer

Back to School

DATE: TBA late August or early September 2003
GUESTS: Students, Parents, Faculty, Staff & Alumni
ACTIVITIES: BBQ, Games, Prizes
LOCATION: Eastwoods Park
TIME: 5PM
MEAL: COMPLIMENTARY BBQ
RSVP to Joanna Hofer

College of Engineering Alumni Information Tent

DATE: November 9, 2002
CONTACT: Lisa Schooley, Homecoming Coordinator
COST: Free
LOCATION: Engineering Quad, tent outside ECJ
RSVP to Lisa Schooley

Student Engineering Council 50th Anniversary

DATE: November 9 - 10, 2002
CONTACT: Lisa Schooley
PHONE: 512-471-8850
EMAIL: lschooley@mail.utexas.edu
WEBSITE: http://www.engr.utexas.edu/alumni
RSVP to Lisa Schooley

Mechanical Engineering Alumni Tailgate Party (UT vs. Baylor)

DATE: Saturday, November 9, 2002
TIME: TBA
LOCATION: ETC 5th Floor, Chairman’s Suite
HOTEL BLOCK: Crowne Plaza Austin Hotel & Executive Meeting Center
ADDRESS: 500 North IH 35, Austin, Texas 78701
PRICE: $80.00
LAST DAY TO RESERVE A ROOM AT THE SPECIAL RATE: Oct 17, 2002
PHONE: 1-800-2-CROWNE
IDENTIFY YOURSELVES AS: “Tailgate Alumni Mechanical Engineers”
FOOTBALL TICKETS: Currently sold out however you may request to be placed on the waiting list in case there are any cancellations.
MEAL: Breakfast or lunch depending on game time
PRICE: $10 per person; $5 for children
CONTACT: Joanna Hofer
PHONE: 512-471-2832
EMAIL: hofer@mail.utexas.edu
U.S. MAIL: to the address on the back of this Newsletter
RSVP to Joanna Hofer

Art in Engineering: The official invitation was sent out at the beginning of September.
P. Barry Niland, P.E., BSME ’40, is retired from Ford Motor Company where he
worked for 30 years. His P.E. Registration No. is 6555.

Dr. Werner Goldsmith, BSME ’44

Professor Werner Goldsmith, BSME ‘44, PhD University of California at
Berkeley, 1949, received the College of Engineering’s 2002 Distinguished Aca-
demician Award. This award, created to recognize renowned achievement and
contribution to research, scholarship, and teaching in Engineering, was bestowed
upon Professor Goldsmith in honor of his lifelong dedication to the support and the
advancement of engineering education. Goldsmith, Professor of the Graduate
School in Mechanical Engineering at UC Berkeley, has been an integral part
of UC Berkeley’s Mechanical Engineering Department since 1947. A member
of the National Academy of Engineering since 1989, and an ASME fellow since
1970, Professor Goldsmith is also author of several best-selling books, Impact and
Introduction to Bioengineering, as well as editor and author of Mechanical Engi-
neering at Berkeley: The first 125 years, an historical account of the department.
In addition, he has written over 225 articles. Please join us in congratulating
this outstanding alumnus, Werner Goldsmith.

William G. Boyle, BSME 56, “Not much to submit. After graduation in ’56, I went
to work for Otis Engineering Corporation for 38 years and married Lois Berglund,
whom I met in ECO312. We had three sons; Bruce, Brian, & Brent. They are all
third generation Teasippers (My Mother got her law degree there.) Two out of
three are Eagle Scouts. They begat my eight grandchildren, including two
divorced me. Now I wiggle with the women (exercise class) on MWTF and
play a lot of FreeCell (trying to win all 32,000 games), and in general, live it
up. When in Austin I like to visit with the girl that edited my book, and Vicky, who
was a Whitehall Coop girl.”

Sam Y. Zamrik, BSME ’57, Professor Emeritus of Engineering Mechanics at
Penn State has been elected to the Board of Governors of the American Society of Mechanical Engineers International (ASME) at their annual
business meeting in New Orleans June 6, 2001. Dr. Zamrik is currently serving
as Vice-President of the ASME Society Materials and Structures Group that
oversees the operation of four technical divisions: Pressure Vessels & Piping, Materials, Non-Destructive Engineering and the Calgary Pipeline System. In addition, Dr. Zamrik is the Technical Editor of the Pressure Vessel Technology Journal and is serving on
a number of ASME Technical National Boards. Dr. Zamrik has also been
named to the European International Scientific Committee where he was
an invited speaker at the 6th Internationl Conference on Biaxial Fatigue

R.C Paulette, PE, BSME ’59 has spent the majority of his professional
career in the inland petrochemical industry and in the engineering and
construction of chemical and gasoline plants in West Texas. As the price of
oil fluctuated from under $10 per barrel to over $40 per barrel during the 70’s, 80’s and 90’s R.C has had the opportunity to roll with the changes in his hometown of Odessa, Texas. The Paulette’s have lived and worked in Odessa since graduation from UT, except for a two year stint in Wichita, Kansas as a test engineer for Boeing on the B-52 airplanes from 1959-1961. Presently R. C. owns and operates an insurance and risk management business. “My wife, Irene, was in one of the first graduating classes of the University of Texas of the Permian Basin in Odessa, She earned a B.A degree in history and English and a Masters degree in history in the 70’s. She taught school and is now very involved with the family business. Our
son, Gary also a PE, graduated from UT with a BSME in 1980 and has been with what is now Occidental Petroleum since 1980 working as a field engineer in the oil fields of West Texas. Our
daughter, Kelly graduated a bit “down the road” from Southwest Texas in San Marcos with a teaching degree. We are very proud of our seven grandchildren.”

In 1999, R.C. was appointed by Rotary International to serve as District Governor for the year 2000-2001 for District 5730 in the Northwest area of Texas. He and his wife visited and spoke to 53 Rotary clubs and 2500 Rotary members traveling over 25,000 miles to 53 towns and cities wherever there was a Rotary club. They also went to worldwide conventions in Argentina, California, Colorado and Texas. Rotary International has 30,000 clubs with 1.2 million members in over 163 countries. Rotary is committed to business ethics, community improvement and service to humanity.

Business address: 2817 JBS Pkwy, A-102; Odessa, TX 79762; 915/368-7313
email: rcpaul1@juno.com

Keys Curry, BSME ’58, was honored to be named a 2001 Distinguished Engineering Graduate by the COE in December. Please see article on page 12.
1962

Mark E. Williams, BSME '62, MSME '65, and wife, Linda, have just moved back to Seguin after spending 8 years operating a tool and die manufacturing company in Monterrey, Mexico. Mark is doing consulting work in the area of high production metal stampings and die design–much of it in Mexico, as he is fluent in Spanish and very informed on the manufacturing scene there. For more info: matriz@swbell.net

Michael B. McShane, BSME '68, won the Microelectronics Packaging Technologist of the Year Award sponsored by MEPTEC. The award was developed to recognize individuals who have played an integral role in the development of technologies that have impacted the backend of the semiconductor industry. Congratulations Mike!

1966

Jim Faetche, BSME '66, "I am now retired from ME jobs with mainly the petrochemical industry. Highpoints: Two years in residence at Antwerpen, Belgium (traveled from Moscow to Istanbul, Turkey, all countries touching the Mediterranean and England plus the home of the Vikings. I consulted on the construction and start up of the Alaskan Pipe Line project."

"I just completed the Page Parks Model Camp in their Model & Acting division. I just sent a tape of mine for consideration for the replacement of Cactus Jack Prior as the voice of the Longhorns! (If I get it - wouldn’t that be something!)"

"I’ve been a participating member of the Hostelling International American Youth Hostels ever since I was introduced to hostelling while I was in Europe. I’m intending on leading a Hostel trip to Big Bend and to a trip on the world famous Copper Canyon trip in Mexico in December."

"I also sing tenor (Lead) in a Bar-Ber-Shop Quartet in my 1st Baptist Church Choir. Further I am a participating member in the church Drama Groupe - we present Christian plays for our church and conference."

1969

Maxie E. Burnham, BSME '69, is a plant manager for the Fasloc business of DuPont. DuPont is in the process of selling the business, so in another month or so Maxie will be president of an independent company.

Ben Tobor, BSME '69, in January 2001 became Co-Section Head of the Intellectual Property Section of Bracewell & Patterson L.L.P., whose main office is in Houston, Texas with offices in 5 other Texas cities, Washington, D.C., Reston, VA, London, England and Almaty, Kazakhstan.

1972

Astronaut and now movie star, Ken Cockrell BSME '72, can be seen in 3D in the recently released IMAX movie, Space Station. This film was presented by Lockheed Martin in cooperation with NASA and directed and filmed by the astronauts of the International Space Station.

1973

Oscar J. Zuniga Jr., P.E.; BSME Dec. '73, Medford, Oregon (soon to be San Antonio, TX), website at http://www.flysquirrel.net, accepted a position as Facilities Mechanical Engineer at Southwest Research Institute in San Antonio. Oscar says, "Now perhaps I'll be able to attend some of the UT Exes and Engineering Alumni functions! I am also investigating the possibility of applying for the CLEE Master's program in Executive Engineering Management, since Southwest Research is a partner with UT in this program."

1975

1977

Antonio, “Tony” Andrade, BSME ’77, group leader for Radiation Protection services (ESH-12) an a 20 year Lab employee, has been selected to serve with the Bush administration as a member of the President’s Advisory Board on Radiation and Worker Safety. Nominated for the position by Senator Pete Domenici, R-N-M., the appointment was made in response to a request to Congress and other government agencies to help convene a group of experts in the areas of dose assessment, dose reconstruction, radiation effects and current issues associated with the compensation of workers with radiation-related injury and illness claims. Andrade received an undergraduate degree from the University of Texas and a master’s and doctorate from the University of Michigan.

1980

Ted Aanstoos, Lecturer in Mechanical Engineering, BSME ’80, MSE ’87 is named a Fellow of ASME International and is accepted to the PhD program of the LBJ School of Public Affairs beginning Fall 2002. Fellow grade is conferred upon a member with at least 10 years active engineering practice who has made significant contributions to the field.

1985

George Parma, BSME ’85, has been employed by NASA’s Johnson Space Center since graduation. He was recently named the hardware manager for the International Space Station’s Crew Health Care System. This includes all the space station’s medical kits, emergency medical equipment, exercise equipment, and air, water, radiation, and acoustic monitoring & sampling equipment. This hardware is essential to maintaining a healthy human presence onboard the ISS, and studying the effects of the long-term exposure to humans in a low-earth orbit environment. New developments are in work for a resistive exercise capability (for “weight-lifting” in space), and a new joint Russian/American treadmill with vibration isolation system.

1987

Kerry Russell, BSME ’87, has resigned as a principal in the Lloyd, Gosslink law firm and opened his own firm in Georgetown for the practice of environmental law. Mr. Russell will continue to remain involved in UTME alumni activities.

1988

Dr. T. S. Kelso, PhD ‘88, Since our last update, Dr. Kelso has changed jobs twice. First, he moved briefly from Vice Commandant to Commandant (university president) of the Air Force Institute of Technology before being selected to stand up Air Force Space Command’s new Space Analysis Center (ASAC). Dr. Kelso’s new organization is responsible for conducting all technical analysis in support of current and future programs for the command’s multibillion-dollar annual budget. “Given our nation’s growing dependence on space capabilities to ensure our defense, this is an exciting and challenging opportunity.”

1989

Steve S. Cole, BSME ’89, lives and works in Houston and has a wonderful wife, Laurel, and an adorable (yet precocious) 3-year-old son, Mason. Steve is a technical manager for PTC (Parametric Technology Corporation), the world leader in Mechanical Design Automation solutions. Recently, PTC has broadened the scope of their solution set to address the burgeoning Collaborative Product Design (CPD) space, which maps to the entire product development process.

CPD breaks down to the ideas of Creation, Collaboration and Control of product data over the entire product development lifecycle.

In modern day manufacturing, more and more companies outsource. This requires improved methods of collaboration and data management not only within
Alumni News

Scott C. Brown, BSME ’91, since graduation has worked in Plano, TX, Austin, TX, Hsin-Chiu, Taiwan, Dresden, Germany, and in Seattle, Washington. Scott is now back in Austin working as a Quality Systems Business Process Development Project Manager at Motorola. He is also enrolled in an evening MBA program at UT. Scott says he is healthy, extremely busy, happy, and hopeful.

Kathy Warne, BSME ’89, MSME ’94, graduated with an emphasis in robotics. She is currently working as an Sr. R&D Engineer at Caliper Technologies in Mountain View, CA, writing the application software that analyzes and controls Caliper’s microfluidic devices and equipment.

Gloria Driscoll, BSME ’91, and her husband, Justin, UT MBA ’00, currently live in Boston, MA, with their 2yr old daughter, Julia. Gloria is the Director of Marketing and Sales for Simpler-Webb, an Austin-based software and services company. She telecommutes part-time from her home and loves to spend the other part of her day watching Julia grow. To the right is a picture of the three of them.

Mark Williamson, BSME ’91, has discovered he has a talent for bronze sculpture. To see his work and read more about it, please turn to page #37.

Scott J. Mason, UT BSME ’93, UT MSE ’95 and PhD ’00 from Arizona State University, is an Assistant Professor in the Department of Industrial Engineering at the University of Arkansas and a registered Professional Engineer in the state of Arkansas. Prior to his current position, Dr. Mason spent eight years working on factory modeling, simulation, and capacity analysis projects at SEMATECH, Advanced Micro Devices, Intel, Wright Williams & Kelly, and National Semiconductor. His interests include modeling and analysis of semiconductor manufacturing systems, applied operations research, and factory scheduling and production control. Dr. Mason is a member of IIE and INFORMS and serves as a Technical Advisor to Integral Wave Technologies. He and his wife Andrea are the proud parents of Matthew (2) and Rebecca (5 months).

1989

Jack Leifer, MSME ’89, PhDME ’95, is currently an Assistant Professor of Mechanical Engineering at the University of Kentucky/Extended Campus Programs at Paducah. The second edition of his textbook, Introduction to PowerPoint XP, published by Prentice-Hall, is about to be released. It is part of Prentice-Hall’s ESource Introduction to Engineering series. Last summer, he led a group of his students to Houston, where they flew a project on NASA’s KC-135 “Vomit Comet” through the Reduced Gravity Student Flight Opportunity Program. (Jack is pictured to the left. He is on the left side of the back row; his team name is the Paducah Weightless Wildcats, or PaWWs.)
Phillip Seawright, BSME ’93, recently launched the Quarterback Map, a waterproof, tear-resistant, wearable ski map that allows skiers the freedom of never removing their gloves. Phillip test marketed the product for Winter Park Resort in Colorado near the company’s headquarters in Denver. Phillip is currently modifying the product for other outdoor and military activities.

Bill Schneider, BSME ’93, is a Structural Dynamics Research Specialist at Lockheed Martin Aeronautics Company (aka “The Skunk Works”) in Palmdale, California. He received his Master’s Degree from Georgia Tech in 1995 with a focus on structural dynamics. Most of his work deals with random vibrations, mechanism dynamics and deconvolving “manager speak”. He is engaged to be married this summer.

Brian Young, BSME ’93, is now attending SMU full time to get an MBA with a Marketing concentration.

1994

Jeff Henkener, BSME ’94, is excited to pass on news of his marriage to Kelly Irons on March 16, 2002. Jeff is currently working as a Senior Project Manager for Dynamic Systems, Inc. (a specialty mechanical contractor) in Austin. Kelly is an eighth grade math teacher at Cedar Park Middle School.

Kathy Warne, MSME ’94, graduated with an emphasis in robotics. She is currently working as an Sr. R&D Engineer at Caliper Technologies in Mountain View, CA, writing the application software that analyzes and controls Caliper’s microfluidic devices and equipment.

1995

Chris Saurenmann, BSME ’95, received his Professional Engineering (P.E.) License in Texas during the last exam cycle. Chris is currently the Senior Production Engineer for Hanson Pipe & Products, Inc. in Dallas, Texas where he is currently acting as Project Manager for a multi-million dollar plant expansion. Chris is also proud to announce the birth of his second son, Blake Allen Saurenmann, who was born in August of 2001. Chris, Leah, Jonathon, & Blake live in Fort Worth, Texas.

1996

Zach Browder, BSME ’96, is living in Ann Arbor with his wife Lori, attending the University of Michigan Business School in pursuit of an MBA. He will be working as a Management Development Program Summer Intern with Abbott Laboratories in Chicago beginning in May.

Andres Gutierrez, BSME ’96,”I have taken a new assignment within SBC Communications as Director of business development for our Yahoo! Internet alliance. Since 2000, I have served as General Manager of SBC’s award winning DSL-Internet customer self install program. My engineering background has served me well, particularly for this role, as I had responsibility for the development, implementation, and ongoing technical support operations of this new product and market segment. The design and analytical skills I gained from my ME degree combined with the applied and pragmatic approach UT emphasizes were key for my success. Having started at SBC in the leadership development program, I have had a broad range of assignments in Network Operations, Finance, and Customer Service and many high profile assignments including working on the Pacific Bell, SNET, and Ameritech mergers. I plan to pursue an MBA starting this Fall 2002 and will likely be back on the UT campus attending the Option II program.

Nathan Vollrath, BSME ’96, worked for Sedco-Forex in Brazil and Scotland for a year after graduation. Nathan moved to Houston at the end of 1997 and now works as Sr. Applications Eng. in the subsea drilling department of FMC. He married Christy in 1997, and they have a son (2 yrs) and daughter (3 mos). Anyone who wishes to contact him is welcome to use the information below:

Wk: 281-405-4648
Cell: 281-744-8973
Email: nathan.vollrath@fmcti.com

1997

Jeff Bender, BSME ’97, “I am currently working at Squaw Valley Ski Corp in Tahoe, CA as a lift electrician and am also getting into the green building industry here in Tahoe. I am also close to finalizing my application for the Peace Corps, it’s a very long process with lots of paper work. So by the time this is published I might be out of the country or working full time in the green building industry. We’ll see. It pays to keep the options open. And I must say having a degree in Mechanical Engineering has helped immensely developing a network in the building industry.”

Joe Cohen, BSME ’97, has returned to Austin to earn an MBA with UT’s McCombs’ School of Business after working in the Aerospace, Research/Development, and Automotive Industries.

Reagan Evans & Leslie Bell, both BSME ’97 graduates, were recently engaged during a Valentine’s trip to Paris (no, not the one in Texas), and plan to be married in Austin later this year. Leslie is a product marketer for Motorola Semiconductor products & Reagan works for Motive Communications, Inc. as a technical account manager for the software company.

Oscar Moreno, BSME ’97, was promoted to Lieutenant (O-3), and has last written from on board the USS John C. Stennis (CVN 74) and is part of Operation Enduring Freedom in the Arabian Sea.

1998

Catherine Riegle, BSME ’98, has graduated (J.D.) from the University of Houston Law Center and is living in Houston.

Omar A. Abou-Sayed, BSME ’98, after four years with BP which took him to Russia, Alaska, London, China, France, and a few others, Omar Abou-Sayed (BSME 1998) is returning to academia to pursue an MBA at the Harvard Business School this fall. He looks forward to reconnecting with fellow classmates in the Boston area. Hook’em horns, and Go Pats.
 Alumni News

Natalie A. Vaughn, BSME '98, has been named Project Manager over the deployment of transmission lines to a huge windfarm in West Texas on behalf of the Lower Colorado River Authority. She also obtained the certification of Project Manager Professional through the Project Management Institute (pmi.org) on July 12, 2002.

Daryl Zielke, BSME ‘98 writes, “Upon graduation I moved to Euless, TX, a centrally located suburb of DFW metropolis, and began working at Lockheed Martin Missiles and Fire Control-Dallas LMMFC-D. I have worked on multiple programs ranging from a kinematic missile launched from a HMMWV platform to designing the next ground combat vehicle for the U.S. Army.

“My primary job function the first 2-1⁄2 years at Lockheed Martin was product design (Pro-Engineer is the CAD packaged used at LMMFC-D). I have had the opportunity to drive HMMWV, tanks and M270 launchers during engineering tests. The tests were fun, but rigorous to say the least. In April of last year I applied for the Engineering Leadership Development Program (ELDP) within Lockheed Martin and was accepted. ELDP is a two to three year training program consisting of Rotational Job assignments, a Technical Degree Curriculum (TDC) and Projects. The ELDP also requires you to have a Masters degree, so I am currently attending Southern Methodist University studying Systems Engineering.

“I am currently working as a simulation/virtual engineer in the manufacturing arena. I virtually simulate assemblies to identify potential problems with engineering design of the manufacturing process to assemble components. I also study the ergonomic issues of different manufacturing equipment and tools. I hope to rotate into finance, proposal writing and business strategic development with my final three rotations.

“I proposed to Marzella Salinas on March 16, 2002 while we were vacationing in Las Vegas, Nevada. She will be graduating from the University of Texas @ Austin in May with a Retail Merchandising degree. I hope to stay in the DFW metropolis, but time will only tell where Marzella and I start a whole new adventure. “My evenings are usually busy. I try to play basketball once or twice a week, and have joined a volleyball league that plays on Tuesdays. I try to run a few times a week and also play some tennis. Besides sports, I have found the stock market to be quite interesting. Anyway, just wanted to say hello and good luck to everyone.”

2001

Justin Case, BSME 2000 and Formula SAE Team Captain 1999-2000, has been selected to enter a team in “Junkyard Wars” a popular show on The Learning Channel. This engineering challenge started off some years ago in the UK and is now featured on The Learning Channel. Extreme Junkyard machines are “built by teams of bikers, high-tech engineers, school teachers and even hillbillies!” Justin is now with Ford, and the rest of his team will also consist of Ford employees.

Below is an excerpt from Justin’s letter to Dr. Matthews telling about the “wars”.

“I don’t have a whole lot of details on our Junkyard Wars episode but here is what I do have:

“The Junkyard Wars people received over 1000 application videos, we were chosen as 1 of 8 teams to compete this season. Our team is a group of Ford College Graduates, we were interns together in the summer of 2000, we made a pact to work at Ford together when we graduated. Our team name is the Model T’s and my two teammates are Gary Kiley and Stephen Zoepf. They graduated from Michigan Technological Institute and Massachusetts Institute of Technology respectively. For the record I tried to recruit UT Alumni but our ace welder Jeremy Moore left for Germany. Also, Gary actually knew all the details of how to apply and was the driving force that took the idea to reality.

We start on April 21st in Los Angeles, CA and go for a week. Monday is training day practice using their welder, ATV safety, rules, meet the other team and our Expert (4th teammate). Tuesday the 23rd is Build Day! We are told what we are to build and the ten hour countdown begins. I am sure my Formula SAE experience will come in handy there, we told them we could go 24 hours if need be. Wednesday is a safety and rest day where the machines are checked over by the show’s engineers and any safety guards deemed necessary are fitted. Thursday is the competition day, Thursday night is celebration time!

“If we happen to win, we will go back for another week on May 12th and if by some stroke of luck we win again, we would stay and compete in the Season Finale the week of May 19th.

“They have not told us an air date but I expect sometime in September. They have not told us who we would be competing against but they hinted at either another Automotive Engineering team (GM, Toyota, Honda, etc.) or a group of shade-tree mechanics. Also, even if an alumni happens to be in the LA area in that time frame, we can’t have visitors on the set, liability concerns were cited. Also, I won’t be able to tell you if we win and go back in May because that would ruin the show.

“You can be sure I will be proudly displaying my University of Texas heritage. I have some Longhorn and Texas flag stickers for my welding helmet.”

On air date was August 28, 2002 at 8 pm on TLC.

2002

Nathan Rylander, BSME 2002, was named Outstanding Student of the College of Engineering graduating class of 2002. Nathan is not at the U.T. Medical Branch in Galveston in pursuit of an M.D. degree. Congratulations Nathan!
Donna Ferguson, wife of Douglas Ferguson, BSME 1967, suffered a severe heart attack on November 3 and died November 4, 2001. Doug can be reached at 185 W. Chestnut Hill Road, Newark, DE 19713, Ph. 302-366-0746.

Alex Rangel, BSME ’98, passed away on November 10, 2001 in Austin, Texas. He is survived by his loving wife, Elizabeth Rangel of Cedar Park, a daughter, Allyssa Rangel; two brothers, Robert Rangel, Jr. and Mark Rangel, his paternal grandfather, his mother and father-in-law, his niece and nephew and numerous aunts, uncles and cousins. In place of usual remembrances the family suggests that memorial contributions be made to Brain Tumor Research, 2720 River Road Suite 146, Des Plaines, Illinois, 60018-4117.

Lyle G. Clark, UT engineering professor emeritus, died Tuesday, February 12, 2002 of kidney cancer. Dr. Clark served 37 years in the College of Engineering before retiring in 1998. Dr. Clark served five years as a professor in the Department of Mechanical Engineering and then as chairman of the Department of Aerospace. Clark is survived by his wife Marie and three sons L.G. Clark, Douglas Clark and Robert Clark, and his daughter Susan Brewster.

Paul Woolrich, BSME ’45, passed away on October 3, 2001 at home after an extended illness. Paul Woolrich, a Kalamazoo resident since 1967, was a nationally known and respected engineer and industrial hygienist. As a young college student, he was dubbed “Eighty-eight Keys” by his fraternity brothers because his radiant smile reminded them of the eighty-eight pearly white keys of a piano. Paul’s father was W. R. Woolrich, the 2nd Dean of the University of Texas at Austin College of Engineering.

Woodrow Blomdahl, BSME ’37, from Houston, Texas died on July 14, 2001.

William Williams, BSME ’52, from Lake Jackson, Texas died on July 18, 2001.

Jim Turner, BSME ’72, from Austin, Texas died on August 6, 2001.

Charles Gibson, BSME ’49, from Corpus Christi, Texas died on October 24, 2001.

James Sheehan, BSME ’50, from Texas City, Texas died on November 6, 2001.

Henry Adkins Ward, BSME 48, died on December 8, 2001.


Leonard M. Vaught, BSME ’49 from SMU and MSME ’52 from UT, from Damon, Texas died on January 12, 2002.


Curt von Bieberstein, BSME ’30, from Austin, Texas died on January 28, 2002. Mr. von Bieberstein was Associate Director of the Physical Plant and Superintendent of Utilities upon his retirement in 1974.

James Speedy, BSME ’81, from Saratoga, CA died on January 29, 2002.

O. Laurens Pratt, BSME ’38, from Houston, Texas died on February 4, 2002.

Joe Rohats, BSME ’52, from San Antonio, Texas died on February 11, 2002.

Gene Lee, BSME ’54, died on February 21, 2002.

James Parker Williams, BSME ’50, from Fort Worth, Texas died on March 8, 2002.


Frank W. Gerling, BSME ’50, from Austin, Texas died on April 2, 2002.

William S. Bachman, BSME ’48, from Laguna Beach, CA died on April 4, 2002.

Bill Ramsdell, BSME ’47, from Austin, Texas died on April 9, 2002.

Robert Tittle, BSME ’51, MSME ’52, died on April 11, 2002.
Obituaries

Dave Nagel, BSME ’53, from Round Top, Texas died on April 22, 2002.

Philip Furman, BSME ’61, died on May 4, 2002.

Julian C. LaRoche, BSME ’43, from Houston, Texas died on May 10, 2002.

Robert Arnold, BSME ’58, died on May 16, 2002.

John R. Ross, BSME ’66, MSME ’67, from Duncanville, Texas died on May 19, 2002.

Enoch Lind, BSME ’54, from Fredericksburg, Texas died on May 30, 2002.

Meredith Roberts, BSME ’49, from Houston, Texas died on June 6, 2002.

Charles L. Herndon, BSME ’43, MSME ’57, from Butte, MT, died on June 13, 2002.

Ernest J. Krenek, BSME ’57, from Ridgeland, MS died on July 2, 2002.

Charles Johnson, BSME ’43, died on July 12, 2002.

Raymond Hurst, BSME ’34, from Houston, Texas died on July 29, 2002.

Patrick O. Braden, BSME ’54, PhD ’61, died in Castries, St. Lucia.

Manuel G. Vega, BSME ’54, from Brownsville, Texas passed away.

Al Hatch, BSME ’42, from Escondido, CA passed away.
Friends of the Newsletter

The following readers have contributed to the publication expenses of ME ALUM. The UT Department of Mechanical Engineering extends a sincere Thank You for their support.

Mr. Wilmar Degenhardt
Mr. Mark Finley
Dr. Werner Goldsmith
Mr. and Mrs. R. C. Paulette
Mr. Earnest Reed
Mr. Jimmy Stevens
Mr. William Brax Wright

Mark Williamson, BSME ’91, writes “In 1990 & 1991, I entered the Alec soap-carving contest at the annual engineering fair, and found success. After graduating with a BSME in 1991, I took a position with an industrial elevator manufacturer in Houston, but not before traveling to attend a stone carving workshop in Pietrasanta, Italy. My secret passion was thus unleashed. On the side and in the backyard of a friend, I began carving several figurative works from white marble, and found still more success in competitive exhibitions.

“Recently, I decided the passion for sculpture exceeded the passion for engineering, and I began sculpting as a professional pursuit. I recently came across some old photos of our Patron Saint, Alexander Frederick Claire, and decided to try and carve his exact likeness (from wax), and then have it cast into bronze. Here, then, is a photo of the results. Questions or comments? Want a statue of your very own? Please feel free to contact me at mpwilliamson@alumni.utexas.net.”
Cover: Black 1937 Chevrolet Bastor donated to UT SAE by Frank Blankenbecker of Waxahachie, Texas. Mr. Blankenbecker's sons all graduated from the University of Texas. John Ramsey BSME arranged the deal on a chance drive through Waxahachie, Texas during a Christmas vacation. UT SAE's plans for the car are to "show it off and chase parts". The team captain of the 1937 Chevy project is John Langsdorf.

Send Us Your News for Inclusion in the 2003 Edition of ME ALUM:

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