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The Longhorn Liftoff

A NEWSLETTER FOR ALUMNI & FRIENDS OF AEROSPACE ENGINEERING & ENGINEERING MECHANICS AT UT AUSTIN

WE'RE TEXAS

In This Issue...

Explore UT
Chairman's Column
Awards & Updates
Research & Teaching
Blast From the Past
New Logo for ASE/EM
Dr. Hans Mark Returns

Daniel Parcher, ASE Student and AIAA member, demonstrates the 2001 Rube Goldberg Machine.

Explore UT A Huge Hit in Aerospace!

The steady sound of rain hitting the roof of the old building could be heard early on Saturday morning by ASE/EM volunteers (faculty, students and staff) as they bustled around the department, busily setting up in preparation for the crowds of visitors that would inundate them by mid afternoon. They were preparing for the campus-wide open house event, Explore UT, an interactive experience open to the general public for the purpose of spreading the word about what it is we do here behind the scenes at UT.

Bad weather didn't seem to keep Explore visitors away, regardless of many volunteers' predictions of a low turn out. By 2:00 p.m., the Woolrich Laboratories building was filled with crowds of families, students and tour groups anxious to see and learn about what goes in various aerospace laboratories, as well as to participate in hands-on activities.

On-going scheduled events within the building included a demonstration of the 2001 Rube Goldberg machine by AIAA students, a Space Olympics talk by Dr. Wallace Fowler, demonstrations in both the wind and water tunnels with Dr. David Goldstein and a demonstration entitled "Breaking Steel" with Dr. Kenneth Liechti. Outdoors, Dr. Glenn Lightsey and several graduate students were available for demonstrations of satellite navigation as well. In addition to the various demonstrations, the flight simulator laboratory was open to visitors, where hundreds of people waited in line for over an hour to experience "flying" with the assistance of Aerospace students.

Jens Ramrath, ASE graduate student, explains the inner workings of a flight simulator to an Explore UT family.

Overall, Explore UT was a huge hit with visitors, and many had positive comments about Aerospace especially, stating that we were the best department they visited! You can also read more about the event in the *Austin American Statesman's* archives from the Sunday, March 4, 2001 issue under the Metro & State section. The ASE/EM department was the main highlight of the article, as should be expected!

Kendra Cox
Explore UT Volunteer & Editor

Chairman's Column

Welcome to *The Longhorn Liftoff*, our sparkling new ASE/EM department newsletter for alumni and friends. We hope very much that you will enjoy this first edition and that you will look forward to receiving subsequent editions. With our "lean, desktop-based production technology" and enthusiastic and capable editor, Kendra Cox, we plan to lift-off on a regular schedule, hopefully twice a year or more. Our main purpose is to publish news, information, and articles that are of interest to you. As department chair my natural tendency is to "brag on" the success and accomplishments of our students and faculty, and from time to time I will not be able to restrain myself. They have done remarkable things! However, I know from e-mails and conversations with many of you, that the newsletter can be much more than that. Several of you have already responded to us with ideas of what you would like to see in the newsletter, and we have made every effort to incorporate the most popular requests into our first edition. A few of you have also mentioned an interest in authoring articles yourselves, which I would love to see in future issues. Please take a few moments to send your thoughts to Kendra Cox (kendra.cox@mail.utexas.edu) on this first edition - tell us what you would like to see in the future, and what you might be willing to do to help.

Now on to a brief overview of what's been happening here since you've been away. You will be pleased to know that your department is thriving. The annual *U.S. News and World Report* survey ranks our aerospace graduate program 7th in the nation, and 5th among the public institutions. After a downturn in the early 1990's, enrollment has been increasing for the past five years and we expect a further increase in Fall 2001. Job opportunities have been excellent for our graduates. I encourage you to visit the ASE/EM web site at www.ae.utexas.edu. You will find a wealth of information on the department's teaching and research program and personnel. On behalf of our faculty, staff, and students, I send our best wishes and look forward to hearing from you soon.

D. S. Dolling, Chair, ASE/EM

Faculty 2000 - 2001 Awards & Honors

Dr. Ivo Babuska, Honoray Doctorate in Technology, Helsinki University of Technology, Helsinki, Finland, September 8, 2000. **Dr. Marc Bedford**, *Mechanics of Materials* published with Dr. Kenneth Liechti, 2000; elected to Academy of Distinguished Teachers, 2001, The University of Texas at Austin. **Dr. Robert Bishop**, promoted to full Professor effective September 1, 2001; selected to serve 3 year term on the Science and Education Council at the Universities Space Research Association. **Dr. Noel Clemens**, appointed to the Robert and Francis Stark Centennial Fellowship in Engineering, effective September 2000. **Dr. Clint Dawson**, promoted to full Professor, effective September 1, 2000; elected Chair, Society for Industrial & Applied Mathematics Activity Group on Geosciences, 2001-2004. **Dr. Wallace Fowler**, elected President, American Society for Engineering Education, 2000-2001. **Dr. Kenneth Liechti**, *Mechanics of Materials* published with Dr. Marc Bedford, 2000. **Dr. E. Glenn Lightsey**, 2000 Halliburton Young Faculty Excellence Award. **Dr. Hans Mark**, named Honorary Fellow, American Institute of Aeronautics and Astronautics, December 2000; Lifetime Achievement Award, American Helicopter Society, June 2000; inducted to the Texas Science Hall of Fame, January 2001. **Dr. Mark E. Mear**, 2000 Lockheed Martin Award for Excellence in Engineering Teaching. **Dr. J. Tinsley Oden**, Honorary Doctorate from the Academic Senate of Cracow University of Technology, Poland, June 2001; awarded Life Member status with the American Society of Civil Engineers, December 2000; *A Posteriori Error Estimation in Finite Element Analysis*, published with Dr. Mark Ainsworth, 2000. **Dr. K. Ravi-Chandar**, elected Fellow of the American Academy of Mechanics, December 2000. **Dr. Bob Schutz**, elected Fellow, American Geophysical Union, 2000; elected Fellow, The American Astronautical Society, 2000. **Dr. Ronald Stearman**, 2000 Engineering Foundation Advisory Council Faculty Excellence Award.. **Dr. Byron Tapley**, Charles A. Whitten Medalist, American Geophysical Union, 2001. **Dr. Philip Varghese**, appointed to the Harry H. Power Professorship in Engineering, September 2000; Aerospace Engineering and Engineering Mechanics Teaching Award, 2001.

Faculty Retirements

Lyle G. Clark Jr., P. E., has been a member of the COE faculty for 40 years. He retired in May 1997. **Roger A. Broucke**, P. E., a member of the COE for 24 years, retired in May 1999. **Morris Stern**, P. E., was a member of the COE faculty for 34 years. He retired in May 1999. **Lawrence R. Mack** retired after 41 years of service in December 2000. **Roy R. Craig**, Jr., P.E., a member of the COE faculty for 40 years, retired in May 2001.

Student Awards

Eduardo Gildin, 2001 College of Engineering's Texas Excellence Teaching Award, given annually by the Student Engineering Council. **James Halbert**, Undergraduate Research Fellowship, from the UT Austin Vice-President for Research; 2001 University Co-Op Undergraduate Award for Superior Scholarly and Creative Achievement. **Shaun Stewart**, 3rd Place, AIAA Undergraduate Paper Competition (Region 2).

Cesar Ocampo

Cesar Ocampo joined us as an Assistant Professor in the Fall 2000 semester. He earned his Ph.D. in 1996 from the University of Colorado at Boulder. His research interests are in Astrodynamics and Celestial Mechanics, Spacecraft Trajectory Optimization in Multibody Gravity Fields, Mission Design and Analysis for Multiple Spacecraft Missions, Dynamical Systems, and Numerical Methods. He is also leading an initiative in the department to have undergraduate and graduate students design, build, test, launch, and operate small satellites. These microsatellites are limited to a mass of 1 kg and are targeted to operate both in low Earth orbit and as far as the Moon. Dr. Ocampo teaches Spacecraft Dynamics at the undergraduate level and Celestial Mechanics at the graduate level. In January 2002, he will introduce a new graduate course in the department titled, "Optimal Space Trajectories," which will in part expose students to the latest methods used to analyze low thrust and solar sail trajectories, a class of trajectories currently being flown and considered for solar system exploration by NASA.

Dr. Cesar Ocampo, Assistant Professor, ASE/EM

K. Ravi-Chandar

K. Ravi-Chandar joined us as a Professor in the Fall 2000 semester. He earned his Ph.D. in Aeronautics at the California Institute of Technology in 1982. He is the Associate Director of the Center for Mechanics of Solids, Structures, and Materials (CMSSM) and serves on the steering committee of the Texas Materials Institute (TMI).

Professor Ravi-Chandar's teaching and research interests lie in the general area of mechanics of materials. He has taught courses in mechanics of materials, materials science, experimental methods, elasticity, and fracture mechanics. His research interests are in the area of mechanical behavior of solids with a particular emphasis on high strain rate fracture behavior. Dr. Ravi-Chandar's current thrusts are in the areas of dynamic fracture, inelastic behavior of polymers and composites, and wave propagation in shape memory alloys. Recently, he has developed research programs on the mechanical behavior of stents, and biomechanics of surgical reconstruction. While interest in these problems is motivated by their enormous practical importance, the focus of the research is on the generation of a fundamental understanding of the way in which materials deform and fail. This requires an integrated experimental and theoretical study, conducted at various spatial and temporal resolution. Accordingly, his laboratory facilities are geared toward performing experiments specially designed to elucidate these characteristics of material behavior.

Dr. K. Ravi-Chandar, Professor, ASE/EM

GRACE Mission

In 1997, the Gravity Recovery and Climate Experiment (GRACE) mission was selected by NASA for development under a new Office of Mission to Planet Earth program called Earth System Science Pathfinder (ESSP). Dr. Byron Tapley, holder of the Claire Cockrell Chair in Aerospace Engineering, is the Principal Investigator for the mission. GRACE is a joint project between the U.S. National Aeronautics and Space Administration (NASA) and the Deutsches Zentrum Für Luft und Raumfahrt (DLR). The mission team is made up of personnel from the UT Austin Center for Space Research, JPL (California), NASA Goddard (Maryland), NASA Langley Research Center (Virginia), Astrium (Germany), NASA and DLR. The twin satellites are scheduled to be launched in November 2001 aboard a Russian ROKOT booster from the Plesetsk launch site north of Moscow. The satellites will fly in a circular orbit at an altitude of 500 km with one satellite trailing the other at a distance of 230 km. The mission is scheduled to last five

The "ramshorn" was introduced in the early 1900's as a symbol of engineering excellence by T.U. Taylor, first dean of the College of Engineering at UT Austin. It represents the College's dedication to excellence.

GRACE (continued)

years.

The objective of the GRACE mission is to obtain a better understanding of the mass balance in the Earth System (oceans, ground and surface water, solid earth movements, etc.) and to explore the structure of the Earth's atmosphere by detailed analysis of GPS signals as the satellites rise and set. The primary science objective of GRACE is to obtain accurate mathematical models for Earth's gravity field. The objective will be achieved by making measurements of changes in the satellite-to-satellite range as the pair orbits the Earth.

The relative positions of satellites themselves are the experiment, allowing a precise 'snapshot' of the gravity field to be measured about every 30 days for a mission time of five years over a decreasing orbit altitude between approximately 500 km and 300 km. The predicted accuracy of the GRACE system will allow mission scientists to 'weigh' various parts of the Earth system. This will lead to learning about the distribution and changes in ocean mass, the growth or shrinking of the polar ice sheets, the amount of water in underground aquifers and other issues profoundly affecting climate change. It also will provide a never-before-available perspective on global ocean circulation and the time variability of Earth's overall shape.

For more information on GRACE, go to http://www.csr.utexas.edu/grace/

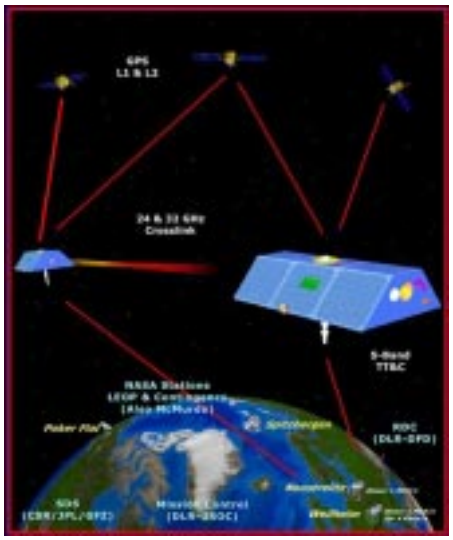

Diagram of GRACE Mission Satellites

Have you ever wondered what happened to your old classmates you used to spend hours studying with? Where they have been and what they are up to now? Now you can read about them in our Blast From the Past column! You can also send us the latest news in your life and we will include it in our next issue. Just fill out the form attached to this newsletter and send it in. Or you can send us your news online at www.ae.utexas.edu. We look forward to hearing from you.

Because of the great volume of response we received from you all when we sent out the Alumni Update Form recently, this issue's Alumni Notes will be a little lengthy. And if we missed you, please forgive us. We will make every attempt to include you in the next issue. Enjoy your travel back in time!

1940's

Joseph W. Dalley, B.S., A.S.E., 1947, M.S., EM, 1951, Ph.D., E.M., 1959, is now living in Lago Vista, Texas after retiring from service at UT Arlington. He is an Associate Fellow of AIAA and a member of the Kiwanis Club in his local community. **Dan Hearn**, B.S., A.S.E., 1945, is an active Pilot with instrument rating and over 4000 hours of flight time. He has enjoyed a long career association with the Defense and Intelligence Communities and currently serves as President of the Intelligence Reconnaissance Fund, which was organized to recognize and provide educational activities on behalf of personnel engaged in the sea, land air or space reconnaissance missions in the "Top Secret Silent War". He lives in Rancho San Diego, California. **Robert L. Jarmon**, B.S., A.S.E., 1947, is the owner of his own company, Jarco in Boerne, Texas. **Gloria M. Turner**, B.S., A.S.E., 1947, is retired from General Dynamics and living in Pittsburg, Texas. She is active at the Texas Rural Heritage Museum and serves as a Sunday school teacher. **Robert L. Turner, Jr.**, B.S., A.S.E., 1947, M.S., A.S.E., 1948, retired in 1984 from General Dynamics and is living in Pittsburg, Texas. He has authored several articles on the archeology of Northeast Texas as the Archeological Steward for the Texas Historical Commission. **Chester Steele**, B.S., A.S.E., 1948, is a retired Commercial Pilot and is now living in San Antonio, Texas. He is a member of the Aircraft Owners & Pilots Association.

1950's

Willie S. Bennet II, B.S., A.S.E., 1958, M.S., A.S.E., 1966, a retired employee of Lockheed Martin, lives in Fort Worth, Texas. He is a member of EAA and is also involved in general aviation. **William B. Brooks**, B.S., A.S.E., 1959, is retired from Lockheed Martin in Arlington, Texas. He is a member of AIAA, NSPE and TSPE. **Robert W. Courter**, B.S., A.S.E, 1957, M.S., A.S.E., 1958, Ph.D., A.S.E., 1965, retired from LSU after 33 years as a Professor in the Mechanical Engineering Department. He is a member of AIAA. **Vernon A. Lee**, B.S., A.S.E., 1954, M.S., A.S.E., 1955, Ph.D., A.S.E., 1963, retired as Vice President of Lockheed Martin on December 31, 1998 in Fort Worth, Texas. **Maurice J. W. Lehmann**, B.S., A.S.E., 1959, is owner of Lehmann Enterprises, Property Management, in Boerne, Texas after retiring in 1980 as a USAF Flight Test Engineer and Pilot. **Humboldt C. Mandell, Jr.**, B.S., A.S.E., 1957, is working at NASA JSC as a Program Manager. **James McBride**, B.S., A.S.E., 1954, is a retired NASA Engineer (1960 – 1994) and is currently living in Dickinson, Texas. **Thurber A. Outlaw, Jr.**, B.S., A.S.E., 1950, is retired and living in Arlington, Washington. **Thomas Yium**, B.S., A.S.E., 1955, M.S. A.S.E., 1956, is retired and lives in Colorado Springs, Colorado. He is a member of IEEE and AFCEA.

Willie S. Bennett retired from Lockheed Martin in 1997 to build his own aircraft. This Glastar was certified on September 29, 2000. Willie plans to take it to the Oshkosh this year for judging, and says he really enjoys flying around the country.

1960's

Stephen S. Boss, B.S., A.S.E., 1968, is President of Energy Buyers Network in Las Vegas, Nevada. He is a member of several Who's Who organizations and also serves on various community boards, some of which include Boy Scouts of America, Longhorn Foundation, Hall of Honor Court, UT and Chancellor's Council, UT. **William W. Braymen**, B.S., A.S.E., 1965, M.S., A.S.E., 1967, is employed as a Staff Specialist for Lockheed Martin in Fort Worth, Texas. He is an Associate Fellow of AIAA and is currently serving as Chairman of the ASE/EM Departmental Visiting Committee at UT Austin. **Elliot W. Brogren**, M.S., A.S.E., 1960, is retired and living in Bellevue, Washington. He works as a volunteer docent for the Museum of Flight, specializing in aviation history and aircraft restoration. **James D. Chalupnik**, M.S., E.M., 1960, Ph.D., E.M., 1964, is a Professor Emeritus of Mechanical Engineering at the University of Washington. **Edward Clemmer Jr.**, B.S., A.S.E., 1960, is a retired Captain for American

Airlines and currently lives in Palm Desert, California. He is interested in contacting other members of his graduating class for a reunion. **Robert L. Crippen**, B.S., A.S.E., 1960, is retired and lives in Ogden, Utah. **Robert M. Currah**, B.S., A.S.E., 1969, is employed as a Senior Engineer for the Lower Colorado River Authority in Austin, Texas. **Marshall B. Darby**, B.S., A.S.E., 1968, is employed as a General Manager for San Miguel Electric Cooperative, Inc. in Jourdanton, Texas. **Richard K. Davis**, B.S., A.S.E., 1969, is currently working as a Senior Mechanical Engineer for W. S. Nelson & Company in Houston, Texas. He is a member of ASME and LES and serves as Troop Committee Chair for Boy Scouts of America. **C. Warren Ferguson**, B.S., A.S.E., 1961, is the President and CEO of GE Smallworld in Englewood, Colorado while residing in Kerrville, Texas. He is currently serving as Chairman for the Board of Trustees at Schreiner University and is a member of Rotary International. **Carl A. Forbrich, Jr.**, B.S., A.S.E., 1961, retired from the U.S. Air Force in 1985 at the rank of Colonel, and is now employed as a Program Manager at Logicon, Inc. in San Pedro, California. He is a member of the AFA, an Associate Fellow of AIAA and a member of The Retired Officers Association. **Wallace T. Fowler**, M.S., E.M., 1961, Ph.D., E.M., 1965, a Professor of ASE/EM at UT Austin, has served on the College of Engineering faculty since 1965. He was recently elected to serve as President of the American Society of Engineering Education, 2000 - 2001. He also currently serves as Associate Director of the Texas Space Grant Consortium. **Gary J. Harloff**, B.S., A.S.E., 1968, is Vice President for Harloff Capital Management in Ohio. He is an Associate Fellow of AIAA and is a "pioneer in dynamic asset allocation money management and 401K for small businesses in the U.S." **John W. Hicks**, B.S., A.S.E., 1969, works at NASA/ Dryden Flight Research Center as a Project Manager. He is an Associate Fellow of AIAA. **Coye M. Jones**, B.S., A.S.E., 1964, is an Aerospace Technologist for the Space Shuttle Program at NASA JSC. **Michael Ching Kwei Kang**, M.S., A.S.E., 1968, is President of PCK Technologies, Inc. in Bellaire, Texas. **Harris McClamroch**, Ph.D., E.M., 1967, is a Professor of Aerospace Engineering at the University of Michigan, and has been there since 1967. He is a Fellow of IEEE and is the recent recipient of the IEEE Third Millennium Medal in 2000. **William H. Miller**, B.S., A.S.E., 1960, M.S., A.S.E., 1966, is a consultant for Alliant Tech Systems in Georgetown, Texas after retiring from the company. He is a member of AIAA and a Paul Harris Fellow of the Rotary Club. **Michael D. Reifel**, M.S., E.M., 1961, Ph.D., E.M., 1964, is President & CEO of TERA, Inc. in Houston, Texas. He also serves as a volunteer at M.D. Anderson Cancer Center. **Donald E. Roach**, B.S., A.S.E., 1964, is President of General Aviation, Ind. Inc. in Weatherford, Texas. He is involved in local church and civic activities and local and national politics. **Charles A. Rodenberger**, Ph.D., A.S.E., 1968, is retired and living in Baird, Texas. He is Consulting Director of the West Texas Historical Association, a member of Kiwanis club and a Sunday school teacher. **Aubrey L. Stratton**, B.S., A.S.E., 1966, is Director of Airframe & Installation Design at Lockheed Martin in Fort Worth, Texas. He is a member of the AIAA International Committee, and a member of SAE and ICAS. He is a Lockheed Martin Corporate University Executive for UT Austin. **John A. Thorson**, B.S., A.S.E., 1969, founding member of Offshore Energy Center, is retired from Global Marine Inc. as Vice President of Construction, and is now consulting while living in Katy, Texas. He is a lifetime member of the Texas Exes Association. **Robert D. Wakefield**, B.S., A.S.E., 1967, is a Senior Engineer for JAYCOR in New Mexico. **John L. Whitesides, Jr.**, B.S., A.S.E., 1965, Ph.D., 1968, is a Professor at George Washington University. He is a Fellow of AIAA and a member of the Peninsula Chamber of Commerce. **Jerry W. Whitten**, B.S., A.S.E., 1965, M.S., A.S.E., 1967, is Regional Director of Marketing for Boeing in Seattle, Washington. **Perry D. Whitten**, B.S., A.S.E., 1965, M.S., A.S.E., 1967, is a Senior Manager for Test & Evaluation at Lockheed Martin in Fort Worth, Texas. He is a member of the National Defense Industrial Association and a private pilot. **Henry E. Wilson**, B.S., A.S.E., 1969, is a Staff Engineer at Bell Helicopter Textron, Inc. in Fort Worth, Texas. He is a member of AHS and has chaired the UT Austin ASE Departmental Visiting Committee. He has also been a city council member for 16 years. **Walter R. Wilson**, B.S., A.S.E., 1960, retired as Director of Delta II Programs Boeing on March 31, 1998 and says he "loved all 39 years". He enjoys golfing, skiing and fly fishing and recently purchased a ranch on Lake LBJ to enjoy some of these past times. **Ronald E. Womack**, B.S., A.S.E., 1965, is Director of Engineering for First Baptist Church in Dallas, Texas. **William J. Yanta**, B.S., A.S.E., 1962, M.S., A.S.E., 1964, is an Aerospace Engineer for Sverdrup Technology, Inc. in Silver Spring, Maryland. He is an Associate Fellow of AIAA and a member of SPIE.

1970's

Michael R. Anderberg, Ph.D., A.S.E., 1971, is a Senior Analyst at Decisive Analytics Corporation in Arlington, Virginia. He is a board member of Friends of Dragon Run and Middle Peninsula Land & Trust. **Carl Bergt**, B.S., A.S.E., 1970, is a Manager Engineer for Rheem Manufacturing Company in Fort Smith, Arizona. **Steve Chenault**, B.S., A.S.E., 1971, lives in Plano, Texas. **Mike Culbertson**, B.S., A.S.E., 1979, is Controller/Director of MIS for ABB Network Management in Sugar Land, Texas. **Robert G. Gottlieb**, Ph.D., A.S.E., 1973, is an Associate Technical Fellow for Boeing in Houston, Texas. **Walter E. Hammond**, M.S., A.S.E., 1973, is a Senior Engineer for Pace and Waite, Inc. in Alabama. He is an Associate Fellow of AIAA. **Scotty L. Jergenson**, B.S., A.S.E., 1970, is President of Flight Test, Inc. in Cheney, Kansas. He is a member of the Society of Experimental Test Pilots and works as a volunteer for Angel Flight Central. **Gary W. Johnson**, B.S., A.S.E., 1972, M.S., A.S.E., 1973, is an Engineer for McNamara Custom Services in Waco, Texas. He recently invented a simple tool to eradicate cactus from pastures. **John W. Key**, B.S., A.S.E., 1971, is a Program Specialist at Texas Natural Resource Conservation Commission in Austin, Texas. **Michael L. Kinane**, B.S., A.S.E., 1976, is a Senior Program Analyst at Robbins-Gioia LLC at Wright Patterson AFB, Ohio. He also sponsors international officers who are working toward advanced degrees at Air Force Institute of Technology. **Mark L. Labaj**, B.S., A.S.E., 1974, is a Pastor for Temple Brethren Church in Temple, Texas. **James P. Lattimore, Jr.**, B.S., A.S.E., 1970, M.S., A.S.E., 1972, is owner of The Lattimore Company in Fort Worth, Texas. **Gregory L. Morris**, B.S., A.S.E., 1971, is CEO of MurphyMorris, Inc., in Dallas, Texas. **Michael K. Parish**, B.S., A.S.E., 1977, is self-employed as a General Partner in investments in San Antonio, Texas. **Les H. Richards**, B.S., A.S.E., 1971, is Director of Business Development for BAE SYSTEMS in Austin, Texas. **Charles W. Ruckel**, B.S., A.S.E., 1971, is a Lieutenant for the Collin County Sheriff's Office in McKinney, Texas. **Terry D. Schmidt**, B.S., A.S.E., 1972, is a Supplier Quality Engineer for Dell Computer in Round Rock, Texas. **Ken Senkow,** B.S., A.S.E., 1972, retired in November 2000 from Kelly AFB and lives in San Antonio, Texas. **Richard W. Smalling**, B.S., A.S.E., 1970, is the J. Brent Sterling Professor of Cardiovascular Medicine at UT Medical School in Houston, Texas. He the Associate Editor of *Circulation* and an AHA Texas Affiliate. **Richard T. Weiss**, Ph.D., E.M., 1972, is Senior Technical Advisor for Kellogg Brown & Root in Houston, Texas. He is Treasurer of Offshore Mechanics & Arctic Engineering Technical Chapter of ASEM, Houston.

1980's

Courtenay B. Allen, B.S., A.S.E., 1989, is a registered Patent Attorney in San Antonio, Texas. **Albert Arrieta**, B.S., A.S.E., 1989, is a graduate student at the University of Oklahoma. **Roger E. Balettie**, B.S., A.S.E., 1985, is a Program Manager at Applied Research Laboratories in

Austin, Texas. He is currently Vice President of the Society of Performers, Artists, Athletes and Celebrities for Space Exploration, "a non-profit space advocacy group devoted to the promotion of space exploration through the use of celebrity sponsored public service announcement, student scholarships, and more." **Bruce Boulanger**, B.S., A.S.E., 1987, is a Research Engineer for Schlumberger in Houston, Texas. **Pamela Lyons Carel**, B.S., A.S.E., 1986, is a Pilot for the U.S. Navy in Corpus Christi, Texas. She is the recipient of two Combat Strike Air Medals in the Gulf War, 1995, 1997. She is also active in the Corpus Christi Texas Exes Association and serves as the Vice President of the Corpus Christi Delta Gamma Alumnae group. **Preston H. Carter**, M.S., A.S.E., 1986, is a Program Manager for Lawrence Livermore Lab/DARPA in Virginia. **Arthur F. Crum**, B.S., A.S.E., 1982, is a Pilot for Delta Airlines. He flies MD 88's and MD 90's and is a First Officer. Arthur is also a member of the Fort Worth Audubon Society and works as a volunteer at the Fort Worth Nature Center. **Charles D. Curtiss**, B.S., A.S.E., 1987, is a Network Consulting Engineer for Cisco Systems in Richardson, Texas. He is a member of CCIE. **Jon T. Cutshall**, B.S., A.S.E., 1988, is a Senior Research Engineer at Southwest Research Institute in San Antonio, Texas. He is Treasurer and Education and Pre-College Outreach Chairman for the AIAA SwTX Chapter and active in San Antonio BEST (Boosting Engineering, Science & Technology). **Wiede Cutshall**, B.S., A.S.E., 1988, is Chief Engineer for Structural Integrity at Aircraft Design Services Inc. in San Antonio, Texas. She is a member of AIAA, SWE and San Antonio BEST. **Laura E. Dickey**, B.S., A.S.E., 1987, is a Project Engineer for TRW Space & Electronics in Redondo Beach, California. She also teaches piano lessons and is a church organist. **Paul R. Donnelly**, B.S., A.S.E., 1980, is a Corporate Quality Manager for Kent Electronics in Sugar Land, Texas. He works with the YMCA in his local community. **Thomas R. Ellis**, B.S., A.S.E., 1987, is an Engineer IV at United Space Alliance in Houston, Texas. **Laura Bass Gibson,** B.S., A.S.E., 1988, M.S., A.S.E., 1993, is a stay-at-home mother of three, after working at NASA early in her career. She says being an at home mom is "quite an education!" Laura also works for the Lector and Mother's Support Group at St. Catherine of Siena Church. **Norman M. Grady**, M.S., M.E., 1988, is an Assistant Professor in Civil and Mechanical Engineering for the U.S. Military Academy. He is a member of the American Society for Engineering Education and the Society of American Military Engineers. **David D. Greif**, B.S., A.S.E., 1989, is a Data Warehouse Developer and Administrator at United Space Alliance. He is the webmaster for Houston Texas Exes and Bay Area Texas Exes. **Douglas C. Griffith**, B.S., A.S.E., 1984, is an Attorney at Paul, Hastings, Janofsky & Walker in Los Angeles, California. He is a USMC Reserve pilot and Adjunct Professor of Aviation Law at Loyola Law School. **Robert W. Hazlehurst**, B.S., A.S.E., 1985, is a Senior Consultant in Air Transport at IBM Global Services in Colorado. His personal interests include golfing, skiing, Tae Kwon Do and vintage British sports cars. **Simon Ho**, B.S., A.S.E., 1987, is a General Manager for Lithcon Petroleum in Houston, Texas. He is a member of the National Petroleum & Refineries Association and serves as Director of Rainbow Challenge. **Ronald W. Humble**, M.S., A.S.E., 1984, Ph.D., A.S.E., 1987, is the General Bernard A. Schriever Chair in Space Systems Engineering at USAF Academy. He is a member of AIAA and ASEE. **Misty Hibbler Khan**, B.S., A.S.E., 1989, is Vice President of New Business Development at Telerx in Houston, Texas. She serves as the Gulf Coast Leadership Seminar Chair for the Hugh O'Brian Youth Leadership. **Aik-Siong Koh**, Ph.D., E.M., 1984, is self-employed in software development in Los Alamos, New Mexico. He is the creator of 'freeCAD: 3D CAD with Motion Simulation'. **Robert A. Luke**, B.S., A.S.E., 1983, M.S., A.S.E., 1984, is an Engineer for the U.S. Department of Defense and is a member of AIAA. **Rodney E. Mack**, B.S., A.S.E., 1986, M.S., A.S.E., 1987, is a Staff Software Engineer at Lockheed Martin in Denver, Colorado. **B.S. Mani**, M.S., E.M., 1982, is President of Solid Idea, Inc. in Hinsdale, Illinois. He works with applications of x-rays for industrial applications, and also teaches undergraduate mechanical design courses at community colleges. **Jalal Mapar**, B.S., A.S.E., 1982, M.S., A.S.E., 1984, is Assistant Vice President of SAIC – Advanced Technology Group in McLean Virginia. He is Editor for *AIAA National Capital Section Newsletter* and President of Links Pond Cluster Association. **William J. McAdams**, B.S., A.S.E., 1981, is President of WJM Capital Management, Inc., in Austin, Texas. He is also a part-time Adjunct Professor at the UT Business School. **Dennis R. Messenger**, B.S., A.S.E., 1988, is a Liaison Engineer for Boeing Commercial Airplane Group in Seattle, Washington. **Jill R. Meyers**, B.S., A.S.E., 1987, works in C31 Strategic Systems at Raytheon in Falls Church, Virginia. **Michele Stillman Miller**, B.S., A.S.E., 1986, is President of Red Canyon Software, Inc. in Littleton, Colorado. **Darrel G. Monroe**, B.S., A.S.E., 1986, M.S., A.S.E., 1988, is a Navigation Flight Controller for the United Space Alliance. He plays tuba in the Brass group at church, and plays with the Clear Lake Symphony when the principle tubist is not performing. **Paul E. Murray**, Ph.D., E.M., 1989, is an Advisory Engineer for Bechtel BWXT in Idaho. He is a member of ASME, Technical Reviewer for Heat Transfer and Fluids Engineering Division and Principal Reviewer for *Welding Journal*. **William D. Myrick**, B.S., A.S.E., 1988, works in Software/Mission Planning for Tybrin Corporation in Fort Walton Beach, Florida. **Vannaroth Nuth**, B.S., A.S.E., 1989, M.S., A.S.E., 1991, is a Senior Member of the Technical Staff for Satellite Navigation at The Aerospace Corporation in Los Angeles, California. **Kevin S. Partin**, B.S., A.S.E., 1988, is a Technical Account Manager for Compaq Computer Corporation in Houston, Texas. **Miguel R. Sanchez**, M..S., M.E., 1989, is an Engineering Supervisor for Operadora Cerro Negro (Exxon Mobil) in Maturin, Venezuela. **Scott A. Schlaefli**, B.S., A.S.E., 1983, is a Pilot for American Airlines in Fort Worth, Texas. **Frederick S. Siegel**, B.S., A.S.E., 1982, is a Senior Staff Engineer for F-22 Flight Test at Lockheed Martin in Fort Worth, Texas. **W. Mark Sims**, B.S., A.S.E., 1981, is a Pilot Instructor for United Airlines in Denver, Colorado. **Ray P. Stallings**, B.S., A.S.E., 1980, is a Captain for Delta Airlines. **Marc Stevens**, B.S., A.S.E., 1984, is an Associate of Booz-Allen & Hamilton in Falls Church, Virginia. **William D. Tepper**, M.S., A.S.E., 1987, is a Senior Software Engineer for Wave7 Optics in Alpharetta, Georgia. He serves as Treasurer for the Libertarian Party of Georgia and Chair of the Libertarian Party of Forsyth County. **Marvin H. Walton**, B.S., A.S.E., 1987, is Principal Account Manager for Foxboro in Houston, Texas. **Daniel M. Wilbers**, M.S., A.S.E., 1988, is a Senior Project Manager for ESSCOR, Inc. in Solana Beach, California.

1990's - 2000

Aaron J. Brown aboard NASA's KC-135 (the "Vomit Comit") performing a simple experiment to observe the gyroscopic precession of a bicycle wheel in a micro-gravity environment. He and a co-mentor were paired with a team of high school students, some of whom were aboard the flight as well.

Joshua Ashenberg, Ph.D., 1992, is a Senior Analyst for Alphatech in Burlington, Massachucetts. **Nikola Babic**, B.S., A.S.E., 1993, is Director of Product Marketing at PayMate.net in Austin, Texas. **Richard B. Bach**, B.S., A.S.E., 1990, is a Senior Systems Engineer in Avionics at Boeing in Wichita, Kansas. **Angela Braun**, B.S., A.S.E., 2000, works at NASA Johnson Space Center as an Ascent Analyst. **Aaron J. Brown**, M.S., A.S.E., 2000, works at

NASA JSC in ISS Trajectory Operations. **Jospeh R. Carpenter**, Jr., B.S., A.S.E., 1990, is a Contract Engineer for B & M Aerospace in Texas. **Thomas J. Connolly**, M.S., A.S.E., 1995, is an Assistant Professor at Penn State Erie. He has also served missionary trips to Mexico. **Mehmet Cuhadaroglu**, M.S., A.S.E., 1990, is a Principal Programmer for San Diego Data Processing. **Peter Dailey**, B.S., A.S.E., 1994, works at Lockheed Martin in Houston, Texas. **Clara Villarreal Enriquez**, B.S., A.S.E., 1991, is a Program Management Aerospace Engineer for the Federal Government in Washington, D.C. She is a member of AIAA, volunteers as a tutor and is a religious education teacher. **John A. Euker**, B.S., A.S.E., 1990, is the ODRC Software Lead for GHC Corporation in Houston, Texas. He is the recent recipient of a second Silver Snoopy Award, 2001 and a Space Flight Awareness Honoree Award, 2001. He also volunteers at The Arts Alliance Center at Clear Lake. **Andre D. Forrest**, B.S., A.S.E., 1998, is an Aircraft Stress Analyst for AERODESIGN Aircraft Engineering in Austin, Texas. **Caroline Franklin**, B.S., A.S.E., 1998, is a Pilot for Continental Express. **David A. Fraser**, M.S., A.S.E., 1997, is an Aerospace Engineer at SAIC in Huntsville, Alabama. **Tammy Long Gafka**, B.S., A.S.E., 1991, M.S., E.M., 1993, works at NASA JSC in Structural Mechanics. **Richard M. Garcia**, B.S., A.S.E., 1997, is pursuing a Master's Degree in Nuclear Engineering at Texas A & M. **Fernando D. Gomez**, B.S., A.S.E., 1994, is a Project Engineer for Raytheon Aircraft Company in Wichita, Kansas. He is a member of AIAA, a lifetime Texas Exes member, and Campus Manager to UT Austin for Raytheon. **Richard G. Gomez**, B.S., A.S.E., 1991, is an Engineering Manager for Standard Aero San Antonio, Inc. **Jonathan P. Graf**, B.S., A.S.E., 1991, is a Software Engineer for Raytheon in Houston, Texas. **Michael J. Heiser**, B.S., A.S.E., 1995, is an Engineer at Boeing in Houston, TX. **Greg Holt**, B.S., A.S.E., 2000, is pursuing graduate studies in ASE at UT Austin. He is a member of AIAA and Sigma Gamma Tau, and is the recent winner of the ASE/EM Official Logo design. **Greg D. Humble**, B.S., A.S.E., 1993, works for United Space Alliance as an Engineer III. **Robert H. Jenkins**, B.S., A.S.E., 1997, is an Engineer for 3G Cellular, Inc. in San Diego, California. **Jeffrey Kobes**, B.S., A.S.E., 1994, is a Minister for Great Commission Ministries in Austin, Texas. **Eric R. Lehman**, B.S., A.S.E., 1997, is an Engineer/Scientist in Aerodynamics at Boeing in Huntington Beach, California. He is the recent recipient of the Pride@Boeing Award, 2000. He is also a soccer coach for 8 and 9 years olds. **Jesse A. Leitner**, B.S., A.S.E., 1990, is a GN&C Systems Engineer at NASA GSFC. He is the Technical Program Chair for the 2002 AIAA GN&C Conference, a soccer coach and an elementary school volunteer. **Trent D. Martin**, B.S., A.S.E., 1994, is a Deputy Project Manager for Lockheed Martin in Houston, Texas. **Balazs Marton**, M.S., A.S.E., 2000, is a Mechanical Engineer at Zebra Imaging in Austin, Texas. **Anne M. Mayoral**, B.S., A.S.E., 1996, M.S., A.S.E., 2000 is a Research Engineer III at Applied Research Laboratories in Austin, Texas. **James G. McEwen**, B.S., A.S.E., 1993, is an Attorney for Staas & Halsey, LLP in Washington, D.C. **Dennis L. McWilliams**, B.S., A.S.E., 1993, is President of Operations for Chrysalis BioTechnology in Galveston, Texas. **Edgar A. Medina**, B.S., A.S.E., 1999, is an Engineer for NASA JSC. **Matthew J. Mereness**, B.S., A.S.E., 1991, is a Manager at Deloitte & Touche in Houston, Texas. He is also a Sunday school teacher and girls' soccer coach. **Scott Messec**, B.S., A.S.E., 1991, is Manager of Computing Services for ASE/EM at UT Austin. **David S. Murray**, B.S., A.S.E., 1997, is a Naval Aviator for the U.S. Navy. **Nassib Nabaa**, M.S., A.S.E., 1994, Ph.D., A.S.E., 1997, is a Senior Systems Engineer at SNC in Sparks, Nevada. **Douglas A. Nichols**, B.S., A.S.E., 1992, is a Senior Engineer for Raytheon Aircraft Company in Kansas. He also volunteers with the Big Brothers and Big Sisters organizations. **Robin Kinsey O'Hara**, B.S., A.S.E., 1998, is an Aerospace Engineer for Lockheed Martin in the Orbital Debris Program Office at NASA JSC. She participates in March of Dimes yearly. **Eric D. Redding**, B.S., A.S.E., 1996, is a Senior Engineer for Honeywell in Albuquerque, New Mexico. He is a member of AIAA. **Kenneth M. Rock**, M.S., A.S.E., 1996, is an Engineer for Boeing (Iridium Satellite) in Leesburg, Virginia. **Stephen Schambeck**, B.S., A.S.E., 1991, is a Structural Engineer for PDC Inc. Consulting Engineers in Puyallup, Washington. **Erika Carlson Schnurr**, B.S., A.S.E., 1990, M.S., A.S.E., 1993, is a Software Advisor for Nortel Networks in Richardson, Texas. **Michael L. Scott**, B.S., A.S.E., 1990, is an Ascent Flight Design Engineer in Space Flight Operations for Barrios Technology in Houston, Texas. He is a member of AIAA , an Amateur Radio Operator (N5LZX) and a member of the Professional Association of Diving Instructors. **Matthew T. Smith**, B.S., A.S.E., 1993, is a Physician at Thomas Jefferson University Hospital in Philadelphia, Pennsylvania. He will complete his residency in Internal Medicine in June 2001, then begin a Fellowship in Nephrology in July 2001. **Cecil A. Strickland**, B.S., A.S.E., 1999, is an Infantry Officer for the U.S. Army. **Charles E. Tilburg**, B.S., A.S.E., 1992, is a Postdoctoral Scientist at Florida State University. **Adam N. Turner**, B.S., A.S.E., 1999, is a Pilot for the U.S. Navy in NAS Oceana, Virginia. He is currently flying F/A-18 Hornets and is the recent recipient of the "Top Hook" Award during Carrier Qualifications aboard USS Eisenhower, February, 2001. **Phillip Van Dyke**, B.S., A.S.E., 1992, is a Synchronous Engineer for Delphi Automotive Systems in Dearborn, Michigan. **Curt von Braun**, Ph.D., A.S.E., 1991, is Group Leader (Space Surveillance and Space-based National Missile Defense) for Lincoln Laboratory at MIT. **James Westgate**, B.S., A.S.E., 1996, is an Executive Officer for the U.S. Army in Ft. Leonard Wood, Missouri. **Leland J. Wiesehuegel**, B.S., A.S.E., 1992, is an IT Specialist for IBM in Austin, Texas. **Lisa Bell Wilkinson** , M.S., A.S.E., 1992, is a self-employed Counselor in Denver, Colorado. She says, "I attend seminars related to counseling and consider it an honor to be a wife and a full-time mother of a 15 month old son and a counselor to five women." **Jiann-Yuarn Wu**, Ph.D., 1992, is a Finance Analyst for Ford Motor Company in Michigan. **Andrew B. Yacenda**, B.S., A.S.E., 1996, works for Americredit in Texas.

New Logo for ASE/EM

Greg Holt, recent winner of ASE/EM Official Logo Contest.

The department recently held a contest open to all ASE/EM students, faculty and staff for a new official departmental logo which would best capture the essence of the department. A Logo Committee comprised of ASE/EM faculty, staff and students, chose the winner of the contest. The $200 cash prize for the logo design was awarded to Greg Holt, current ASE graduate student. Congratulations Greg, and thanks for your hard work!

ASE/EM Official Logo

The Longhorn Liftoff
The University of Texas at Austin
Aerospace Engineering & Engineering Mechanics
W. R. Woolrich Laboratories, 215 G
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Dr. Hans Mark Talks About His 1000 Days at The Pentagon

From June 1998 to March 2001, I served in the Pentagon as Director of Defense Research and Engineering. I was the eleventh person to hold that title. The post was established in 1958 following the crisis created by the Soviet Sputnik, the first Earth orbiting satellite. The Director of Defense Research and Engineering is the principal technical and scientific advisor of the Secretary of Defense. In addition, I also had some specific responsibilities in the areas of nuclear weapons, ballistic missile defense and the chemical and biological defense program.

Dr. Hans Mark in Washington, D.C.

It is the business of the Department of Defense to fight and win wars. In the spring of 1999, the United States fought a campaign in Kosovo, which resulted in achieving our military and ultimately, our political purposes as well. The Serbian Army was ejected from Kosovo, and this year The Hague indicted former Yugoslav President Slobodon Milosevic for crimes against humanity during the Bosnian War. What was most satisfying about the campaign was that two of the decisive weapons used during the campaign, stealth aircraft and gravity bombs using a GPS based guidance system, were initiated during my term of service as Secretary of the Air Force (1977 to 1981).

Great strides have been made in the past three years in the development of defenses against ballistic missiles. The advanced Patriot anti-missile missile has successfully demonstrated hit-to-kill technology against tactical ballistic and cruise missile. Last fall, the Tactical High Energy Laser now being tested at the White Sands Test Range successfully shot down thirteen Katyusha rockets. Both of these systems will be ready for deployment in the field in two or three years. I was heavily involved in these test programs.

Even though the experiences I have described were interesting, I am very glad to be back at the University to work with our students.