

AeroGRAM

A newsletter for alumni & friends of the School of Aeronautics & Astronautics

Covering the 2004-2005 academic year



Heddy Kurz (front row, left), Guy Gardner, Michael McCulley, Mark Brown and K.O. Johnson watch the groundbreaking of the Neil Armstrong Hall of Engineering, while Don Williams (in stocking cap) looks on from a row behind. (Purdue News Service photo/David Umberger)

Purdue launching Neil Armstrong Hall for engineering's future

Purdue President Martin Jischke broke ground on Saturday, Oct. 16, 2004 on what will be the largest facility in the College of Engineering and announced it will name the facility after its most famous alumnus, Neil A. Armstrong.

The new building will be located at the southeast corner of the intersection of Northwestern and Stadium Avenues and will be an impressive anchor at the north entrance to the academic campus. "The Neil Armstrong Hall of Engineering will be engineering's crown jewel, worthy to bear the name of the first person to walk on the moon," said Purdue President Martin C. Jischke during Homecoming celebrations.

Jischke also announced that Caterpillar Inc., one of the world's leading manufacturers of construction and mining equipment, diesel and natural gas engines and industrial gas turbines, is giving Purdue \$5 million, a portion of which will complete the private fund raising needed to start construction of the new facility.

The College of Engineering also received generous gifts from an elite group of donors for Armstrong Hall which included Mr. & Mrs. Kenneth O. Johnson and Mrs. Heddy Kurz, whose late husband was a Purdue alumnus. Mr. & Mrs. N.A. Armstrong, Mr. & Mrs. Robert D. Hostetler, Mr. & Mrs. Michael T. Kennedy, Mr. & Mrs. Gordon T. McKane, Mr. John Rich and Mr. & Mrs. Edward G. Dorsey. Gifts were also made from, or in honor of, many of the 20 living astronauts with degrees from Purdue. To recognize their gifts and commitment to Purdue, the propulsion laboratory inside the new facility will be named in their honor.

Purdue University's Board of Trustees awarded Smoot Construction LLC from Indianapolis, a \$43.5 million contract to build and extend utilities to the facility on May 20, 2005. The total cost for building Armstrong Hall – including site development, utilities, design fees, equipment, furnishings and other construction-related items – is expected to be about \$53.2 million. The state is funding \$37.7 million

of the cost for Armstrong Hall, with most of the rest being provided by private gifts. Private funds raised for Armstrong Hall are part of the \$1.3 billion Campaign for Purdue. Ground has already been cleared for the building, and construction will commence in 2005 with completion expected by May 2007.

The building will have 126,000 assignable square feet that will include more than 20,000 square feet dedicated to research labs and more than 60,000 square feet of undergraduate teaching facilities, including discipline-specific design labs. In the classrooms, Armstrong Hall will feature learning spaces that facilitate student teamwork, especially for design work, one of the most important facets of engineering education. In addition to improving undergraduate education, the School of Aeronautics and Astronautics is focusing on strengthening and investing in its core areas, such as aerodynamics, structures and materials, dynamics and control, and propulsion.

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AAE Headlines

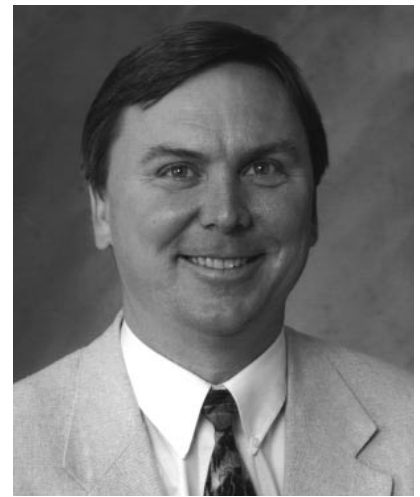
Thanks to your support, construction of Armstrong Hall of Engineering is underway. Those of you visiting campus will see progress or you can visit the webcam at <https://engineering.purdue.edu/ECN/WebCam/cam06/>

The 2004-05 academic year was a great one for AAE faculty who received more than \$5.7 million in external grants and contracts for research representing more than 50% growth over the previous academic year. Kudos for their efforts. There were many faculty accomplishments acknowledged by Purdue and peers and colleagues around the world. A few of these are listed below.

- William Anderson received the AIAA Liquid Propulsion Committee Best Paper Award
- Wayne Chen was named ASME Fellow
- James Garrison was invited to NAE's Frontiers of Engineering Symposium
- Kathleen Howell received the Dirk Brouwer Award from AAS as well as the School's Elmer F. Bruhn Excellence in Teaching Award
- Ivana Hrbud was named to the NRC National Research Council Panel for High-Energy Power and Propulsion and In-Space Transportation
- James Longuski received the AA Potter Best Teacher in Engineering Award
- Tasos Lyrantzis was named University Faculty Scholar
- Mario Rotea became Program Director of NSF's Control Systems Program
- John Sullivan was named Director of the Center for Advanced Manufacturing in Purdue's Discovery Park
- CT Sun was the inaugural recipient of the CT Sun School of Aeronautics and Astronautics Excellence in Research Award
- Terry Weisshaar received the Structures, Structural Dynamics, and Materials Award from AIAA
- Marc Williams received the School's Gustafson Outstanding Teacher Award

Many of these awards listed below are detailed elsewhere in Aerogram. Any error or omission in the above is mine.

Student interest in the School remained strong with an undergraduate



Thomas N. Farris

enrollment in Fall 2004 of 465 and a graduate enrollment of 206, the largest graduate enrollment in the School's history. The students are outstanding as evidenced by Etan Karni who won AIAA's Individual Design Competition and Jim Gregory who won AIAA's Graduate Student Paper Contest. The School's students took first in one of AIAA's most prestigious undergraduate as well as graduate competitions! Also, as I am writing this in July, Kevin Miller is receiving the 2005 Liquid Propulsion Student Award from AIAA.

Highlights of the year included the 6th William E. Boeing Lecture given by Dr. Paul MacCready, Chairman of AeroVironment Inc. The School also celebrated the 6th Outstanding Aerospace Engineers Celebration. These events along with Homecoming and Gala Week are wonderful times for you to return to campus.

We always welcome you back to campus so that we might show you up-close the educational opportunities that your support provides our students. Having you back on campus gives us the chance to say thank you for your support and, more importantly, connects you with our present students so that you too can know why we make educating Purdue Aeronautical and Astronautical Engineers our life's work. We strive to make the Purdue education live up to the standards that you remember so well and remind you that we cannot do so without your support. Thanks again for your part in making times at Purdue so exciting.

Purdue, Rolls-Royce forge agreement to advance state's technology businesses

Purdue University and Rolls-Royce Corporation signed an agreement on April 7, 2005 to cooperate with state businesses in developing basic and applied manufacturing processes and technologies. The Indiana Advanced Aerospace Manufacturing Alliance Voluntary Collaboration agreement between Rolls-Royce and Purdue's Center for Advanced Manufacturing establishes an initiative to work with existing and "aerospace-capable" Indiana manufacturing and repair companies.

John Sullivan, director of Purdue's Center for Advanced Manufacturing and a professor of aeronautical and astronautical engineering, says "The purpose of the alliance is to put a structure in place to get all the parties together to pursue resources and technologies that allow the

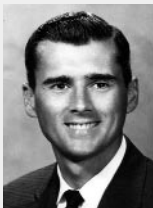
state to build upon that base." There is no shortage of such opportunities in Indiana. In addition of being more than 100 businesses in the state currently engaged in aerospace manufacturing, the state also boasts institutions such as Crane Division Naval Surface Warfare Center, and Grissom Air Force Base. When combined with a major aerospace manufacturer, such as Rolls-Royce, and Purdue's world-class researchers, there is a solid base upon which to grow the state's aerospace industry.

"We're initially targeting 10 to 12 major businesses in the state," said Steve Dwyer, Rolls-Royce's chief operating officer. "This will include, as a priority, women and minority-owned businesses. We would be pleased to do more business with capable and competitive com-

panies in Indiana as part of our global supply base. "This would be a boost to this business while also helping the state's economy." Al Novick, Rolls-Royce's vice president of marketing intelligence, added, "We've encountered a high level of interest and excitement for this initiative that will translate to a win-win-win for Purdue, Rolls-Royce and manufacturers in Indiana."

Purdue has been building public-private partnerships with the state's manufacturers in advanced manufacturing summits on campus in the three years leading up to the formation of the Center for Advanced Manufacturing in 2004. Sullivan said the alliance is interested in hearing from Indiana companies that want to join the alliance.

Moon Rock



Roger Chaffee

A small part of the moon will also come to Purdue. Martha Chaffee, whose husband Roger was one of two Purdue alumni to die during a simulated test for the Apollo I mission, will give a moon rock to be housed in Neil Armstrong Hall. Martha Chaffee is acquiring the moon rock through NASA's Ambassadors of Exploration program. The NASA program allows each astronaut, or his survivor – from NASA's Gemini, Apollo and Mercury programs – the right to donate to the educational institution of his or her choice a piece of the 842 pounds of moon rocks and soil collected during six lunar missions.

"Roger and I met at Purdue, so it seemed like the natural place for this part of him to be," said Martha Chaffee, who was a student in Purdue's radio and television program.

Roger Chaffee earned his bachelor's degree in aeronautical engineering from Purdue in 1957. "With our ties to the university and Purdue's strong connections to NASA and space exploration, there was no question in my mind," she said. The sample will likely be displayed in the atrium area of the Neil Armstrong Building, said Linda P.B. Katehi, John A. Edwardson Dean of Engineering.

Caterpillar Inc.

In honor of the company's gift, Purdue is naming a key feature of the building after Caterpillar, Inc. The Caterpillar Inc. Learning Modules in the Neil Armstrong Hall will be the first three of five modules to be built and will support research and hands-on learning experiences, and classrooms will be located adjacent to labs and discussion areas in order to facilitate small-group work. These team-learning modules will give students a more integrated educational experience, as well as easier access to the tools needed for classroom and lab assignments.

Although this is Caterpillar's largest gift to the university, the company has a long history of giving to Purdue. Many of its earlier gifts have helped fund activities in the College of Engineering. Caterpillar has been particularly supportive of Purdue's efforts aimed at increased student diversity. Company representatives also serve on several Purdue advisory committees. Among its more than 70,000 employees, Caterpillar employs more than 500 Purdue alumni, of whom approximately 45 percent are engineering graduates. The company, in addition to its other locations around the world, operates its Large Engine Center in Lafayette, employing about 1,400 people.



Purdue President Martin C. Jischke uses a Caterpillar back-hoe to break ground for the Neil Armstrong Hall of Engineering at a ceremony Oct. 16. (Purdue News Service photo/David Umberger)

Distinguished Engineering Alumni Convocation 2005

Dr. Paul M. Bevilaqua

For his pioneering contributions to aerospace design and to the defense of our nation, and for his service to Purdue University, The College of Engineering is proud to present the Distinguished Engineering Alumni to Paul M. Bevilaqua, of Santa Clarita, Calif., chief engineer of advanced development projects for Lockheed Martin Skunk Works



Dr. Paul Bevilaqua receives his award from Dean Linda Katehi



L-R Tasos Lyrintzis; Paul Bevilaqua; Thomas Farris and Marc Williams

Bevilaqua studied at Notre Dame as an undergraduate before enrolling in Purdue's School of Aeronautics and Astronautics. As a graduate student, Bevilaqua earned masters and doctoral degrees in aeronautics and astronautics from Purdue in 1968 and 1973, respectively and then served as a captain in the U.S. Air Force and Deputy Director of the Energy Conversion Laboratory at Wright-Patterson Air Force Base in Ohio. The award is given each year to Purdue engineering graduates for their professional achievements and related accomplishments and was presented on February 22, 2005 in a daylong series of programs and events.

"When I was at Purdue, we used punch cards and drawing tables, and airplanes looked like 707s—all of that's obsolete now," says Paul Bevilaqua. "Purdue taught me that technology changes, but science lasts. As an undergraduate, I learned how the pieces are moved, and at Purdue I learned how to play chess."

The Campaign for Purdue is a comprehensive fund-raising effort by Purdue University. Our goal is to raise \$1.5 billion by 2007 in support of our students, faculty, programs, and facilities. The result will be the realization of the vision of the entire Purdue community, as expressed in the University's strategic plan: To be a preeminent university, advancing quality in all areas while leading the world in the basic and applied sciences and engineering and improving society at home and abroad. This historic effort will build the foundation of Purdue's successes in this century and beyond.

"With nearly three years remaining in the campaign, we have already raised \$1,007,323,292 – more than 75 percent of our original \$1.3 billion goal," Purdue President Martin C. Jischke told alumni and friends at the annual President's Council dinner in the Purdue Memorial Union in October 2004, "Your response has been amazing, and I am very, very gratified that you believe in this great university and that you feel it can be even better." The announcement capped a 10-day celebration that focuses on ways Purdue is improving education and helping the state of Indiana as part of its strategic plan and fund-raising campaign.

The 
Campaign
for PURDUE

2005 Honorary Degree

James D. Raisbeck

DOCTOR OF ENGINEERING



James D. Raisbeck, CEO of Raisbeck Engineering Inc. and Raisbeck Commercial Air Group Inc. was awarded an honorary doctor of engineering degree on Sunday May 15, 2005. James Raisbeck has distinguished himself in aviation by combining a keen engineering ingenuity with a spirit of entrepreneurship that is unique in the modern-day aerospace industry. He is the founder and chief executive officer of Raisbeck Engineering Inc. and Raisbeck Commercial Air Group Inc., both in Seattle. The two companies focus on integrating advanced technology into existing aircraft in ways that increase their productivity and profitability.

Born and raised in the Milwaukee area, Raisbeck earned his Bachelor of Science degree in aeronautical and aerospace engineering from Purdue in 1961 after spending parts of three years (1955-58) as a flight engineer for the U.S. Air Force. Soon after graduation, he went to work for the Boeing Airplane Company in Seattle as a research aerodynamicist, designing flaps. In 1969, Raisbeck left Boeing when he was offered a job as president, chairman and chief engineer for Robertson Aircraft Corporation, where he teamed up with other former Boeing engineers to design single- and twin-engine Pipers and Cessnas.

Four years later, he founded his first company, Raisbeck Engineering, Inc., which has shaped several business turbine aircraft designs, including designing and producing the first supercritical wings to be used in general and commercial aviation. Raisbeck Engineering has equipped more than 3,000 business aircraft currently in service. In 1996, he started Raisbeck Commercial Air Group, which specializes in designing noise-reduction systems for commercial aircraft needing to meet stiffer federal regulations. Shortly after Sept. 11, 2001, the company began producing armored cockpit security systems that could be installed in existing commercial airliners.

Raisbeck serves on the boards of the Seattle Opera, Pacific Northwest Ballet, the Arts Fund, and the Museum of Flight, as well as on several corporate boards. His philanthropy includes multimillion-dollar grants to Purdue University, The Fred Hutchinson Cancer Research Institute, Cornish College of the Arts and the United Way, as well as to the ballet and opera. He has been honored many times for his professional accomplishments and philanthropy.



Prof. Alten "Skip" Grandt was named as The Raisbeck Engineering Distinguished Professorship for Engineering and Technology Integration in 2000.

L-R Tom Farris, James Raisbeck and Skip Grandt

PURDUE TO REFORM ENGINEERING EDUCATION

Purdue will be the first university to offer graduate degrees in engineering education after receiving approval from the Indiana Commission for Higher Education. The advanced degrees include a master's of science, a master's of science in engineering education and a doctorate in this field. Enrollment of 10 full-time graduate engineering education students is expected fall 2005 with anticipated enrollment of more than 40 in the program within five years.

The Engineering Dean's Council, Corporate Roundtable of the American Society for Engineering Education, Board on Engineering Education of the National Research Council and the National Academy of Engineering has called for national engineering education reform. These reforms include developing more broadly educated engineers who can assume leadership roles in technology development and encouraging the engineering profession to take steps to ensure a well-prepared, motivated and diverse K-12 pipeline of future engineering students.

Future plans for the Purdue Department of Engineering Education, in collaboration with the College of Engineering and the College of Education, are to educate and certify high school teachers with an emphasis in engineering by 2007.

PURDUE

UNIVERSITY

The William E. Boeing DISTINGUISHED LECTURE 2005



Paul B. MacCready, Chairman AeroVironment Inc. delivered the sixth William E. Boeing Distinguished Lecture on November 11, 2004 entitled **Powering Devices with Minimum Renewable Energy.**

The lecture, sponsored by the School of Aeronautics & Astronautics was held in Stewart Center's Fowler Hall where MacCready shared his thoughts on how power generated by combustion engines, fuel cells, battery power, and hybrid combinations can be minimized by paying attention to fundamentals.

With B.S. and M.S. degrees in physics (Yale '47 and Caltech '48) and a Ph.D. in aeronautics (Caltech '52), Dr. Paul MacCready became a meteorologist, an inventor, and a world champion glider

pilot. He is also an explorer of new horizons in conserving energy and the environment and in teaching thinking skills. In 1977, his Gossamer Condor won the \$95,000 award offered by British industrialist Henry Kremer for the first sustained, controlled human-powered flight.

Two years later, its successor, the Gossamer Albatross, won aviation's largest prize, the \$213,000 Kremer Award for a human-powered flight from England to France. Subsequently, he has led teams that have created many additional pioneering vehicles. The Gossamer Condor now hangs in the Smithsonian Institution's National Air and Space Museum in Washington, D.C., along with five other vehicles developed by MacCready's teams. His activities have been featured internationally in museum exhibits, TV documentaries, books, and magazines.

He lectures widely for industry and educational institutions, emphasizing creativity. Dr. MacCready is a member of the National Academy of Engineering, the American Academy of Arts and Sciences, and the American Philosophical Society, and has Fellow status in the American Institute of Aeronautics and Astronautics and the American Meteorological Society.

Dr. MacCready lives in Pasadena, California, with his wife Judy. He founded AeroVironment Inc., now a rapidly growing company with a specialty in power electronic systems, providing services and products in the areas of environment, alternative energy, and efficient vehicles for land, sea, and air. He is on the Board of Directors of the Lindbergh Foundation and the Society for Amateur Scientists.



Purdue University ranked among the top 25 public universities nationally, and its undergraduate engineering programs tied with Carnegie Mellon University for eighth nationally according to **U.S. News & Report released Aug. 20, 2004**. Purdue's College of Engineering is up one place from last year. **The School of Aeronautics & Astronautics was ranked 4th overall.** In a separate survey, employers consistently rate Purdue engineering among the top 10 programs nationwide. Industry officials consider Purdue engineering alumni among the best prepared and most productive engineers entering the workforce.

A U.S. News & World Report survey released April 1, 2005 also confirmed Purdue University's graduate engineering programs rank among the top programs in the country. **The survey ranks the College of Engineering No. 10** overall in the country with **the School of Aeronautics and Astronautics standing at 6th in the nation.**

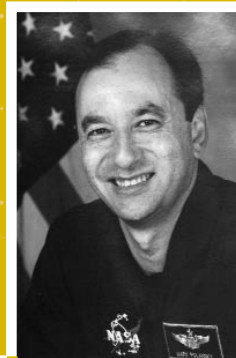
Internationally as well, Purdue University's reputation has grown in a survey released on Nov 5, 2004, *The Times of London* ranking universities from all over the world ranked Purdue University 59th overall, 25th in North America, 22nd among U.S. universities and ninth among American public universities.

Purdue's Engineering Tops Nationally and Internationally

The Aeronautical and Astronautical Engineering Student Advisory Council (AAESAC)



The Aeronautical and Astronautical Engineering Student Advisory Council (AAESAC) was founded in 1998 with the purpose of increasing interaction between engineering students at all levels of education and the administration of the School of Aeronautics & Astronautics. AAESAC serves to strengthen the partnership between students, faculty and administrators and to continue building Purdue's engineering excellence in education, research, and service. Students from AAESAC have helped out a number of times throughout the year with Purdue Family Day and Purdue Scholars Day they also host the ever popular Aero Social Night (ASN).

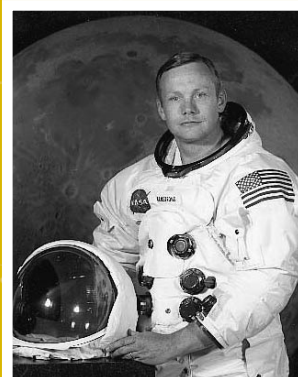


Return to Flight - Purdue alumnus goes into space to lead mission

Mark L. Polansky, who graduated with a Master of Science degree in aeronautics and astronautics from Purdue in 1978, will command mission STS-116, due to launch in 2006, to the International Space Station to attach extra equipment.

Polansky flew as a pilot during a mission in 2001 for a station assembly mission. The shuttle remained attached to the station for several days while three spacewalks were conducted to complete the assembly of a U.S. laboratory module.

Neil A. Armstrong



Astronauts, Purdue alumni add their contributions to new Slide-rule exhibit

Astronauts Neil Armstrong and Jerry Ross, along with about 200 other Purdue University alumni, have added their slide rules to a new exhibit at their alma mater that testifies to the past mathematical prowess of these computational devices. The permanent display, on the first floor of the university's Potter Engineering Center, houses the pre-digital analytical marvels, some of which were made in the 19th century and range in length from a few inches to seven feet. During a period of about 400 years, anything anybody built that was of any magnitude would have required a slide rule. Then, in the early 1970s Hewlett Packard came out with the first commercial calculator, the HP-35, signaling an end to the slide rule's dominance in scientific computing.

The new glass-enclosed wall exhibit includes slide rules from four astronauts who are Purdue alumni: Armstrong, the first man to walk on the moon; Ross, who has logged more space-walking hours than any other astronaut; Richard Covey and Roy Bridges. Eugene Cernan, the last man to walk on the moon.



FALL 2004 *space day*



Astronaut Col. Guy S. Gardner

Purdue University alumnus and astronaut Col. Guy S. Gardner shared his excitement of space flight with over 320 enthusiastic students from grades 3-8. The 9th annual Purdue Fall Space Day took place on the West Lafayette campus on Saturday November 6, 2004. Organized by the Students for the Exploration and Development of Space (Purdue SEDS) student director George Pollock led a team of more than 120 Purdue student volunteers to the most successful day ever.

SEDS Spring Space Forum

Guy Gardner was back on campus on April 21, 2005 as a guest speaker at the Spring Space Forum hosted by the Purdue Chapter of the Students for the Exploration and Development of Space (Purdue SEDS) with School of Aeronautics & Astronautics faculty member Dr. Dan DeLaurentis.



Purdue & elementary students with the water rockets

The elementary and middle school students had the opportunity to learn about aeronautical and astronautical engineering by taking part in hands-on activities dealing with rockets, nanorovers, and a Moon launch. In addition to spending the entire day with Purdue Fall Space Day, Col. Gardner also gave a public presentation in the Stewart Center where it was standing room only for his well received talk.

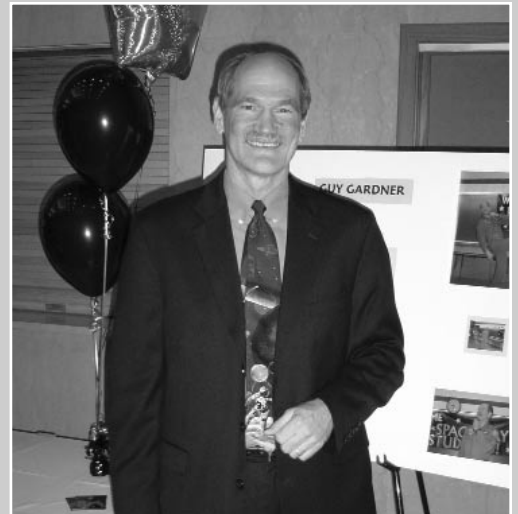
Guy Gardner earned a master's degree in aeronautical and astronautical engineering from Purdue in 1970 and is the Director of Super Project Development at Purdue University. Guy began his career as an Air Force Fighter pilot and test pilot. As a NASA Astronaut, he worked in many areas of space shuttle and space station development and support. His two flights in space were as pilot of Space Shuttle missions STS-27, launching a Department of Defense payload, and STS-35, carrying the ASTRO-1 astronomy laboratory.



Linda & Guy Gardner were enthusiastic role models

The day was sponsored by: the Indiana Space Grant Consortium; the School of Aeronautics & Astronautics; Great Lakes Chemical Corp; Students for the Development and Exploration of Space and the Purdue Engineering Student Council (PESC)

The 10th annual Purdue Fall Space Day will take place on Saturday October 22, 2005 with **Mark N. Brown** as the guest astronaut.



NEWS ABOUT *you*

Class Notes

Robert L. Swain BSAAE '57, MS '59.

Former Associate Head of the School of Aeronautics & Astronautics and faculty member 1967-1978 retired 11 years ago as Professor and Associate Dean emeritus, College of Engineering, Architecture, and Technology, Oklahoma State University. Dr. Swain was inducted into the ROTC Hall of Fame on April 16, 2005. (see article on page 22)

Dwight Abbott BSAAE '58, MSIA '65

has been elected Mayor, Palos Verdes Estates, CA. He previously served as Planning Commissioner and Financial Advisory Committee. Abbott retired from The Aerospace Corporation, Los Angeles, in 2000 as General Manager, Systems Engineering. He previously served on the Purdue Dean of Engineering Visiting Committee and on the Aeronautics and Space Engineering Board of the National Academy of Science.

Jim Marrone, BSESE '61, has retired in 1999 from Abbott Laboratories after 32 years as Utilities Operations Manager and Utilities Project Manager.

John B. Hayhurst BSAAE '69

Bellevue, WA has retired from The Boeing Co. as corporate senior vice president and president of air traffic management business.

Albert V. Suppinger BSAAE '70

Chattanooga, TN. is a senior quality engineer for Harper-Wyman.

Marc A. Schuldt BSAAE '73

Woodinville, WA is president of SBW Consulting Inc. Bellevue, WA.

Timothy J. Greene BSAAE '75, MS

'77, PhD '80 Tuscaloosa, AL. is dean of the College of Engineering and Applied Sciences at Western Michigan University at Kalamazoo, MI

Michael Abreu BSAAE '76

Fairfax, VA. Is director of resources and business management for NASA in Washington DC.

James W. Livingston BSAAE '78

Dayton, OH. Is a principal engineer for General Dynamics on Wright-Patterson AFB, OH.

John T. Batina BSAAE '79, MS '80, PhD '83

Williamsburg, VA, retired as a senior research scientist from NASA Langley Research Center after 21 years of service.

Gregory C. Guest BSAAE '83

Lancaster, CA. works for the Defense Contract Management Agency in Palmdale CA

Stephen P. Arnone, BSAE '80

Indianapolis, IN. is a Senior Quality Control Engineer at Eli Lilly and Company in Indianapolis, IN.

John Peeples, BSAAE' 95

is a Flight Test Engineer with Boeing on the F/A-18 flight test program at NAS Patuxent River since July 2003. He was previously an FTE with Boeing in Seattle and Cessna Aircraft Co. in Wichita. John is a member of Society of Flight Test Engineers and is retiring after 36 years as assistant band director.

John A. Moretti BSAAE '97

West Dundee, IL is a systems engineer for Northrop Grumman Corp in Rolling Meadows, IL

Jeremy P. Davis BSAAE '01

Orlando, FL. is an engineer for United Space Alliance in Cape Canaveral, FL

Greg A. Bischoff BSAAE '02

Cassopolis, MI is a naval flight officer and was presented with the Wings of Gold while serving with Training Squadron 86 in Pensacola, FL

Mellisa D. Glaser BSAAE '02

is a test conductor for all weapon separation testing on the Super Hornet at NAVAIR.

Joseph Ghesquiere BSAAE '03

was awarded with the Lockheed Martin AeroStar Award in December 2004. He was one of two designers who conceptualized, designed, scheduled, supervised, and helped build their project. The annual Aero Star Awards are a tradition at Lockheed Martin Aeronautics Company. The awards honor exemplary individuals and teams who have contributed to the company's success.

Melanie J. Jura BSAAE '03

Beavercreek, OH is an aerospace engineer for Nation Air and Space Intelligence Center in Dayton, OH.

Ted Light BSAAE '03 has been accepted into "Teach For America" for the second time and has been teaching high school math in rural South Dakota.

Eric Blattner BSAAE '04

has been selected by the Air Force selection board as USAF commissioned officer and started training January 2005.

Lou Huebsch BSAAE '04

is a Liaison Engineer and is working with the Boeing Commercial Aircraft group in Everett, WA.

Tied the Knot

Congratulations to the following happy couples

James D. Kelley BSAAE '86 and Rebecca A. Brittingham July 30, 2004

Kelly Kunack BSAAE '90 MSAAE '92 to Dan Stewart in Tacoma, Washington July 11, 2004

Frederick Shaffer BSAAE '90 and Ethel Go Tio August 2, 2004

Tom Ryan BSAAE '95 and Jennifer Brown September 13, 2003

Angela Bowes BSAAE '98 and Brian Getzewich October 23, 2004



ride with pride!

Allison Lambeth BSAAE '02
and Matthew Parlee May 22, 2004

Allison Bahnsen BSAAE '04
and Jeremy Bolinger June 26 2004

Robert E. Manning BSAAE '04
and Jeanette E. Roell June 26, 2004

Mihailo D. Rutovic BSAAE '04 and
Shalane K. Stebbins June 5, 2004

Family Additions

Congratulations to all new arrivals

Stephen P. Arnone BSAE '90
and Kristin (Boyd) Arnone, a son Alec
Joseph April 15, 2004, big sister Megan
turned 4 years old in October 2004.

Jonas Q. Burgett BSAAE '90 and
Brooke Miller a daughter May 1, 2004

Anne Gick BSAAE' 91; MS'94 and
Jon Gick a daughter Margaret Ena
Gick, April 20, 2005. A sister for Rose
Mary aged 3 and David Anthony aged
18 months.

Elizabeth E. Sack BSAAE '91, MS '94
and Stephen Blok a son April 21, 2004

**Christine E. Haven BSAAE '92,
MS '95** and Robert A. Scott a son
November 7, 2003

Kristopher k. Kegerreis BSAAE '92
and Sharon Martin a daughter June 11,
2004

Michael A. Taylor BSAAE '94
and Amy a son April 30, 2004

Daniel Bodony BSAAE '97, MS '99
and Deborah a son, Nicholas on April
27, 2005

Parul Agrawal Ph.D. 2001
a son Milind on August 7, 2004



MADELINE GOULARD, 75, of Ojo Caliente died
Monday March 14, 2005

Madeline Goulard was born to Miloye and Marusha Smilyanich, on November 7, 1929. She was the first female to earn her Ph.D. in aeronautical engineering from Purdue University in 1956 and her doctorate from the National Chiropractic College in 1977. Goulard was on the School of Aeronautics & Astronautics faculty at Purdue University from 1958 to 1974 and worked as a chiropractor and applied kinesiology from 1978 to 2005. She also wrote four books and was an avid outdoors person who enjoyed hiking, windsurfing, snow skiing and the simple beauties of nature. She

had the same joy in treating her patients, always interested in them and their lives. She is survived by her son, Frank Goulard of Lake Oswego, Ore.; sister, Anne Vuckovic of Ojai, Calif.; and three grandchildren.

In Memoriam

*It is with great sadness that we report
the death of the following alumni:*

**Sherwood H. Brown BSAAE '43, MS
'47** Manhattan Beach CA Feb 11, 2004

Robert H. Essig BSAAE '43,
September 29, 2004 Berea, OH.

Mary L. Arnold BSAAE '45 Las Vegas
NV. September 9, 2004

H Carl Thorman BSAAE '46 Altadena
CA Jan 11, 2004

Richard L. Collister Sr BSAAE '48
Lancaster, PA November 24, 2004

Fred J. Hook BSAAE '48 Rockville MD
November 8, 2003

Charles E. Scace BSAAE '48 Houston
TX. September 7, 2004

William F. Seeger BSAAE '48
Lafayette, IN. December 20, 2004

**Victor Bruce Stockdale BSAAE '49,
MS '63** San Marcos CA October 18,
2004

Robert J. Mason BSAAE '49 Ashland
OR Jan 6, 2004

Raymond E. Choquette BSAAE '51
Manchester CT November 9, 2004

Paul C. Stainback BSAAE '51
Gloucester Point VA November 2, 2004

Frederick A Weigand BSAAE '51
San Antonio TX August 24 2003

Paul W. Athanasulis BSAAE '52
Dunedin FL June 17, 2003

Donald C. Howley BSAAE '53
Menasha WI November 18, 2004

Robert N. Brown BSAAE '54
Charlotte NC March 19, 2004

Charles W. Scales BSAAE '55
Huntingburg, IN July 24, 2004

Bruce E. Clingan BSAAE '56 Bellevue
WA July 16 2004

Tom N. Williams BSAAE '56 Cicero
IN September 21 2004

Bruce L. Myers BSAAE '57 Miami
May 18, 2004

Richard E. Byam BSAAE '57 Omaha
NE October 24 2003

Theodore L. Commons BSAAE '57
Fishers IN October 31

Ralph R. Conley Jr. BSAAE '65
Florissant MO December 31, 2004

Through the Purdue "Ride with Pride" program, you can show your support of Purdue while also helping to support the University's General Scholarship Fund. The license plate program, which began in 1991, has raised more than \$3,000,000 for scholarships.

To participate, you purchase a special Purdue plate to replace your standard state license plate. In Indiana, the plate is legal for passenger cars, recreational vehicles, and trucks that weigh less than 11,000 pounds.

**For further details contact:
Purdue License Plate
Development Services
Purdue University
101 N. Grant St.
West Lafayette, IN 47906-3574.**

Kenneth O. Johnson BSAAE '50

Kenneth O. (K.O.) Johnson passed away on Thursday July 28, 2005 at the age of 82 years. K.O. graduated from Purdue in 1950 (BS AAE).

K.O. Johnson's career in aeronautics began before he came to Purdue. After graduating from high school in 1941, he learned to rivet aircraft assemblies as he worked to support the war effort. In 1943, he joined the Air Force as a second lieutenant and flew ground support air missions in Germany.

Following the war, Johnson enrolled in Purdue to study structural and aerodynamic design. In 1950, he began working for General Motors, where he analyzed and designed gas turbines and rocket engines, contributing significantly to the design and development of the Minuteman rocket engine.



L-R Dean Linda P.B. Katehi; Purdue President Martin C. Jischke; K.O Johnson; Sally Mason and Neil A. Armstrong at the 2003 Purdue Homecoming celebrations.

Johnson worked for General Electric from 1966 until his retirement in 1986. While at GE's Large Gas Turbine Design Operation, in Cincinnati, he helped develop, introduce and patent the unducted fan engine, a breakthrough that led to reduced fuel consumption for commercial aircraft. He previously performed research and development for Belcan Engineering in Cincinnati.

He was an associate fellow for the American Institute of Aeronautics and Astronautics, to which he had belonged

for 52 years. At the 2003 Purdue Homecoming celebrations, in the presence of Purdue alumnus Neil A. Armstrong, KO received the

Distinguished Pinnacle Award from Purdue president Martin C. Jischke. In 2000, he received the Outstanding Aerospace Engineers Award from Purdue. Johnson was inducted into the General Electric Aircraft Engineering Hall of Fame in 1987 and was awarded a NASA Certificate of Recognition.

K.O.'s lead gift of \$1 million to the Armstrong Hall of Engineering for the K.O. & Betty Johnson Aeronautics & Astronautics suite will leave a lasting legacy to K.O. and his career.

Spring 2005 saw the introduction of our new e-newsletter, Aeroliner. The name is taken from a weekly student paper that was written by the School's students during the 1950s. Aeroliner is one of the School's efforts to keep you updated on its activities and accomplishments. Two issues have now been sent out to good reviews, if you haven't received it yet and wish to, please send us your e-mail address at: aae-alumni@ecn.purdue.edu

Aeroliner
e-newsletter



PURDUE HONORS BOEING EXECUTIVE FOR career, support of university

Purdue alumnus **David O. Swain BSAAE '64**, executive vice president of The Boeing Co. and chief

operating officer of Boeing's Integrated Defense Systems, has been awarded one of Purdue's highest honors the Order of the Griffin.

Presented by President Martin C. Jischke during a President's Council event on Sept. 11 prior to the Purdue-Ball State football game, the Order of the Griffin award is given to individuals for outstanding service to Purdue. Swain is a native Hoosier, born in Lebanon, Ind.

He resides in St. Louis with his wife, Linda.

In 2003 Boeing gave Purdue a four-year, \$1 million grant focused on providing women and minority engineering and business students with opportunities for continuing their education through a variety of academic scholarships, programs, organizations and projects that support student development.

Prior to his current position, Swain served as Boeing's executive vice president and chief technology officer within the office of the chairman. Appointed to the office of the chairman in March 2002, Swain led the effort to establish and implement a strategic technology vision. He also provided strategic guidance to Boeing's emerging new businesses, Connexion by Boeing and

Air Traffic Management; in addition to overseeing Boeing's key technology organizations – Boeing Phantom Works, Boeing Ventures, the Intellectual Property Business and External Technical Affiliations.

Purdue honored Swain as a Distinguished Engineering Alumnus in 1993 and was awarded the Outstanding Aerospace Engineer Award in 1999. In addition to his awards from Purdue, Swain is a fellow of the American Institute of Aeronautics and Astronautics, fellow of the Royal Aeronautical Society and a member of the Society of Automotive Engineers. He also serves on the board of trustees for the St. Louis Science Center.



Old Masters Greg Harbaugh

The Old Masters Program was created in 1950, and since that time it has connected Purdue students with outstanding men and women in a vast spectrum of fields. In sharing their dreams, goals and life experiences, Old Masters have made profound and indelible contribution, inspiring tomorrow's leaders to explore the possibilities that the future brings.

Greg Harbaugh BSAAE '78 was invited to take part in the 2004 Old Masters program in early November for three days of informal interaction. He is a veteran of four space flights, logging a total of 818 hours in space. While at Purdue, Harbaugh was directing co-chair for the Old Masters central committee, president of Sigma Chi fraternity, and a member of several other honorary organizations. Since retiring from NASA in 2001, he has served as Vice President for Sun 'n Fun Fly-In, Inc., a non-profit organization that uses aviation as a means to inspire youth to greater achievement and self-reliance.

During their visit Old Masters visit classrooms and residence halls and attend dinners to meet with Purdue students. The Dean of Students sponsors the event and the student-run Old Masters Central Committee arranges the program details.



Johnson Space Center appoints Purdue alumni

Michael Moses MSAAE '95 was named in April 2005 as one of NASA's nine new flight directors. It is the second largest such class ever selected, and brings to 30 the number of active Space Shuttle and International Space Station flight directors. The selection process began in August 2004.

Since Christopher Kraft became the first flight director more than 40 years ago, only 58 men and women have had the privilege to guide U.S. human space flights. Leading a team of flight controllers, support personnel and engineering experts, a flight director has the overall responsibility to manage and carry out Space Shuttle flights and ISS expeditions.

Mike was born in Fulda, Germany, but grew up in Rockwood, Pa. He earned a bachelor of science degree in physics from Purdue University in 1989, a master's in space sciences from Florida Institute of Technology in 1991, and a master's in aerospace engineering from Purdue in 1995. Moses began working at JSC in 1995 as a Rockwell Space Operations Co. employee, and transitioned to United Space Alliance as a flight controller in Mission Operations' Systems Division. He began working for NASA in 1998 as an ascent/entry Propulsion Officer, and was the Propulsion Systems Group lead from 2001 to 2003. Moses transferred to the Shuttle Electrical Systems Group in 2003, and served as group lead until this new assignment. Mike's wife Beth (Stubbings) Moses is also an AAE alum and earned her bachelors' degree in 1992, her masters' in 1994 and she is working towards her PhD. Along with their daughter Sarah, they are both avid alums who meet with our vomit-comet student teams in Houston whenever they can.

PURDUE PARENTS Purdue Proud.

It's been said the best things parents can provide for the children they dearly love are roots and wings. As students, Purdue is the place where children will stretch their wings and learn to soar toward their dreams.

The Parents Campaign is much more than just a critical component of the University's strategic plan and comprehensive campaign. The campaign goes straight to the very heart of Purdue's mission. As Purdue President Dr. Martin C. Jischke has said so many times: Students—their hopes, their dreams, their aspirations, and their opportunities to improve their lives and others' lives—are the inspiration for everything the University is working to accomplish.

The goal of the Parents Campaign for Purdue is to enhance the involvement and support by all parents of current students in The Campaign for Purdue. The goal is to raise \$10 million in gifts and pledges by June 30, 2007. Parents help and support is essential.



Industrial Advisory Council 2004-2005

*Spring 2005 -
IAC members lunch
with AAE students
and faculty*



The Industrial Advisory Council serves an important role in the School of Aeronautics & Astronautics. The success of our programs depends on strong support from Industry and the Industrial Advisory Council serves as a link between industry and the university. The IAC meet twice a year in the fall and spring and review a large variety of topics related to our current operations and future goals. The fall meeting was held November 7, 2004 and the spring one on April 6, 2005.

The current members of the IAC are listed below. In spring 2005 **Hank Queen** stepped down from his role with the IAC and we would like to take this opportunity of thanking him for all his help and time he has taken with the school. We welcome **Craig A. Saddler** to the IAC and look forward to a fruitful partnership.

Dr. William H. Ailor III (PhD 1974)
Principal Director
Space Hazards and Operations Support Directorate
The Aerospace Corporation
Ctr. Orbital & Reentry Debris Studies

Mr. Frank H. Bauer (BS 1979, MS 1980)
Chief Engineer, MESA
NASA
NASA Goddard Space Flight Center

Mr. Bradley Duane Belcher (BS 1982)
(IAP Member)
Lead Experimental Engineer
Joint Strike Fighter F136 Engine
Rolls-Royce Corporation

Dr. Paul M. Bevilaqua (MS 1968; PhD 1973)
Chief Scientist
Lockheed Corporation
Lockheed Martin Skunk Works

Ms. Nancy Carpenter
(IAP Member)
Program Manager
Technology Programs, Science & Engineering
ATK Thiokol Propulsion

Ms. Andrea M. Chavez (BS 1988)
Engineering Manager, System Integration & Text
Engineering/Technology Products
Ball Aerospace & Technologies Corp.

Mr. Daniel F. Devitt (BS 1975)
Director - Engineering
Vought Aircraft Industries, Inc.

Mr. Joseph J. Gernand (BS 1980)
(IAP Member)
Boeing - NASA Systems
Space Shuttle Program

Dr. William C. Kessler (BS 1964, MS 1965)
Vice President Enterprise Productivity
Lockheed Martin Aeronautics Company

Dr. Andrew M. King (MSME 1984, PHD 1988)
Engineering Director
Boeing Satellite Systems

Mrs. Mary Kriebel (BS 1985)
Propulsion System Manager
Northrop Grumman

Dr. Donald L. Lamberson (BS CHE 1953)
Major General, USAF (Ret.)
Technical Advisor and Consultant

Mr. David K. McGrath (BS 1983, MS 1984)
Chief Technical Advisor
ATK Tactical Systems

Mr. G. Thomas McKane Jr. (BS 1966)
President/CEO
A.M. Castle & Co.

Mr. Craig A. Saddler (BSE 1981)
Vice President Management, 787 Dreamliner Program
Boeing Commercial Airplane Group

Mr. Charles Robert Saff (BS 1971)
Boeing Technical Fellow
Boeing Company

Mr. Randal E. Secor (BS 1976)
Naval UCAV Program Manager
Northrop Grumman Corp.

Dr. Robert L. Strickler (BS 1960, MS 1962, PHD ME 1968)
(IAP Member)
President
Sangamon LLC

Dr. John H. McMasters Receives 2004 SAE/AIAA William Littlewood Memorial Lecture Award



Dr. John H. McMasters Ph.D.'75 a Program Manager for the Ed Wells Initiative at the Boeing Company in Seattle, WA. was selected as the recipient of the 2004 Society of Automotive Engineers (SAE)/ American Institute of Aeronautics and Astronautics (AIAA) William Littlewood Memorial Lecture Award. He was presented with the award on January 11, 2005 at the 43rd. AIAA Aerospace Sciences Meeting and Exhibit in Reno, Nevada.

This award, established in 1971, recognizes an individual who has made significant contributions to the field of air transport engineering. The award perpetuates the memory of William Littlewood, the only person ever to serve as president of both SAE (1954) and the AIAA. He was renowned for his contributions to the design of, and operational requirements for, civil transport aircraft.

Dr. McMasters joined Boeing Commercial Airplanes in 1976 as a research aerodynamicist and is now a staff member of the Ed Wells Initiative, a joint program between Boeing and the Society of Professional Engineering Employees in Aerospace charged with enhancing the excellence of the SPEEA represented Boeing technical workforce. In addition to working at Boeing, Dr. McMasters also pursues his strong

interest in education by applying his engineering expertise as an Affiliate Professor at the Department of Aeronautics and Astronautics at the University of Washington. Throughout his career, he has authored more than 100 technical papers and publications on low-speed/high-lift aerodynamics, airplane design, biomechanics, paleontology and engineering education.

An Associate Fellow of the AIAA, he has twice served as an AIAA Distinguished Lecturer and has been selected as a Sigma Xi Distinguished Lecturer for 2005-07. In 2002, he was named an Outstanding Aerospace Engineer by the School of Aeronautics and Astronautics at Purdue University. Dr. McMasters holds a bachelor's and master's degree from the University of Colorado at Boulder and a doctorate from Purdue University, all in aeronautical engineering.

National Science Foundation Graduate Research Fellowships and National Defense Science and Engineering Graduate Fellowships.

Prestigious national fellowships awarded to 15 incoming graduate students show Purdue's College of Engineering to be among the nation's best. Purdue graduate students have received 12 National Science Foundation Graduate Research Fellowships and five National Defense Science and Engineering Graduate Fellowships with two honorees attending the School of Aeronautics and Astronautics.



In the field of Aeronautics and Astronautics, **Matthew Churchfield** was awarded The National Science Foundation Graduate Research Fellowship.

"I am extremely grateful to be a recipient of the NSF Fellowship. I am excited about all the possibilities for doctoral research that this Fellowship has made possible."



Etan Karni was awarded The National Defense Science and Engineering Graduate Fellowship, which recognize individuals who have demonstrated ability and special aptitude for advanced training in science and engineering.

"I am very grateful and honored to be the recipient of this prestigious award."

THE SCHOOL OF AERONAUTICS & ASTRONAUTICS

Celebrates 60 years

All the forces that were pushing Purdue into aeronautics were greatly intensified by World War II. Mechanical Engineering was changed to the School of Mechanical and Aeronautical Engineering in 1942, and the first B.S. degrees were awarded in August of 1943. In 1943, twenty-three graduating seniors received this degree.

The School of Aeronautics was founded on July 1, 1945, with Prof Elmer F. Bruhn as head. Grove Webster, Prof. Joseph Liston and Prof. Paul E. Stanley helped set up the curricula and laboratories with the advice of industry. The first year, 239 students registered and two years later, with the return of the veterans, 736 enrolled. The first M.S. degrees were awarded in 1947 and the first Ph.D. was granted in 1950.

Prof. Bruhn served as head of the new school for 5 years, and was succeeded by Professor Milton Clauser in 1950. B.S. degrees in both aeronautical engineering and the new field of air transportation were initially offered. The air transportation program was initially well accepted, but enrollments declined, and the air transportation degree was discontinued in 1955.

The name of the school was changed to the School of Aeronautical Engineering effective from July 1956 and it was during this time when the school started producing graduates who would later be involved in the astronaut program that has made Purdue University famous as the "home of the astronauts."

The School merged with the Division of Engineering Science on July 1, 1960, with Dr. Harold M. DeGroff as head and changed

its name to the School of Aeronautical and Engineering Sciences. This joint program continued until the engineering sciences effort was ended in 1972. The present name of the School of Aeronautics and Astronautics was adopted in 1973.

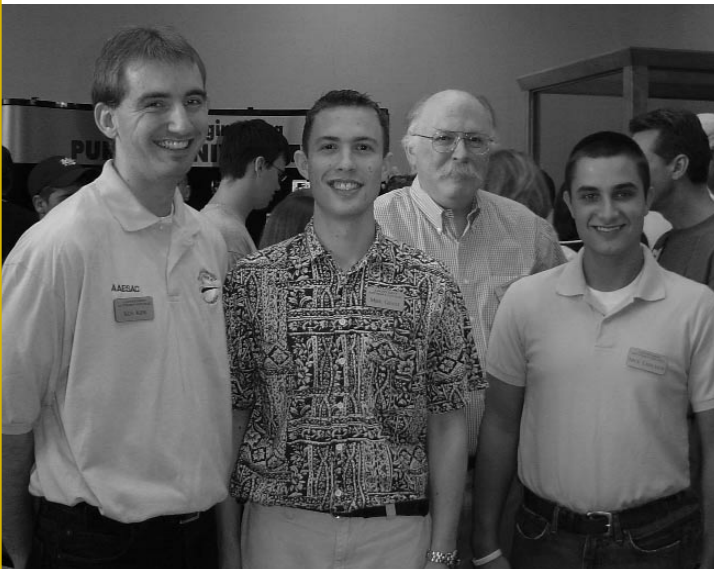
In 1967, the School moved into its present site on Grant St. Following the tragic loss of Roger B. Chaffee, Virgil "Gus" Grissom and Edward M. White on Apollo 1 on January 27, 1961, this building was renamed Grissom Hall and a new building located at the propulsion Center was named Chaffee Hall. Both Chaffee and Grissom were Purdue graduates and the loss was felt very deeply on campus. Grissom Hall was formally dedicated on May 2, 1968 and it is from this building that the School of Aeronautics & Astronautics will move to their new building, The Neil A. Armstrong Hall of Engineering in fall 2007. (See article on Armstrong Hall on page 1)

Further details of the history of the Purdue School of Aeronautics and Astronautics are described in One Small Step: The History of Aerospace Engineering at Purdue University by Dr. A.F. Grandt, Jr.; Dr. W.A. Gustafson and Dr. L.T. Cargnino and on our web site at: <https://engineering.purdue.edu/AE/History/>



Purdue Family Day 2004

Purdue Family Day took place on Saturday September 11, 2004. The Department of Engineering Education hosted an Open House in the Atrium of the Materials Science and Electrical Engineering (MSEE) Building. Faculty, staff, and students were on hand to meet with parents and students. This was an opportunity for families of freshman to come to campus to check up on their offspring, talk to faculty and fellow students and to take the opportunity of attending the game. Students from AAESAC, volunteered to take tours of the School of Aeronautics & Astronautics and to talk to parents and students.



L-R Ken Kirk; Mike Grant; Prof. Marc Williams and Nick Chachor

Purdue Scholars Day 2004

Purdue University hosted its annual Purdue Scholars Day on December 4, 2004 in the Stewart Center. Out of the 82 high school seniors that attended, 26 had an interest in the School of Aeronautics & Astronautics.



Prof. Marc Williams with (L-R) Ken Kirk; Mike Grant; Erin Calderwood Colleen McCoy and Greg Wilson



Greg Wilson & Mike Grant talk to prospective students and parents

Terri Moore Celebrates 25 years at Purdue University

Terri Moore Administrative Assistant to Dr. Tom Farris was recognized at a luncheon on January 19, 2005 for 25 years service at Purdue University. She was presented with a plaque commemorating her dedication.





A graduate of the Air Force Academy of the Republic of China, H. Mike Hua served as a military pilot in Taiwan for fifteen years, including five years as a U-2 pilot. Dr. Hua came to Purdue for his master's degree following a distinguished military career in both the R.O.C. and U.S. Air Forces.

He earned a Ph.D. from the School of Aeronautics & Astronautics at Purdue in 1968 and then worked with the Cessna and Lockheed Aircraft Companies before returning to Taiwan in 1970. He then played an instrumental role in the development of Taiwan's aerospace industry, in adjunct faculty positions at National Cheng Kung and Tung-hai Universities, and in research leadership and management positions in the country's aerospace industry.

His honors include a Distinguished Flying Cross from the US Air Force, the Distinguished Engineer Alumni Award in 1990 from Purdue; the Outstanding Aerospace Engineer award from Purdue in 1999; the Engineering Medal from ROC society of Engineers, and many medals from the ROC Armed Forces.

Now a resident and citizen of the United States, Hua has published three books, *Story of Yunhan* and *Sky of Fighters*, in Chinese, and many technical and non-fiction articles both in Chinese and English in various journals. His most recent work, *The Lost Black Cats* tells of a heroic yet heartbreaking story how two pilots were incarcerated and harassed for almost nineteen years.

It details a little-known aspect of the Cold War saga – the U-2 history and the relationship between America and the friendly ideologies in the East.

For more information contact www.authorhouse.com

Dr. H. Mike Hua

MSAE '65; Ph.D. '68

Center for Advanced Manufacturing Manufacturing Summit IV: Advancing Manufacturing in Indiana.

Leaders of manufacturing enterprises met on May 25, 2005 on the Purdue campus to discuss how the university's 1-year-old Center for Advanced Manufacturing can work with Indiana industry to develop new processes and products. Purdue President Martin C. Jischke talked about goals of the summit and participants heard from university and Indiana officials on the state and future of manufacturing in Indiana. Gov. Mitch Daniels spoke about manufacturing in the state.

Jischke announced the creation of the Center for Advanced Manufacturing in Purdue's Discovery Park at the 2003

summit. John P. Sullivan, professor of aeronautics and astronautics, was appointed on July 1, 2004 to lead the center. Sullivan also reported on the center's first year. Following Sullivan's talk, a panel fielded questions from the attendees. Joining Sullivan on the panel was Jischke; Patrick Kiely, president and CEO of the Indiana Manufacturers Association; state Sen. David Ford (D-Hartford City); and Michael Maurer, president of the Indiana Economic Development Corp. Lee Lewellyn, vice president of the Central Indiana Corporate Partnership, moderated the panel. The keynote speaker at the lunch

was Norm Egbert, Rolls-Royce Corp. vice president of engineering and technology.

The conference was co-sponsored by the Central Indiana Corporate Partnership, Purdue, the Indiana Manufacturers Association, and the 21st Century Research and Technology Fund in cooperation with TechPoint, Indiana Health Industry Forum, Indiana Economic Development Corp. and Purdue's Technical Assistance Program.



John P. Sullivan



Purdue's Rube Goldberg winners APPEARED ON 'JIMMY KIMMEL LIVE'

Purdue University scored its third consecutive win on Saturday, April 9, 2005 at the National Rube Goldberg Machine Contest with a machine that took 125 steps to turn on a flashlight.

Kevin Hollingsworth, from left, of Zionsville, Ind., and teammate Shawn Jordan, of Fort Wayne, Ind., celebrates their machine's successful run.

(Purdue News Service photo/David Umberger)

The Purdue Society of Professional Engineers beat teams from six other universities to capture the national crown in complexity and inefficiency. The winners of the national Rube Goldberg Machine contest demonstrated their winning machine for a national audience on ABC's "Jimmy Kimmel Live" on Friday April 15, 2005.

This marks the second foray into late-night television for the contest. Two years ago the winning team from Purdue Theta Tau fraternity and Phi Sigma Rho sorority appeared on the "Late Show with David Letterman."

Purdue team members included co-captain **Kevin Hollingsworth**

and **Greg Henning** both senior's in aeronautics and astronautics. "You spend most of your time trying to get the last 1 percent of things to work," said Hollingsworth, "because the machines are built out of junk, they are inherently unreliable. The most important part of building a machine is making those last few pieces of junk reliable."



L-R David A. Spencer; John T. Betts; Lloyd E. Hackman; Terry H. Murphy; Anna-Marie McGowan; Bradley D. Belcher; Anthony L. Thornton; Thomas L. Williams; Head of School Thomas N. Farris

Outstanding Aerospace Engineers *award*

2004



Anthony Thornton and Jennifer Hall



Gus Gustafson, Guy & Linda Gardner



Douglas, Paul and Anna McGowan

The School of Aeronautics and Astronautics honored eight graduates on Thursday, Oct. 21, 2004 with the Outstanding Aerospace Engineering Award. The awards, which were created to recognize the school's alumni for significant professional contributions to the field, were presented during a ceremony at the University Inn.

With this year's recipients, 93 graduates of the school have received the award since its inception in 1999. This year's recipients are:

Bradley D. Belcher, BSAEE '82 serves as lead experimental engineer of the Joint Strike Fighter F-136 Engine Program for Rolls Royce.

John T. Betts, MS '67; PhD '70 is a technical fellow at the Boeing Co.

Lloyd E. Hackman, BSAEE '52 founded Ribbon Technology Corp. Hackman served as the company's president and chairman until his retirement in 1997.

Anna-Maria McGowan, BSAEE '92 serves as a project manager for NASA.

Terrence H. Murphy, BSAEE '80 division director for space power and energy systems for the Boeing Co.

David A. Spencer, BSAEE '89; MS '91 works as the mission manager for NASA's Jet Propulsion Laboratory's Deep Impact Project.

Anthony L. Thornton, PhD '92 works with Lockheed Martin's Joint Strike Fighter New Initiatives program.

Thomas L. Williams, BSAEE '75; MS '76 sector vice president for program integration at Northrop Grumman Corp.

Paula Kerkhove, Linda Flack and Mike Kennedy



"The Purdue University designation outstanding aerospace engineer recognizes the professional contributions of graduates from the School of Aeronautics and Astronautics and thanks them for the recognition that their success brings to Purdue and the school," said Thomas N. Farris, school head. "Criteria for the award state that recipients must have demonstrated excellence in industry, academia, governmental service or other endeavors that reflect the value of an aerospace engineering degree. This celebration gives us a special opportunity to have our students interact with the best possible role models."



Ron Miller, CT & Iris Sun



David Spencer and family



The Lloyd Hackman family



Ho Jun Yoo, Hyonny Kim and Sally Gustafson

Jackie Jaron, Sally & Gus Gustafson and Leon Walters



Terrence & Mary Weisshaar with Anna, Paul & Douglas McGowan

Brad, Jane, Zach and Caitlin Belcher



Bernadette and Tom Farris greet guests

AAE Faculty Roster

Aerodynamics

G. A. Blaisdell

Associate Professor; Ph.D., Stanford, 1991, computational fluid mechanics, transition and turbulence.

S. H. Collicott

Associate Professor; Ph.D., Stanford, 1991, experimental fluid mechanics, low-gravity fluid dynamics, optical diagnostics, applied optics.

M. C. Jischke

University President; Ph.D., Massachusetts Institute of Technology, 1968.

A. S. Lyrintzis

Professor; Ph.D., Cornell, 1988, computational aeroacoustics, aerodynamics, with applications to rotorcraft and jet flows.

S. P. Schneider

Professor; Ph.D., Caltech, 1989, experimental fluid mechanics, high-speed laminar-turbulent transition.

J. P. Sullivan

Professor; Sc.D., MIT, 1973, experimental aerodynamics laser instrumentation, luminescent sensors for temperature and pressure measurements.

M. H. Williams

Professor and Associate Head; Ph.D., Princeton, 1975, aerodynamics, computational fluid mechanics.

Dynamics and Control

D. Andrisani

Associate Professor; Ph.D., SUNY at Buffalo, 1979, estimation, control, dynamics.

M. J. Corless

Professor; Ph.D., Berkeley, 1984, dynamics, systems, control.

D. DeLaurentis

Assistant Professor; Ph.D., Georgia Institute of Technology, 1998; Design Methods, Aerospace Systems and Flight Vehicles; System-of-Systems.

D. Filmer

Adjunct Professor; Ph.D., Wisconsin, 1961, Orbit mechanics, Control, Satellite Design.

A. E. Frazho

Professor; Ph.D., Michigan, 1977, control systems.

J. L. Garrison

Assistant Professor; Ph.D., University of Colorado at Boulder, 1997, Satellite Navigation, GPS, Remote sensing.

K. C. Howell

Hsu Lo Professor of Aeronautical and Astronautical Engineering; Ph.D., Stanford, 1983, orbit mechanics, spacecraft dynamics, control; trajectory optimization.

I. Hwang

Assistant Professor; Ph.D., Stanford University, 2004; hybrid system theory, information inference of complex dynamical systems, safety verification, and their application to the control of multiple-vehicle systems, especially air traffic surveillance and control.

J. M. Longuski

Professor, Ph.D., Michigan, 1979, spacecraft dynamics, orbit mechanics, control, orbit decay and reentry.

M. A. Rotea

Professor; Ph.D., Minnesota, 1990, robust and nonlinear multivariable control, modeling and identification.

Propulsion

W. Anderson

Assistant Professor; Ph.D., The Pennsylvania State University, 1996, Chemical propulsion and design methodologies.

S. D. Heister

Professor; Ph.D., UCLA, 1988, rocket propulsion, liquid propellant injection systems.

I. Hrbud

Assistant Professor; Ph.D., Auburn University, 1997; Electric Propulsion, Space Power, Advanced In-Space Propulsion

C. L. Merkle

Reilly Professor of Engineering; Ph.D., Princeton University, 1969, Computational Fluid Dynamics and Mechanics, Two Phase Flows, Propulsion Components and Systems

J. J. Rusek

Visiting Professor; Ph.D., Case Western Reserve, 1983, Propulsion, Energy Conversion, Power Generation.

Structures & Materials

W. Chen

Associate Professor; Ph.D., California Institute of Technology, 1995, Mechanical Response of Solids and

Structures under Extreme Conditions, Microstructural Effects on Mechanical Behavior, Fatigue Behavior of Engineering Materials, Experimental Solid and Structural Mechanics.

W. A. Crossley

Associate Professor; Ph.D., Arizona State, 1995, optimal design methods, genetic algorithms and aerospace applications, aircraft and rotorcraft conceptual design, composite and smart structure design.

J. F. Doyle

Professor; Ph.D., Illinois, 1977, structural dynamics, experimental mechanics, inverse problems, wave propagation.

T. N. Farris

Professor and Head; Ph.D., Northwestern, 1986, tribology, manufacturing processes, fatigue and fracture.

A. F. Grandt

Raisbeck Engineering Distinguished Professor for Engineering and Technology Integration; Ph.D., Illinois, 1971, damage-tolerant structures and materials, fatigue and fracture, aging aircraft.

H. Kim

Assistant Professor; Ph.D., University of California, Santa Barbara, 1998, Mechanical Engineering.

R. B. Pipes

John L. Bray Distinguished Professor of Engineering; Ph.D., University of Texas, 1972; application of nanotechnology to engineering disciplines including aerospace, composite materials, and polymer science and engineering.

C. Sun

Neil A. Armstrong Distinguished Professor; Ph.D., Northwestern, 1967, composites, fracture and fatigue, structural dynamics, smart materials and structures.

T. A. Weisshaar

Professor; Ph.D., Stanford, 1971, aircraft structural mechanics, aeroelasticity, integrated design.

Engineering Education

P.K. Imbrie

Assistant Professor, Freshman Engineering; Ph.D., Texas A & M, 2000, Educational Research, Solid Mechanics, Experimental Mechanics, Nonlinear Materials Characterization.

Faculty Update

New faculty members were welcomed for 2004 -2005

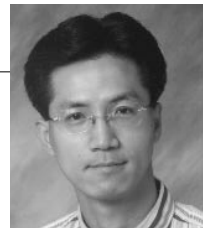
Dr. R. Byron Pipes joined Purdue in the fall of 2004 as the John L. Bray Distinguished Professor of Engineering. He has faculty appointments in Materials Engineering, Chemical Engineering and Aeronautics & Astronautics.



Dr. Pipes is a distinguished researcher, currently working on the application of nanotechnology to engineering disciplines including aerospace, composite materials and polymer science and engineering. He has active programs in the study of the advanced manufacturing science for composite materials. He is also engaged in the development of Internet-based collaborative research wherein scientific instruments are shared by research groups located in academic, corporate and government scientific centers worldwide.

Professor Pipes has served in various leadership roles in a distinguished career that includes serving as the 17th President of the Rensselaer Polytechnic Institute from 1993-1998 and the provost, vice president for academic affairs and dean of the College of Engineering at the University of Delaware from 1985-1993. He is a member of both the US and the Swedish National Academies of Engineering. He earned a bachelor's degree in civil engineering at Louisiana Polytechnic Institute, a master's degree in structural mechanics from Princeton University and a doctorate in mechanical engineering from the University of Texas at Arlington.

Dr. Inseok Hwang joined our school as Assistant Professor from Stanford University in August 2004. He is a member of Purdue's Signature Area for System-of-Systems research. He earned his Ph.D. degree, specialized in the area of multiple-vehicle control and its application to air traffic control using hybrid systems approach, in the Department of Aeronautics and Astronautics at Stanford University. He was a member of the Hybrid Systems Laboratory at Stanford University. He was a full time instructor in the Department of Aerospace Engineering at Korea Air Force Academy from 1994 to 1997. He is a Member of the American Institute of Aeronautics and Astronautics (AIAA) and is a member of the Institute of Electrical and Electronics (IEEE) Control Systems Society. He was a member of the organizing committee of Hybrid Systems: Computational and Control Workshop 2002.



Dr. Dan DeLaurentis joined our school in August 2004 as Assistant Professor from Georgia Institute of Technology. He joined the university as a strategic faculty hire in Purdue's Signature Area for System-of-Systems research. Prior to this appointment, he was a member of the Research Staff (1999 through mid-2003) and then Visiting Assistant Professor (2003) in the School of Aerospace Engineering at Georgia Tech. His research was conducted as a member of the Aerospace Systems Design Laboratory (ASDL). He is a Senior Member of the American Institute of Aeronautics and Astronautics (AIAA) and is a member of the Institute's Multidisciplinary Design Optimization (MDO) Technical Committee.



Dr. Weinong Wayne Chen joins both the Schools of Aeronautics and Astronautics and Materials Engineering as Associate Professor with tenure in January 2005. Wayne is part of the AMM Signature Area and joins us from the University of Arizona where he was associate professor in the Department of Aerospace and Mechanical Engineering. He received both his bachelor's and masters degree from Beijing University of Aeronautics & Astronautics in 1982 and 1985 respectively and his PhD in 1995 from California Institute of Technology.



**Faculty
Publications**



Pressure and Temperature Sensitive Paints
T. Liu & J.P. Sullivan
ISBN: 3-540-22241-3
Publisher: Springer Verlag, New York



Prof. Tom Farris and Prof. James M. Longuski

Dean A.A Potter Award

Purdue faculty and staff received several special honors on Sunday April 17, 2005 during the university's annual Honors Convocation at the Elliott Hall of Music. Each of Purdue's academic areas presented awards for excellence in teaching and we are delighted that **James M. Longuski**, professor of aeronautics and astronautics, was awarded the A.A. Potter Best of Engineering Teaching Award.

During the same award ceremony, **Prof. Peter K. Imbrie** was awarded the **Team Award** for the Department of Engineering, First Year Engineering Honors Program, along with Katie M. Boyce, John T. Gaunt and William C. Oakes.



P.K. Imbrie



Robert Swaim in a 1968 photo with TR-10 analog computer (Taken from One Small Step: The History of Aerospace Engineering at Purdue university by A.F. Grandt Jr. W.A. Gustafson and L.T.Cargnino)

Hsu Lo Professorship of Aeronautical and Astronautical Engineering

Dr. Kathleen C. Howell has been appointed the Hsu Lo Professor of Aeronautical and Astronautical Engineering. Kathleen Howell has been teaching aeronautics and astronautics at Purdue since 1982. She is an expert on spacecraft navigation and orbital mechanics and the motion of man-made objects in space.



She has designed innovative trajectories for spacecraft that have enabled some space missions and has developed techniques that help reduce the cost in fuel and design time for planetary missions with spaceships in orbits near points in the solar system where satellites can be safely placed to study the sun and facilitate communication with astronauts and vehicles on the dark side of the moon.

Howell has been a six-time recipient of the E.F. Bruhn Teaching Award from Purdue's School of Aeronautics and Astronautics and was selected by the Teaching and Student Awards Committee to receive this Award for 2005 and was the School's nomination for the engineering wide A.A. Potter Best Teacher in Engineering Award which she has previously received.

Howell has won numerous awards from the National Aeronautics and Space Administration, the Presidential Young Investigator Award, Dow Outstanding Young Faculty Award from the Illinois-Indiana section of the American Society for Engineering Education and the New Engineering Educator Excellence Award from the American Society for Engineering Education. She is listed in Purdue's Book of Great Teachers, was named an American Astronautical Society Fellow and one of the 50 most important women in science by Discover Magazine in 2002. Howell received the 2005 Brouwer Award from the American Astronautical Society in honor of her significant technical contributions to space flight mechanics and astrodynamics

She is a member of the American Geophysical Union, American Institute of Aeronautics and Astronautics, American Society for Engineering Education, Sigma Gamma Tau and Sigma Xi Scientific Research Society.

Howell earned a bachelor's degree in aerospace engineering at Iowa State University and a master's and doctorate in aeronautical and astronautical engineering at Stanford University.

Dr. Robert L. Swaim inducted into Purdue ROTC Hall of Fame

Dr. Robert L. Swaim was one of eight alumni who were inducted into the Purdue University Reserve Officer's Training Corps Hall of Fame on Saturday April 16, 2005. The annual induction ceremony honors distinguished graduates from the Army, Navy, Marine and Air Force ROTC programs at Purdue.

Dr. Swaim received bachelors and masters degrees in aeronautical engineering from Purdue in 1957 and 1959. He then entered active duty, and received an Air Force commission as a second lieutenant. After graduation from flight training, he received orders to Wright-Patterson Air Force Base near Dayton, Ohio, where his focus was Engineering Research. Swaim pursued graduate studies, though the Air Force Institute of Technology (AFIT). In 1966, he earned a doctorate degree in Electrical Engineering from Ohio State University.

AIAA Awards 2004-2005

Prof. Terrence A. Weisshaar

received the Structures, Structural Dynamics and Materials Award from AIAA.

Established in 1967, this award is presented to an individual who has been responsible for an outstanding recent technical or scientific contribution in aerospace structures, structural dynamics, or materials.



Best Paper Award - AIAA

The AIAA Liquid Propulsion Technical Committee has chosen the following paper as its 2003 AIAA Best Paper Award; Prof William Anderson; K.J. Miller; J.C. Sisco; B.L. Austin Jr. and T.N. Martin "Design and Ground Testing of Hydrogen Peroxide / Kerosene Combustor for a RBCC Application" AIAA Paper No. 2003-4477, Congratulations to Kevin Miller; Thomas Martin III; James Sisco and Prof. Bill Anderson.

Kevin Miller also received a 2005 AIAA Liquid Propulsion Student Award at the Joint Propulsion Conference which took place in Tucson, AZ. In July 2005.

The department has hired **John Phillips** as an electronics technician. He shares his time between ASL and campus. John has two main tasks in support of AAE electronics: repair of existing equipment, and design and fabrication of new equipment. In addition, he can serve as a resource person to help faculty and students with troubleshooting, design, and fabrication.

Dr. Swaim joined the faculty of the School of Aeronautics & Astronautics at Purdue as an associate professor in September 1967. He was promoted to Full Professor and Associate Head in 1975. Under his tutelage, no less than seven Air Force officers received their doctorate degrees from Purdue. He touched many lives and left quite a legacy during his eleven years at Purdue University. Dr. Swaim left Purdue in 1978 to accept a position as associated dean of engineering, technology and architecture at Oklahoma State University. He continues his association with Oklahoma State in his roles of Professor and Associate Dean Emeritus.

Dr. Swaim is an FAA-Certified Flight instructor, an FAA-certified Advanced Instrument Ground Instructor, and a commercial pilot with instrument and multi-engine ratings. He, his wife Charlene, and two of their three children make their home in the Stillwater, Oklahoma area.

University Faculty Scholar

Prof. **Anastastios S. Lyrintzis** was named University Faculty Scholar in December

2004. The University Faculty scholars (UFS) program is designed to recognize outstanding faculty colleagues who are on an accelerated path for academic distinction. Tasos was selected for this very competitive award by a panel of senior and distinguished professors for his outstanding accomplishments and contributions to the programs of the College of Engineering. The criteria used to determine the recipients of the award include achievements to date and potential for excellence in achieving national and or international recognition and leadership and or entrepreneurial activities in research, teaching, and service activities. Congratulations to Tasos on this recognition of professional achievement.



Welcome the Crossley babies

The School of Aeronautics & Astronautics is delighted to welcome Jacob Alva "Jack" Crossley who weighed in at 5 lbs. 8 oz and measured 18 3/4" and twin sister Anna Elizabeth Crossley, who weighed 6 lbs. 6 oz. and measured 19." The babies were born early Saturday March 19, 2005 at 2:45AM and 4:30AM and Susan and Bill are well.

Innovative Young Engineers Selected to Participate in NAE's 2004 U.S. Frontiers of Engineering Symposium

Prof. **James Garrison** Assistant Professor of the School of Aeronautics and Astronautics and alumnus **Markus Heinimann BSAAE'92; M.S.'94; Ph.D.'97** were selected as participants in the National Academy of Engineering's (NAE) 10th annual Frontiers of Engineering symposium.

The three-day event held in September 2004 brought together engineers ages 30 to 45 who are performing cutting-edge engineering research and technical work in a variety of disciplines. Eighty-six of the nation's brightest young engineers were selected to participate and were nominated by fellow engineers or organizations and chosen from a field of over 170 applicants who came from industry, academia, and government. To read more about Frontiers of Engineering, visit the NAE Web site at www.nae.edu/frontiers.



Keith J. Miller Young Investigator Award - Markus Heinimann

In addition to participating in the NAE symposium, ASTM International Committee's E08 on Fatigue and Fracture, named **Markus Heinimann**, the recipient of its Keith J. Miller Young Investigator Award for his work on fatigue and fracture.

Markus a technical specialist in the Product Design and Analysis Division at Alcoa Technical Center accepted the award at a formal presentation on May 18, 2004 in Salt Lake City, UT. Marcus was only the fifth individual to receive this award, which is presented to a person who has made significant and outstanding contributions to the fatigue and fracture research community at a stage in his or her professional career. The award recognizes those individuals who have the potential to continue making similar contributions in the future.

Purdue Team to float high-altitude airship for weather, security

Researchers from Purdue's School of Aeronautics and Astronautics are working with a 19-foot-long model they are using to develop the aerodynamic design and control system for a new high-altitude airship. About 10 researchers from Purdue are working with the U.S. Air Force to develop the helium-filled craft, which will be designed to hover in a geostationary altitude above 65,000 feet for up to a year at a time for applications including surveillance and homeland security. **Professor John Sullivan** from the School of Aeronautics and Astronautics is leading the project with Oleg Wasynczuk, a professor of electrical and computer engineering at Purdue. Sullivan is in charge of the portion of the research focusing on developing the ship's aerodynamic design.

Purdue researchers also are developing mathematical models to simulate the fuel cell's performance. The airship is intended to fly well above commercial aircraft, which cruise as high as 40,000 feet, and conventional blimps, which reach around 5,000 feet. It would have better surveillance capabilities than satellites because it would be closer to the ground. Another advantage is that the ship could hover over one location anywhere in the world, whereas satellites are geostationary only over the equator.

Engineers are not yet certain how large the airship might be, but it may be as long as 300 meters, or around 900 feet – roughly four times the length of the Goodyear blimp. "We are building a mathematical model to determine the airship's size and other design characteristics," Sullivan said. "Our model predicts how the airship will perform, how much power it will need at a given time, depending on how large it is, while carrying a certain payload, at a certain altitude, with certain wind gusts and so on." A major challenge will be finding materials for the airship's skin that are capable of withstanding the extreme ultraviolet radiation at such high altitudes for extended periods.

(From left are graduate student Bryan Redman, Professor John Sullivan and graduate student Seth McDonald. Purdue News Service photo/David Umberger)





Thousands of Amelia Earhart's papers and artifacts are among two of Purdue University Libraries' historic collections that now have detailed online catalogs, known as finding aids, making it easy for users to see what is in the collections.

From the autumn of 1935 until her disappearance in July 1937, Earhart served as Consultant in the Department for the Study of Careers for Women and Technical Advisor in the Department of Aeronautics (part of the School of Mechanical Engineering) for Purdue University. Earhart was attracted to Purdue because at the time it was the only university in the United States with its own fully equipped airport. She was also impressed that practical mechanical and engineering training was available without discouragement to the women students on campus. At Purdue, Amelia lectured, conducted conferences with Purdue faculty and students, and initiated studies on new career opportunities for women. Perhaps most importantly, she served as an example of a successful modern woman for the female students at Purdue.

Purdue students honored at annual Honors Convocation

Purdue students were recognized for their academic achievements and leadership on Sunday April 17, 2005 during the university's annual Honors Convocation at the Elliott Hall of Music. Laura Brower, a junior majoring in aeronautics and astronautics from Florham Park, N.J., received the \$1,000 Amelia Earhart Scholarship. The scholarship is given in honor of Earhart and is presented annually to a Purdue woman who has demonstrated exceptional desire to succeed in her chosen field.

Three graduating seniors from the School of Aeronautics & Astronautics who maintained a 4.0 grade point average also were honored. Etan Karni; Jayleen Guttromson and George Pollock were honored out of sixty-six of Purdue's May 2005 graduation candidates.

Earhart papers, collections database available online

Digitized portions of The George Palmer Putnam Collection of Earhart Papers also are now available online. Included in the online collection are documents regarding Earhart's 1932 solo Atlantic flight, her second and fatal attempt at a world flight in 1937 and items related to her time at Purdue. To access the finding aids for the digital collection and the actual collection, go to <http://www.lib.purdue.edu/spcol/aeahrt/> and then click on "Finding Aids." The Earhart collection contains a variety of research materials and memorabilia.

<http://www.lib.purdue.edu/spcol/aeahrt/>

**Purdue Airport
selected as
Historic Site**



The AIAA Historic Sites Committee has selected Purdue Airport as a Historic Site. The award ceremony took place on Saturday June 25, 2005 in Hangar 1. This date was chosen to coincide with the completion of the Women's Air Race Classic which was hosted by Purdue this year, and a week long library exhibit of The George Palmer Putnam Collection of Amelia Earhart Papers.



Congratulations to the graduates.

Commencement

winter 2004

Purdue University's 194th commencement took place on Sunday December 19, 2004 with approximately 3,055 candidates of whom 2,258 were undergraduates. Following the commencement ceremony in the Elliott Hall of Music, the School of Aeronautics & Astronautics honored their students with a Polar Express themed send-off.

B.S. AAE

Masaaki Atsuta
 Nickolas Bruno
 Matthew Capria
 Edward Cavanaugh
 Rachele Cocks
 Alexander Cook
 Louis-Olivier Croisetiere
 Nancy Damhauser
 Milton Davis
 Adam Deitemeyer
 Jamie Denton
 Jeffrey Dierdorf
 Eric Eagon
 Matthew Ernst
 Douglas Fedorczyk
 Miguel Gonzalez
 Robert Hart
 Patrick Hayes
 Ryan Irwin
 Whitney Jackson
 Robert Jacobs
 Manasi Joshi

William Karashin
 Kenneth Kirk
 Jamie Krakover
 Rebecca Lynch
 Daniel McCaffery
 Theresa McGuigan
 Joel Nalin
 Robert Navarro
 Jay Nerderman
 Chad Ptak-Danchak
 Adam Rietz
 Jeffrey Robinson
 Courtney Rowe
 Reuben Schuff
 Nicholas Setar
 Jonathan Shearer
 Joshua Siler
 Kyle Smith
 Timothy VanderPyl
 Nathan Vos
 Charles Weaver
 May Ee Wong

M.S.

Micah Chibana
 Xavier Dumont
 Michael Hrach
 Michael Kelly
 Timothy Kibbey
 Liang Liang
 Anh-Thu Nguyen
 Geoffrey Osier
 Fongloon Pan
 Allison Parlee
 Juan Quintana
 Ken Rubel
 Aric Simmons
 Justin A. Smith
 Leon Walters

PH.D.

Jim Crafton
 John Matlik
 Troy McConaghy



may 2005

Purdue University awarded degrees at five campuses and eight College of Technology locations throughout Indiana during the 195th commencement ceremonies in May 2005. An estimated 5,798 degrees were presented in four ceremonies, including 4,490 undergraduate degrees, 231 professional degrees, 796 master's degrees and 281 doctoral degrees.

B.S. AAE

Brian Adams
Jon Amback
John Apostol
Kevin Badger
Brienne Bogenberger
Avanthi Boopalan
Kathryn Bradley
Peterson Browning
Eric Budd
Caley Burke
Michael Carpenter
Cenci Nicholas
Brian Chernish
Kevin Clark
Randall Clark
Kristine Cornelis
Christopher Cunha
Gregory Davidson
Joseph Davis
Melissa Doan
Brendan Eash
Meredith Evans
Steven Feuerborn
Kevin Franklin
Mark French
Jason Friel
Leo Gard
Paul Gramm
Stas Gray
Christopher Grupido
Eric Gustafson
Jayleen Guttromson
Jeffrey Haddin
Daniel Halla
Jason Hargraves
Matthew Harrigan
Aaron Hauser
Matthew Heinemann

Philip Hoff
Asif Hossain
Brendan Houlton
Ezdehar Husein
Jacqueline Jaron
Etan Karni
Jared Kesling
Kevin Kloster
Douglas Klutzke
Aaron Kottowski
Christopher LaMaster
Angela Long
Hafid Long
Ross May
Colleen McCoy
Justin McCurdy
John McKinnis
Jeri Metzger
Kathleen Mondino
Joshua Mook
Todd Mostrog
Kimberly Mrozek
Maria Mullins
Christian Naylor
Eamonn Needler
Paul Niziolek
Benjamin Parkison
Stacie Pedersen
George Pollock
Colleen Rainbolt
Brian Renstrom
Charles Reyzer
Samuel Rodkey
James Roesch
Thomas Shaw
Zade Shaw
Aaron Sippel
Austin Smith
Phillip Spindler

John Stalbaum
Charles Stangle
Christopher Statler
Damian Stefanczyk
Tim Szamborski
Joseph Taylor
Lazo Trkulja
Mark Vahle
Matthew Verbeke
Justin Voo
Scott Walker
Nicholas White
Tyler Wilhelm
Eric Wolf
Raymond Wright
Leah Wyman
Robert Yochum
Jeffrey Yoke
Michelle Zeszotek

M.S. Students

Amitabh Deo
Hunter Eggink
Michael Harmon
Jin Yong Kong
Benjamin Main
Joseph McGilley
Kevin Miller
Elizabeth Newsome
Christopher Patterson
Adam Pender
Justin Smith
Brian Talbert
John Tsohas

Ph.D.

Bence Bartha
Daniel Garcia
Huai-Tzu You

august 2005

B.S. AAE

James Kallimani
Andrew Rodenbeck
Jason Tang

M.S.

Maizakiah Abdullah
Cristina Gordon
Joseph Harber
Adam Ladd
Steven Lamberson
See-Chen Lee
Muharrem Mane
Kamlesh Nankani
Jonathan Nehrbass
Chieh Ooi
Raoul Rausch
Tyler Robarge
Jungjun Suh
Travis Tanner
Yen Ching Yu

Ph.D.

Guofeng Gao
James Gregory
Hongbok Park

STUDENT *awards*

NASA JSC Co-op Special Achievement Awards and Co-op Flag Awards

Laura Brower; Jayleen Guttromson; Dorothy Byford and Nathan Payne received a Co-op Special Achievement Award.

Michael Grant and Jacqueline Jaron received a Flag Award, which includes a certificate with a mounted flag that has flown on board an Orbiter.

2005 Herbert F Rogers Scholarship

Jacqueline Jaron

2005 Koerner Scholarships

Sophomore: Michael J. Bianco;
Andrew J. Mundell;
Junior: Phillip Boettcher;
Jillian Parent
Senior: Lloyd Droppers;
Jayleen Guttromson

2005 Magoon Graduate Teaching Award

Geraldine Fritsch; Kristin Gates;
Olivia Djibo; Matthew Churchfield;
Masaki Kakoi; Raymond Joshua.

2005 Elmer F. Bruhn Undergraduate Research Assistantship

Laura Brower; Sachin Sree Raman

2005 John and Patricia Rich Scholarship

David Berger, John Collins,
Greg Heckler, John Horst,
Ryan Irwin, Jesse Jones,
James Swedler, Ryan Whitley,
and Garret Willis.

Arthur Remson Memorial Scholarship

Michael Kowalkowski

Purdue Forever Fellowship

James Canino; Raymond Joshua

Marc Weaver Memorial Scholarship

2004-2005 - Jayleen Guttromson

David L. Filmer Scholarship

George Pollock

D. J. Angus Scientech Educational Foundation

Drew Capps

IBM Scholarship

Christina Figueroa

The Outstanding Senior Award

Each year the Aeronautics Honorary Society, Sigma Gamma Tau, sponsors the outstanding senior award. The nominees are selected by the faculty, and the Outstanding Senior is selected by a student vote. Congratulations to George "Chip" Pollock.



George "Chip" Pollock



L-R Geraldine Fritsch; Kristin Gates; Olivia Djibo; Matthew Churchfield; Masaki Kakoi; Raymond Joshua.

Winners of the ATK AAE 251 Thiokol Propulsion S.P.A.C.E. Awards



Spring 2004 First Place Team

Phillip Boettcher
Marques Fulford
Ryan Abbott
Tatsuya Kotegawa
Yusaku Yamashita

L-R Phillip Boettcher; Marques Fulford; Ryan Abbott; Tatsuya Kotegawa Yusaku Yamashita; and David McGrath



Fall 2004 First Place Team

Ashley Brawner
Jasmine Cashbaugh
Alexandria Estes
Cynthia Fitzgerald
Daniel Gillies
Zubin Olikara

L-R David McGrath; Cynthia Fitzgerald; Ashley Brawner and Zubin Olikara

Congratulations to the following students who have earned top honors!

The School of Aeronautics & Astronautics is proud to announce the 2005 Purdue Student Engineering Foundation (PSEF) Outstanding Students:

Outstanding Senior Award



December 2004
Jonathan Shearer



May 2005
Jayleen Guttromson

Outstanding Graduate Student



December 2004
John F. Matlik



May 2005
Kevin Miller

The Society of Women Engineers

Congratulations to the following students from the School of Aeronautics & Astronautics who received awards during the 2004-2005 academic year:

Jasmine Cashbaugh

Ball Aerospace & Technologies Corp.

Dawn Gordon

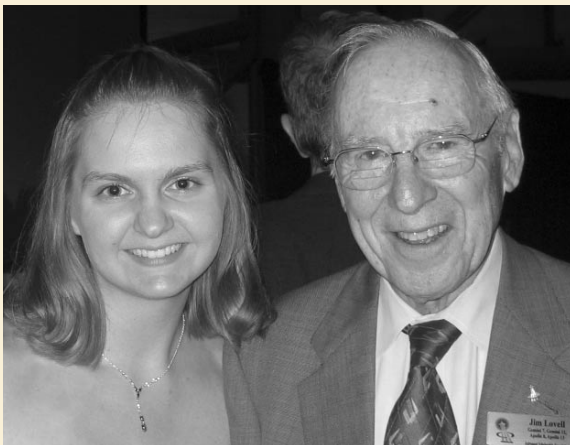
The Boeing Company

Jacqueline Jaron

The Boeing Company

Jayleen Guttromson

Zimmerman Family Award



Jayleen Guttromson and James Lovell at the Gala



ASTRONAUT SCHOLARSHIP FOUNDATION

CREATED BY THE MERCURY 7 ASTRONAUTS

As the recipient of the Astronaut Scholarship Foundation award for 2003-2005, graduating senior Jayleen L. Guttromson attended the 2005 Astronaut Hall of Fame Induction Gala at the Apollo Saturn V Center on April 29, 2005.

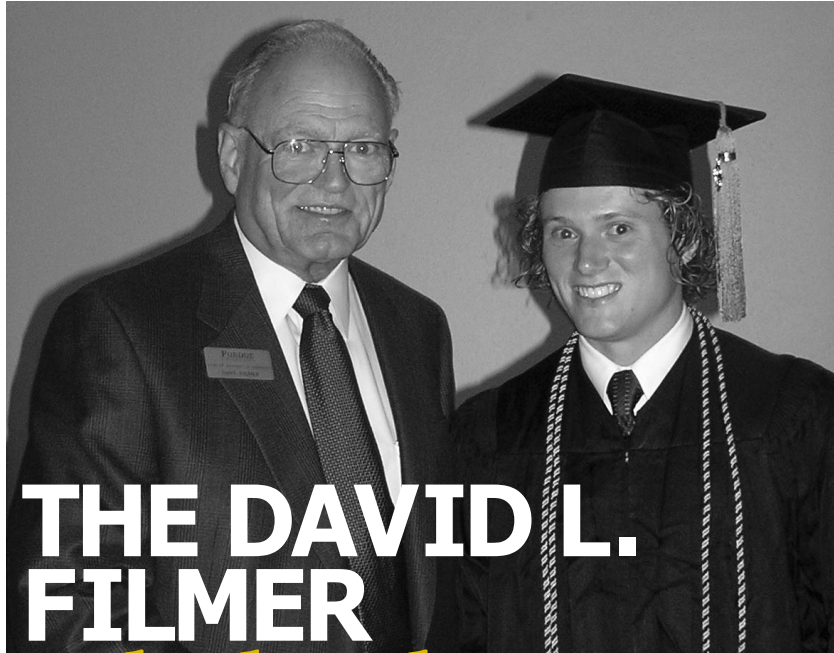
The Astronaut Scholarship Foundation was established originally as the Mercury Seven Foundation in 1984 by the six surviving members of the original Mercury Astronauts and Mrs. Betty Grissom, widow of the seventh, Purdue Graduate Gus Grissom, to foster space science education through scholarship awards.

The purpose of the foundation is to provide scholarships to upper level college students and those going for masters of doctorates in the fields of science and engineering. The goal is to help the United States retain its world wide lead in science and technology. Scholarship money is raised through astronaut appearances, fund-raising events and corporate and individual donations. Gemini-Apollo astronaut James Lovell was elected to chairman and president in 1997. More than thirty astronaut members actively fundraise through paid appearances, special events, corporate and individual donations.

The International Association for the Exchange of students for Technical Experience (IAESTE) United States is an organization dedicated to developing global skills in tomorrow's technical leaders. IAESTE United States accomplishes this goal by offering exchange programs and membership in the organization. The program offers an array of exchange programs for technical students looking to intern outside the United States and U.S. companies looking for international technical interns.

Matthew Schmitt from the School of Aeronautics & Astronautics interned with Helsinki University of Technology in Finland from June to August 2004.

Matthew then followed this internship with Study Abroad at Osaka University in Japan for the 2004-2005 academic year. Matthew received a scholarship from the Japan Student services Organization, formerly known as the Association of International Education, Japan.



scholarship

Prof. David L. Filmer and George Pollock at the May 2005 Commencement ceremonies

A scholarship has been established by Prof. David L. Filmer, Adjunct Professor of Aeronautics and Astronautics. The scholarship will last for at least ten years and is for an undergraduate aeronautical and astronautical engineering student based on academic merit with the first award was made in the spring of 2005 to George Pollock.

Filmer had been thinking for some time how he could help the students of the School of Aeronautics & Astronautics, who he says are quite simply outstanding. "Astronautics, and especially astrodynamics, has always been my hobby and first love, even during grad school, so it seemed the right choice to set this scholarship up for a student in that area of aeronautics and astronautical engineering" says Filmer. "I am delighted that George Pollock is the first recipient of this scholarship as he exemplifies the work ethic that I see is so strong in the students of the school."

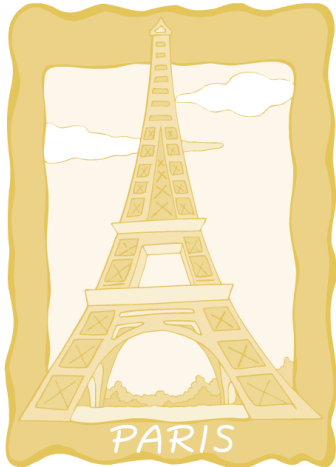
Golden Taps Ceremony Honor Purdue Students



Garrett John Williams, a senior in the School of Aeronautics and Astronautics from Downers Grove, Ill was remembered on Monday April 25, 2005 during Golden Taps, one of the university's most solemn traditions. Garrett died in an automobile accident in October 2004.

Golden Taps has been a tradition on campus since 1994. After the ceremony, the Office of the Dean of Students and University Residences held a reception for the students' families in the Schleman Hall lobby. The families also received a personalized certificate as a remembrance of the event.

STUDY ABROAD OPPORTUNITIES



Charles Morin and Gregorie Rouselle from Paris and Joel Kim during their semester at Purdue.

In an increasingly global society, an international component has become an essential part of higher education. Students traveling abroad develop maturity and independence, expand their knowledge of the world, and increase their sensitivity to other cultures. These traits help prepare them for graduate school and the job market.

Programs for Study Abroad offer several types of study abroad programs. All students on Purdue approved programs remain enrolled as regular Purdue students while on study abroad programs, and academic credit transfers back to Purdue with grades, allowing students to fit study abroad into their four-year plan. As part of the Strategic Plan, the University has also been stepping up its efforts to encourage more students to study abroad.

The School of Aeronautics & Astronautics has agreements with England, France and Australia and has students from Purdue in these three countries and also acts as hosts for overseas students. For more information please visit the Study Abroad web page at:

<http://www.studyabroad.purdue.edu>

ENvision2005

Purdue University Engineering Student Council presented hands-on activities for elementary-age children at ENvision on April 16, 2005. The program, held in conjunction with Purdue's SpringFest event, was presented from 9 a.m. to 4 p.m. April 16. Aeronautics and Astronautics Engineering Student Advisory Council (AAESAC) displayed student projects.



Educational Outreach



Many students of the School of Aeronautics & Astronautics take the time to meet with school students in K-12 and to interact with them and to share their excitement of space exploration. Colleen McCoy presented information to Caley Burkes "College Mentor for Kids group."



Erin Calderwood from AAE and Lindsay Gossom from ME representing Purdue Fall Space Day at the P-12 Engagement Forum at the University Inn, West Lafayette, IN. on April 22, 2005

The need for financial support for our school is great. Your contributions do make a difference to us and help us in achieving our mission in teaching, research and service.

Our annual Donor Honor Roll lists our alumni and friends and corporate donors who have given generously of their financial resources to support the School of Aeronautics & Astronautics. Many thanks for your investment in us. Listed are those who have generously donated during the period July 1, 2004 – June 30, 2005. Many Thanks.

From Eric C. Gentry, Director of Development

What a ride the last several months have been!



Since starting on February 17 as the Director of Development for the School, it has been an exciting several months. In that time I have had a wonderful opportunity to meet and work with an amazing group of faculty. And I have had an opportunity to meet some amazing alumni. Two visits that have stood out and have helped define for me what an

aerospace graduate from Purdue is are Andy Simo (BS 1961) and Dr. Mike Hua (MS 1965, PhD 1968).

Andy Simo was born in Czechoslovakia and moved with his parents to Chicago when he was 10. He graduated from Purdue with a BS in 1961. After graduation Andy worked for Boeing, NASA and Lockheed . Andy quickly found out that the aerospace industry is a very cyclical business. It has its good times and its bad times. Unfortunately, Andy became a victim of the downward cycle in the aerospace industry.

But these difficult times were a blessing in disguise. They forced Andy to rely on the ingenuity that he learned from watching his father operate a business when he came to America. It also forced him to rely on the engineering foundation that he learned at Purdue. Combining the two – ingenuity and engineering principles – he started New Archery Products. When I visited Andy at New Archery Products in the suburbs of Chicago, this ingenuity was clearly evident. After 35 years, New Archery Products is the industry leader in high quality archery equipment. NAP and Andy have over 40 patents combined to support the mix of ingenuity and engineering principles. Purdue alumni continue to strive for and create products and services that make our country, our economy, our transportation, and our recreation better.

Mike Hua is known in his homeland as Taiwan's "Father of Aviation." Upon graduation from Purdue he spearheaded the establishment of Taiwan's Aerospace Industrial Development Center to design aircraft for the Republic of China's Air Force Academy. Mike has also gone on to become a noted author writing two books in his native language: Story of Yunhan and Sky of Fighters. Mike has also just published his first

novel in English, Lost Black Cats: Story of Two Captured Chinese U-2 Pilots. (See story on page 18).

But his story of giving helps me better understand an Aero/Astro Alumni. Since becoming a US citizen Mike and his wife Margaret have established a charitable remainder unit trust for fellowships for Aero/Astro graduate students. In his home in Gaithersburg, Maryland, I asked Mike why he decided to give to Purdue. He said, "I was fortunate to study here in America and without my education at Purdue I would not have been able to do the things I have done. I was able to study at Purdue because I received a scholarship. I want to provide that same opportunity to others." I have learned that Purdue alumni work to provide opportunity for others.

Andy and Mike have both taught me that Aero/Astro alumni from Purdue are ingenious – they strive to provide the best for their employees and their customers, and they are also providers.

I have come to Purdue at a time of tremendous growth, opportunity, and excitement. And these two men make it easier to understand what a great university and school this is. But there are many more people that make this school a great place to work, attend, and visit. And I thank each of you for that.

As we continue to build one brick higher here at Purdue I want to thank those of you who have supported the Campaign for Purdue and our strategic plan. Without your support and dedication that which we do would not be possible. I encourage each of you to spread the word about the exciting things that are happening here at Purdue in the School of Aeronautics and Astronautics. I welcome the opportunity to meet with each and everyone one of you to learn more about this special place and to work together to make it an even better place.

This is a great time to be on campus and a great time to call yourself a Boilermaker!

All the best,

Eric C. Gentry
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