

Greetings from Your Alumni Constituent Board

We have just completed our 2008 AE Alumni Board meeting, and it has caused me to think about a couple of topics that should be of interest to you.

First let me congratulate those faculty and students who have won awards during the past year, especially the student teams that swept the AIAA Space Design Competition. This is one very good sign of a vigorous and talented Department. I want to also acknowledge Craig Dutton who has picked up the reins as Department Head and by all indications is doing a very good job.

We added something new to our meeting this time. In the past we have generally listened to and commented upon information that members of the Department presented us. This time, Board members prepared some short presentations on the "state of the industry" in four different categories:

- large aviation projects
- large space projects
- small aviation and general aviation projects and
- commercial and entrepreneurial projects.

The intent of these presentations was to give the Department an indication of what kind of skills new graduates should have as they enter the workforce and the types of topics the Department should be teaching to its students. We also wanted to give an indication of longer term technology trends that would require research in areas of interest to the Department. This seems to have been a useful experiment and we plan to continue with it next year. But we will look for an appropriate location so that we can invite a larger number of faculty and students to hear these presentations.

As I am writing this article, this idea of trends in the industry and the skills needed to be ready to work in these areas has been reinforced for me. I am sitting in a NASA van located on top of a lava flow at about 7,000 feet altitude in the middle of nowhere (actually in the northwest corner of Arizona, near Flagstaff, not far from where some early testing and training for Apollo took place). This van is a sort of miniature mission control supporting one concept for a small, two-person pressurized rover that NASA is evaluating for lunar missions not scheduled for flight until after 2020. These tests are important for a number of reasons. One very important reason is that analysis can only go so far before you have to build some of these concepts and try them out, especially when you are trying to do something that has rarely, if ever, been done before.

The picture I have included here shows NASA's current best understanding of what a two-person pressurized rover, capable of performing the kinds of missions NASA wants to perform, could look like. But this is a means for NASA to get a better understanding of the real implications of a design before they start building flight hardware. The engineers and astronauts and mission controllers participating in these tests will learn lessons from this and look at whether their preliminary analyses hold up, or if they need to be changed. And there will undoubtedly be more field tests like this.

You may be asking yourselves why I am using a wheeled vehicle as an example for an Aerospace Engineering Department. Those of you who remember their history will recall that the only other human surface transportation vehicle—the Lunar Rover Vehicle—was not the work of Ford or GM, companies that NASA first approached. Instead, Boeing did the design work and construction. This aerospace company understood not only the environment in which this rover would operate but also the transportation system that would be used to deliver it and the other systems with which it would interface. Those of you who are students now are likely to have an opportunity to work on the development of this new lunar rover in the not too distant future. And the education you are receiving now will give you the broad-based tools you will need to successfully work on the design of a surface rover or a lunar lander or a spacecraft that will always operate in space. But analytical tools will only get you close to the final design. You will still need to build and test your ideas to understand if they will really do what you want them to do, and to reveal facets of the vehicle's operation that become apparent only when your design must interact with other systems. This is where lab classes and design-build-fly contests will help take your understanding beyond what can be accomplished with analysis alone.

I am looking forward to reading about Aerospace Engineering Department graduates playing a leading role in developing the next generations of aerospace vehicle, whether they fly in the air, in space, or rove around on the surface of other planets.

Stephen J. Hoffman, Ph.D.
78, 80, 84



Model of a two-person, pressurized space rover.

Class Notes

JOHN NICHOLAS, BS 68, recently published two books, *The Portal to Lean Production* and *Project Management for Business, Engineering, and Technology*, the later of which includes several examples and illustrations from the aerospace industry. He is a professor of operations management at Loyola University Chicago, where he has been since 1977.

PETER G. HUSEMAN, BS 79, MS 80, has been named Senior Manager for the Aerosciences Organization on the Orion Program for Lockheed Martin Space Systems in Denver. Orion, also known as CEV (Crew Exploration Vehicle), is a NASA contract Lockheed has been awarded through 2013.

ALEXANDER ANTARTIS, MS 81, visited the Aerospace Engineering Department with his son, Dimitrios, who transferred to AE as an undergraduate this fall. Alexander is Director of Research and Development for Hellenic Defense Systems in Athens.

CLARK SNODGRASS, BS 85, recently returned to campus to speak to aerospace and other engineering students at the Illinois Space Society monthly meeting. He spoke on "Building Satellite Systems: Advancing our Understanding of the Universe We Live In." Snodgrass works at Northrop Grumman Space Technology in Redondo Beach, California where he is the Director of System Engineering Integration Test and Operations for the National Polar-Orbiting Operational Environmental Satellite System (NPOESS), the nation's next generation environmental and operational weather system. While visiting the University of Illinois, he was pleased to catch up with Profs. John Prussing, Harry Hilton, and Bruce Conway.

DANIEL T. JENSEN, BS 88, has been appointed Chief of Engineering Management Systems for Rolls-Royce Corp. In this role, Jensen will be responsible for leading this new team, including Product Definition Processes, Configuration Services, Publication Services, Engineering Data Services and Outsourcing Services, to define and implement efficient approaches to managing the engineering process and documentation. Engineering Management Systems is a new organization comprised of functions that were previously part of Propulsion and Power Systems Engineering, Operations Engineering and Engineering Improvement. Jensen joined Rolls-Royce in 1995 and has worked in various engineering roles during this time, most recently as the Global Engineering Collaboration Team Lead in support of the Rolls-Royce Product Lifecycle Management (PLM) development program. He also previously worked for six years at Boeing in various aerodynamics, controls, and propulsion engineering roles.

Visiting campus for the Fall 2008 Engineering Employment Expo were AE alumni **TODD KELLER, BS 91**, MSV Mission Systems Manager for Boeing Satellite Systems International, Inc. in El Segundo, California; **PAUL MARTIN, BS 06**, civilian Flight Test Engineer for Naval Air Systems Command in Patuxent River, Maryland; and **RICHARD "TRIP" PAGE, BS 05, MS 07**, from Analytical Graphics, Inc. (AGI), Pennsylvania.

ERIK ANTONSEN, BS 97, MS 01, PHD 04, is back on campus to finish medical school as the last part of his MD/PhD program. He spent the last year in Zambia, Africa, as a Scholar for the National Institutes of Health/Fogarty International Center Research Program. Antonson plans to pursue aerospace medicine.

AE alumni **JULIA LAYSTROM, BS 00** and **BRIAN WOODARD, BS 01, MS 04**, were married on Sunday, May 25, 2008, at the Illini Union. AE alumni in attendance were: **DAVID CARROLL, BS 85, MS 86, PHD 92**, **TYLER FIELD, BS 05, KIRK KITTELL, BS 03, MS 06**, **CASEY HOERCHER, BS 07, EDWARD WHALEN, BS 01, MS 03, PHD 07, MATTHEW HAUSMAN, BS 01, SCOTT ZIMMER, BS 01, STEVEN NEURAUTER, BS 00, MS 02, JENNIFER HARGENS RYSANEK, BS 97, MS 01, PHD 06, FILIP RYSANEK, BS 98, MS 02, PHD 07, GABRIEL BENAVIDES, BS 01, MS 04, MATTHEW SEXTON, BS 03, MILES JOHNSON MS 07, HEATHER ARNESON MS 07, JOSEPH ZIMMERMAN, BS 01, MS 03, and DARREN KING, BS 96, MS 00.**

AE alumni very active in the American Astronautical Society (AAS) include **KIRK KITTELL, BS 03, MS 06**, and **JEFF ELBEL, BS 90, MS 93**. Kittell is Vice President-Education and serves on the AAS Executive Committee as liaison to Students for the Exploration and Development of Space -USA (SEDS-USA). Elbel is the Editor of *SPACE TIMES* magazine. Kittell is a systems engineer at Orbital Sciences Corporation and Elbel is an engineer at SAIC in Schaumburg, Illinois.

ANDREA (FRANZEN) LACKEY, BS 06, is now in charge of FAA compliance for Frasca International in Urbana, Illinois. Previously, she was working at Rolls-Royce in Indianapolis.

Both **JOHN MACKIN, BS 06, MS 08**, and **ADI BOULOS, BS 08**, have accepted positions in Mission Control at NASA Johnson Space Center in Houston. They join other alums, **CATHY KOERNER, BS 87, MS 89**, and **MIKE MISIORA, BS 94**.

JON HUFFMAN, BS 08, has taken a position with United Space Alliance as an ISS Flight Controller and Astronaut Crew Instructor with the Motion Control Group. He reports the work at NASA is "absolutely fantastic!"

In Memoriam

ERIK C. RINGSTAD, BS 90, 39, of Geneva, Illinois, died May 21, 2008, at his home. He was born Oct. 22, 1968 in Chicago. Erik was formerly employed by Accenture Consulting in Chicago. He also was a member of St. Peter's Catholic Church and the Fox Valley Aero Club. He is survived by his daughter, Emma; his parents, David and Joyce Ringstad of Geneva; and a sister, Dawn (James) Jacoby of Downers Grove, Illinois.

CHARLES E. BOND, PROFESSOR EMERITUS OF AEROSPACE ENGINEERING, died Jan. 5, 2008, at the Champaign County Nursing Home, Urbana.

Bond was born Feb. 1, 1930, at Royston, Georgia, a son of Jones T. and Irene Nelson Bond. He earned a bachelor's in physics from the Georgia Institute of Technology in 1951. He earned a master's in Aerospace Engineering and a doctorate in Aeronautical and Astronautical Engineering from the University of Michigan in 1956 and 1964, respectively.

He was Project Engineer at the Jet Propulsion Lab at the California Institute of Technology in Pasadena, California, from 1956 to 1957. Bond was also Lead Scientist for the hyperthermal wind tunnel group at AVCO Research and Advanced Development Division in Wilmington, Massachusetts.

Bond was Professor of Aerospace Engineering at the University of Illinois at Urbana-Champaign from 1964 until his retirement in 1999. His work centered on supersonic and hypersonic wind tunnel testing and electric arc research. While at the University of Illinois, he designed the thermionic rail accelerator, a unique experimental facility for conducting research in plasma physics. He taught courses in aerodynamics, magnetohydrodynamics, and electric propulsion. Bond developed and taught university courses in renewable energy sources, wind power technology, the energy-environment crisis, and technology assessment for non-engineers.

He was a member of the American Wind Energy Association, the American Solar Energy Society, the American Institute of Aeronautics and Astronautics, and the American Society for Engineering Education.

Bond also was an actor, appearing locally in community theater and university productions of "The Glass Menagerie," "Blithe Spirit," "Arsenic and Old Lace," "A Thousand Clowns" and "Look Back in Anger," among others. He served as president of the Champaign-Urbana Community Theatre in 1970 and 1971.

In 1968 Bond and his wife, Carol, formed a comedy team known as "Charles and Carol," and for the next four years performed their original comedy show for many Central Illinois organizations, including the USO at Chanute Air Force Base and the Society of Professional Engineers.

Bond's professional acting credits include "Two for the Seesaw" at Red Barn Playhouse in Rockton, and many productions at The Little Theater on the Square in Sullivan, including "Sweet Charity," "Teahouse of the August Moon," "Annie Get Your Gun," "1776" and "A Christmas Carol."

Concerts that students and faculty of the University of Illinois Department of Dance gave at the Krannert Center for Performing Arts inspired Bond to write poetry reflecting his singular gift for capturing in words the movement, the color, the meaning, and the grace of dance.

He married Carol A. Unzicker on April 4, 1971, at Champaign. She survives. Also surviving are three sons, Turner D. Bond of Columbia, Mo., Nelson K. Bond of Champaign, and Kyle E. Bond of Wauconda; three daughters, Laura S. Bond-Harris of Naperville, Irene Bond Anderson of Batavia and Cynthia D. Bond of Chicago; one stepson, Timothy Unzicker of Naperville; five grandchildren, Grayson Bond, Lindsay and Andrew Bond-Harris, and August and Dixon Anderson; and two sisters, Janet Chester of Savannah, Ga., and Alice Nelson Caldwell of Atlanta, Ga.

Bond's parents and his first wife, Frances Dixon Bond Turquette, preceded him in death.



Charles E. Bond

AE Alumnus to Head Spaceport America



Steven Landeene

The New Mexico Spaceport Authority (NMSA) Board in January hired Steven Landeene, BS 86, as the new Executive Director for Spaceport America, the nation's first purpose-built commercial spaceport.

"Steven Landeene's credentials speak for themselves," said New Mexico Governor Bill Richardson. "His years of experience in engineering and business will be beneficial to marketing the aerospace industry and more importantly, to this critical stage for Spaceport America."

Landeene has extensive experience in aerospace-related fields, including 20 years with Honeywell Aerospace and three years with Landmark Aviation. As the Director of Aftermarket Services Marketing, Sales and Support at Honeywell International, Inc., Landeene served as the global marketing and sales support leader for the company's aftermarket services. Most recently, Landeene served as the Director of Strategy and Planning for Sales and Marketing of Landmark Aviation out of Phoenix, Arizona.

"I'm excited to be spearheading such a groundbreaking endeavor that will create increased commercial access to space," said Landeene.

As the Executive Director for Spaceport America, Landeene's duties include the oversight of all spaceport operations, staffing, planning and development. His role encompasses working as a liaison between government entities and managing the Spaceport's public relations. In addition, he works closely with New Mexico State University, nurturing a unique educational partnership between Spaceport America and the New Mexico education system. Landeene's first task as Executive Director has been to transition Spaceport America from planning to actualization.

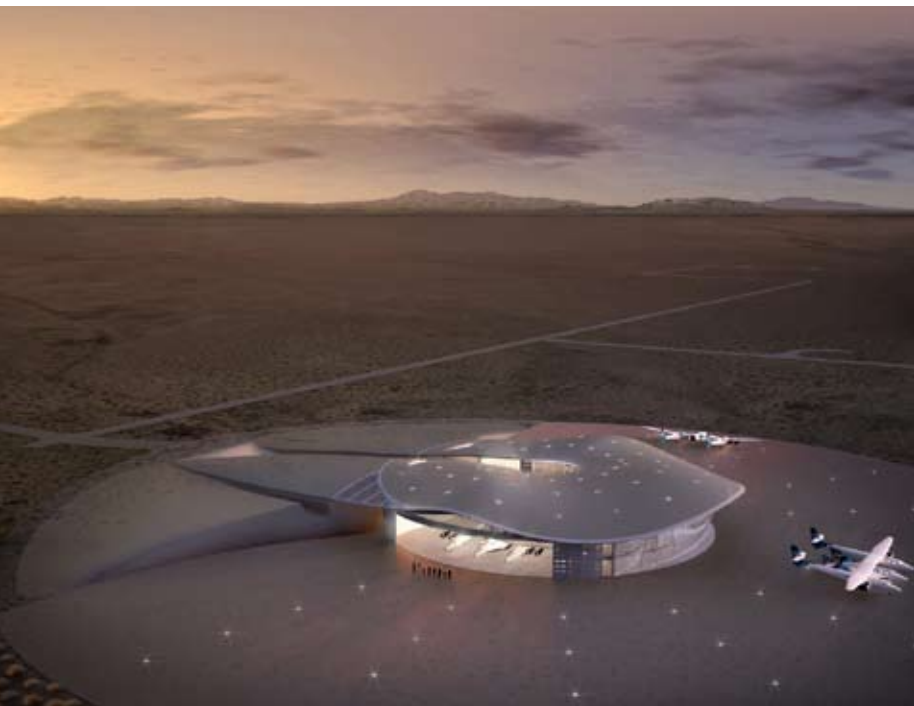
Spaceport America, a landmark project, is poised to become one of the world's leading commercial spaceport centers to be completed in Sierra County, 45 miles northeast of Las Cruces. According to economic forecasts by NMSU and Futron, Spaceport America may spur up to 5,000 new jobs and up to \$1 billion in new revenue in the state. Spaceport America is scheduled to open for business in mid 2010.

A number of developments for Spaceport America have occurred since Landeene assumed the directorship.

In April, UP Aerospace, Inc., the first company to launch a commercial payload at Spaceport America, agreed to make its home for spaceflight operations at the New Mexico facility for the next 10 years. Also in April, Lockheed Martin, one of the world's top aerospace companies, entered into an agreement with the NMSA to conduct operations from Spaceport America.

Spaceport America will also be home for Richard Branson's Virgin Galactic operation. Virgin Galactic will have its world headquarters in New Mexico and will be the anchor tenant for Spaceport America. Virgin Galactic is working with Burt Rutan to produce the WhiteKnightTwo and SpaceShipTwo. The WhiteKnightTwo rolled out of the hangar in Mojave on July 28, 2008 and is expected to be flight testing before the end of the year. These vehicles will carry passengers to suborbital space as well as provide for scientific and military missions.

More information on Spaceport America can be obtained at the company's website, spaceportamerica.com.



Spaceport America Conceptual Drawing URS|Foster+Partners

AE Alums Play Role in Phoenix Lander Mission

Three AE alumni participated in the successful landing of the Mars Phoenix Lander mission that touched down on the Martian northern arctic region on May 25, 2008.

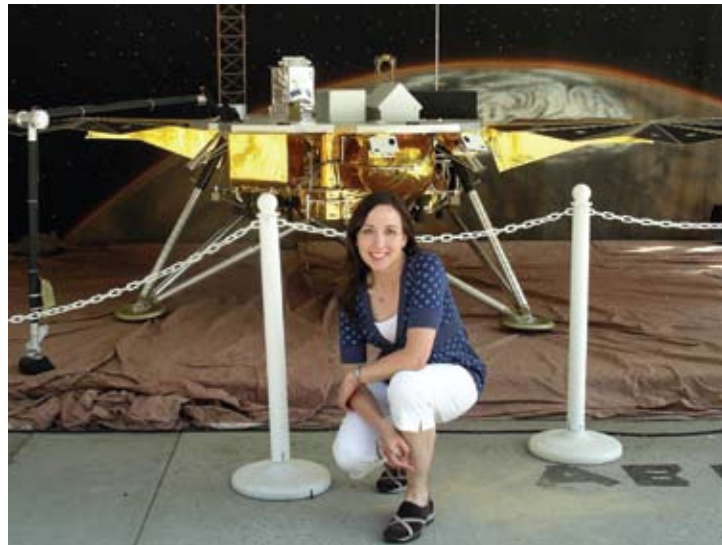
The alumni were Lynn Craig, BS 2000; Cliff Helfrich, BS 1990; and Theodore (Ted) Drain, BS 1995. Said Craig, "Seeing this mission through from its start in the proposal phase through successful surface operations has been an exciting and rewarding experience. It was such a thrill to be one of the cheering engineers in Mission Control and watching the first photos from the surface stream in."

Based at NASA's Jet Propulsion Laboratory in Pasadena, California since 2002, Craig has worked in Mission Design and Navigation on several projects, including serving as a member of the Navigation team for the 2003 Mars Exploration Rovers, Spirit and Opportunity.

For the past 4 years, she worked to determine the launch and arrival trajectory design, cruise navigation, and surface mission geometries for science and communication planning. Her focus has been optimizing the design of Phoenix's Entry Descent and Landing (EDL) communication to each of the three current Mars orbiters that provided near real-time telemetry of Phoenix's descent. Resulting from this EDL communication strategy was the first-ever image taken of a spacecraft's descent to Mars by another Martian orbiting asset. The Mars Reconnaissance Orbiter (MRO) captured Phoenix as it parachuted to the surface.

Craig said Helfrich assisted with Maneuver Design, planning the various propulsive maneuvers to correct the Phoenix trajectory during its cruise to Mars. Drain worked as a software developer who maintained the navigation software responsible for gathering and processing navigation and trajectory information for Phoenix.

Phoenix is a joint project between NASA JPL, Lockheed Martin Astronautics, and the University of Arizona.



Lynn Craig (BS '00) with the Mars Phoenix Lander Full-Size model at NASA Jet Propulsion Laboratory in Pasadena, CA.



MRO orbiter captures image of Mars Phoenix spacecraft as it parachutes through the atmosphere to make a soft landing on the surface of Mars; May 25, 2008.