

AeroGRAM

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

Covering the 2008-2009 academic year

- NASA Apollo – 40th Anniversary
- Michael H. Campbell – Distinguished Engineering Alumni
- 2008 Outstanding Engineer Awards
- Pinnacle Award

Farewell Reception *for Tom Farris*



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On the Cover:

(L-R) Martin Corless, Tasos Lyrantzis, Skip Grandt, John Osborn, P.K. Imbrie, David Filmer, Marc Williams, Karen Marais, Tom Farris, Stephen Heister, Greg Blaisdell, George Palmer, Gus Gustafson, Charles Merkle, James Longuski, and Dominick Andrisani

AAE Headlines

After twenty-three fulfilling years at Purdue, the last eleven as School head, it is time for a transition. I decided that it was best for the School if I did not serve a third term as head and informed Dean Jamieson and the faculty and staff of that decision last August. While I am proud of much that the School has accomplished during the time that I was head, I am humbled to know that recognition of the School is due to you—the faculty, staff, students, alumni, and friends of the School. Your efforts are recognized through record enrollment and research funding as well as increased visibility in the various national rankings. I am also proud of increased diversity through all measures noting that the School is home to the first student founded NOGLSTP university chapter. I am always thrilled by achievements of School alumni and get a great sense of satisfaction from watching bright, young students progress through the system and grow into ever more responsible roles both in and out of the aerospace community. These accomplishments could not have happened without your support and I thank you for your sustained generosity over the last eleven years. Armstrong Hall has forever changed the School and Purdue.

The time is right for transition in the School leadership as evidenced by the strength of the finalists for the School head position. I envisage even bigger heights for the School through the enthusiasm brought by a new leader and trust that you will continue to support the new leadership as you have supported me.

My family and I are off to New Jersey where I will become dean of the Rutgers School of Engineering. We are excited by the new opportunity but know that Bernadette and I are forever connected to Purdue for many reasons including the two Purdue degrees earned by our children. You have been wonderful colleagues with consistent commitment to providing the best possible educational experience for our students and we cherish our relationships with you. As such, you are always welcome to call upon us should your travels take you to Central Jersey.

Thomas N. Farris





Professor Emeritus with Tom (L-R) Gus Gustafson, George Palmer, and John Osborn

The School of Aeronautics and Astronautics held a farewell reception for Tom Farris on May 25. He will serve as Dean of Engineering at Rutgers University in New Jersey beginning in July 2009.

Dr. Farris received his Ph.D. in Theoretical and Applied Mechanics from Northwestern University in 1986 and came to Purdue as an Assistant Professor the same year. He became an Associate Professor in 1991 and was promoted to Professor in 1994. The Dean of Engineering hired Tom

in 1998 to serve as Head of the School of Aeronautics and Astronautics in which he served for 11 years – longer than any Head in the School's history.

Tom continued to teach and conduct research in aerospace structures and materials throughout his 11 years as Head and has seen the School grow to 30 faculty including one NAE member with female faculty increasing from one to five.

During his time as Head, undergraduate enrollment increased from less than 200 to 520 students with 55%

being out-of-state US residents; graduate enrollment increased from 130 to 270 students. He also initiated the distance education MS program.

One highlight was to oversee the move from Grissom Hall to the \$57 million, state of the art facility for education and research Neil A. Armstrong Hall of Engineering in fall 2007. School alumni and friends contributed a significant portion of the private funds. The dedication of the building in October 2007 saw 16 astronaut alumni back on campus.

Tom also increased annual School development activity from ~\$1 million to ~\$3 million and initiated the School's Outstanding Aerospace Engineer (OAE) alumni recognition program. He also established the Boeing Distinguished Lectureship which has drawn international recognition to the School.

The School of Aeronautics and Astronautics wishes Tom, Bernadette, and their family the best as they begin the next step at Rutgers University.

AAE Head, Dr. Thomas N. Farris, accepts Dean of Engineering position at Rutgers University

Awards and Professional Activities

- National Science Foundation Presidential Young Investigator Award, 1990
- Japan Society for the Promotion of Science Fellowship, 1991
- ASME Burt L. Newkirk Award, 1992
- NAE Frontiers of Engineering Conference, 1996
- ASME/Boeing Structures and Materials Award for outstanding paper of SDM 1998
- *Journal of Strain Analysis* 2002 P E Publishing Award
- AIAA: Fellow (2009); Associate Editor, *Journal of Aircraft*, 1992-1997; General Chair, Structures, Structural Dynamics and Materials Conference, 2001
- ASME: Fellow (2001); Member of Executive Committee of Applied Mechanics Division, 2002-2007; Associate Editor, *Journal of Tribology*, 1994-2000
- IMECHE: Member of Editorial Board, *Journal of Strain Analysis*, 1998-
- Consultant to Army Science Board, 2005-
- W.A. Gustafson Outstanding Undergraduate Teacher Award, 2008. Presented annually to an Outstanding Teacher in the Purdue University School of Aeronautics and Astronautics, selected by the juniors and seniors of the student body for excellence in teaching

Service as External Evaluator and Advisory Boards

- ABET visitor to 6 universities
- External Evaluator for University of British Columbia Mechanical Engineering Department
- External Evaluator for University at Buffalo Mechanical and Aerospace Engineering Department
- Rice University Mechanical Engineering and Materials Science Advisory Board

NRC Panels

- NRC/NMAB Committee on SBIR Research to Support Aging Aircraft, 1999-2000
- Decadal Survey of Civil Aeronautics Panel C: Structures and Materials, 2006
- Planning Committee for NMAB Workshop on Materials State Awareness, 2007



DEVELOPMENT UPDATES

Your financial support leaves a lasting impact on Purdue and the School of Aeronautics and Astronautics. These gifts help us to achieve our mission in preparing students to be leaders in the aerospace field.

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 and Astronautics. Many thanks for your investment in the School of Aeronautics and Astronautics.

For the first time this year, the Honor Roll which covers the period July 1, 2008 – June 30, 2009 will be published on the Alumni page of the School Web site at <https://engineering.purdue.edu/AE>. *Thank you for your support!*

Dr. Farris Made AAE Development Successful

In my two and a half years as the development officer for the School of Aeronautics and Astronautics, I have been fortunate to work with Dr. Farris. Since arriving, Tom was extremely supportive of our development initiatives. Through my travels, I quickly found that many alumni had the highest respect for Dr. Farris as Head of the School. One leading indicator why someone contributes a major gift is because they believe in the leader and the vision he or she has for the organization. Dr. Farris did an excellent job connecting with our alumni and explaining the needs for the School.

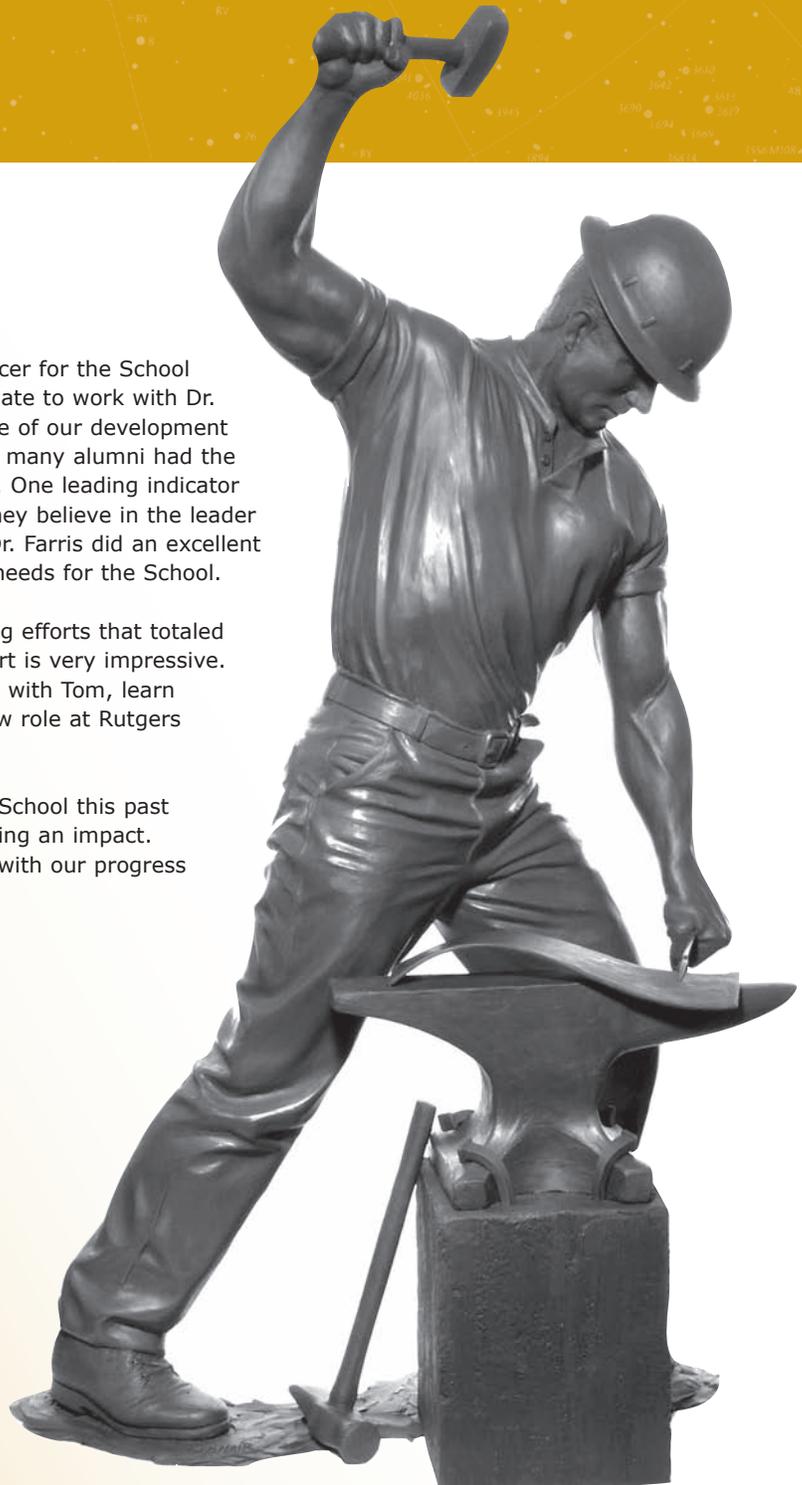
Through his years as Head, Tom oversaw fundraising efforts that totaled \$30,000,000! To raise this amount of private support is very impressive. I am fortunate to have had the opportunity to work with Tom, learn from him, and we wish him much success in his new role at Rutgers University.

We sincerely thank each of you who supported the School this past year. As you have read, your contributions are making an impact. As always, we will continue to keep you connected with our progress here at Purdue.

Boiler Up!



Nathan L. Wight
Director of Development



The Presidential and Trustees Scholarship Endowment *Challenge Match*

The Purdue family and thus our School, has been presented with both an amazing opportunity and a challenge. **The Presidential and Trustees Scholarship Endowment Challenge Match** is targeted at increasing merit-based scholarships that will allow Purdue and the School of Aeronautics and Astronautics to attract exceptional students with high academic potential. Generous donors have made available \$5 million to match gifts that establish endowments for these scholarships.

Once an endowment account receives gifts of at least \$25,000, a matching amount will be deposited which will double the annual scholarship award and therefore double the impact to a student. Additionally, endowed scholarships remain in perpetuity, grow over time and help Purdue recruit and retain the best and brightest students. Increasing the number of endowed scholarships is necessary for the School to remain competitive with our peers.

There are a number of different ways to achieve this goal including the following;

- Several individuals may work together to make a gift of \$25,000 or more and be eligible for the match.
- Employers' matching gifts are allowed to help establish the endowment and are eligible for the challenge match.
- Pledge commitments must be paid within five years.
- A maximum of \$5 million will be allocated for the match and the match will remain in effect until the funds are committed.

Recognition

The scholarship may be named for you or someone you would like to honor and gifts of \$25,000 or more qualify a donor for lifetime membership in the President's Council (Gateway level). The President's Council recognizes the University's most generous benefactors.

To honor alumni and friends who establish a scholarship endowment, the School of Aeronautics and Astronautics will display a permanent plaque with donors' names outside the main office in Armstrong Hall. These names will also be added to the School's scholarship website.

Director of Development, Nathan L. Wight, would be pleased to provide further details or discuss any aspect with you. Please call him directly on (765) 494-9124 or by email at nwight@purdue.edu. Thank you for your consideration.

Earmarking Your Gift to AAE

Your donation can be earmarked for the School of Aeronautics and Astronautics. When completing a giving form - either on line or by mail - you can note that your gift allocated to the School of Aeronautics and Astronautics. Your support assists the School with its top priorities.



Access and Success Campaign

Purdue's \$304 million Access and Success fundraising campaign helped attract more than 1,450 high-achieving scholars in fall 2008. Purdue awarded \$7 million to 820 Trustee Scholarship students and \$3.7 million to 638 Presidential Scholarship winners this year.

The Trustees Scholarship offers an annual award of \$8,000 for Indiana residents and \$10,000 for out-of-state students. The Presidential Scholarship offers an annual award of \$5,000 for Indiana residents and \$7,000 for out-of-state students. In-state tuition is \$7,750 for students enrolling this fall; non-resident students pay \$23,224.

The fund drive and internal reallocations will expand the university's student aid contribution to at least \$77 million annually. Much of the money raised will be placed in endowments, and endowment earnings will be used to fund the efforts. Student access and success is one of the major goals in the university's strategic plan.

There will be two parts in this seven-year campaign.

- **Phase I** is Student - Athlete support and the upgrade of Mackay Area with a total budget of \$99.5 million.
- **Phase II** is the Scholarship and Program Support, with the overall goal at \$304 million over the course of seven years, and the School of Aeronautics and Astronautics Campaign goal is \$3.5 million.

Within Phase II, there are seven initiatives:

- Presidential and Trustees Scholarships
- Purdue Promise
- Purdue Marquis Scholarship Program
- Summer Reading Program
- Learning Communities Expansion Effort
- College Guide Initiative
- Boiler Gold Rush Scholarship Program

More details about each of these initiatives can be found at: <http://www.purdue.edu/success/>

HEAD OF THE CLASS: PURDUE - Aviation Week & Space Technology

Purdue University is the top choice of recruiters from the aerospace and defense industries, a new study by *Aviation Week & Space Technology* magazine finds.

For its 2008 Workforce Study, the magazine asked companies in those industries to list the top five institutions from which they recruit. Of the 64 schools mentioned, Purdue ranked at the top, moving up from No. 4 in the 2007 rankings and bumping last year's No. 1 choice, Pennsylvania State University, to second.

Head of School Prof. Thomas N. Farris, said "a decade ago the school responded to input from industry advisers that said students needed to know more than design." That input, paired with Prof. John Sullivan's discussion with a student, resulted in a change in approach. Sullivan was reviewing a project with a student and recommended they go to the lab and use a lathe to test one of the design's aspects. "She said, 'What's a lathe?' She may have known design and aerodynamics, but she didn't know manufacturing," he explained.

Today, Purdue students are building unmanned vehicles, micro air vehicles and rockets and supporting Indianapolis 500 race teams, gaining experience that goes beyond mere design.

"Deciphering why [a project] failed is just as important as the design or its success," Sullivan says.

The university also launched a research and curriculum effort in System of Systems Research, directly tied to input from the industry advisory board.

While industry is big on telling academia what it needs to do better, Farris has some guidance for industry. "We have to send the message that aerospace and defense is exciting and that it helps society and the fellow man," Farris says. "We could do much better in these two areas."

"We've been working very hard to provide our students with real-world, hands-on educational opportunities. I think we've succeeded in getting the word out to industry that we are doing that," said Tom Farris, head of Purdue's School of Aeronautics and Astronautics. "The Neil A. Armstrong Hall facilities, which opened in the fall of 2007, have also made a good impression."

"We've gotten lots of feedback from friends and alumni about the top ranking, and they are very pleased," Farris said. "Aviation Week is the primary magazine for our discipline."

AAE Distance Graduate Education

The School of Aeronautics and Astronautics offers online master's-level engineering courses designed for working professional engineers, providing an opportunity to earn non-thesis online MSAAE degrees via distance learning. The distance courses from the renowned engineering program of Purdue's School of Aeronautics and Astronautics are administered by **Engineering Professional Education (ProEd)**.

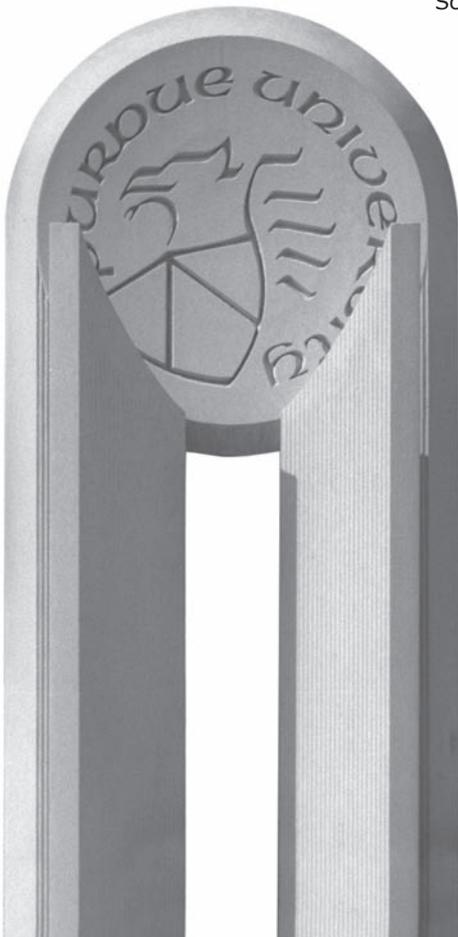
The online MSAAE degree provides the opportunity to advance knowledge and expertise in this dynamic engineering field. School of Aeronautics and Astronautics graduates will gain the knowledge and expertise it takes to impact the ongoing development and refinement of the world's aviation, defense, and space exploration systems. We currently have thirty three distance students enrolled in this program with a further seven starting in fall 2009.

To pursue a non-thesis online MSAAE degree, students must be admitted to the School of Aeronautics and Astronautics following the same criteria as on-campus students. In addition to the non-thesis MSAAE degree, it is possible to pursue advanced studies relevant to aerospace engineering and earn an Interdisciplinary MSE or MS degree from Purdue. Students will work with a graduate Aeronautics and Astronautics program committee composed of a lead advisor from the AAE faculty and at least two additional engineering faculty members to determine course selection. Ten courses must be taken, for a total of 30 credit hours. A major area of study in AAE (at least four courses) as well as a minor area (at least two courses) and a minor area in mathematics (at least two courses) should be selected.

Online MSAAE degree classes are available primarily through streaming video over the Internet or MPEG-4 podcast. Select MSAAE program courses are available via CD, DVD or videotape.

As of the Aerogram press date, AAE courses offered to distance students for Fall 2009 include: AAE 507 Principles in Dynamics, AAE 550 Multidisciplinary Design Optimization, AAE 558 Finite Element Methods in Aerospace Structures, AAE 564 Linear Systems Analysis and Synthesis, AAE 575 Introduction to Satellite Navigation and Positioning, and AAE 615/ME 615 Aeroacoustics. For Spring 2010, our planned course offerings include: AAE 508 Optimization in Aerospace Engineering, AAE 514 Intermediate Aerodynamics, AAE 590K System of Systems Modeling and Analysis and AAE 690G Astrodynamics Navigation and Guidance.

For further information visit the ProEd web site <https://engineering.purdue.edu/ProEd/> or call 877-598-4233. Also, visit the School of Aeronautics and Astronautics web site at: <https://engineering.purdue.edu/AAE/Academics/Grad/DistanceGradEd>



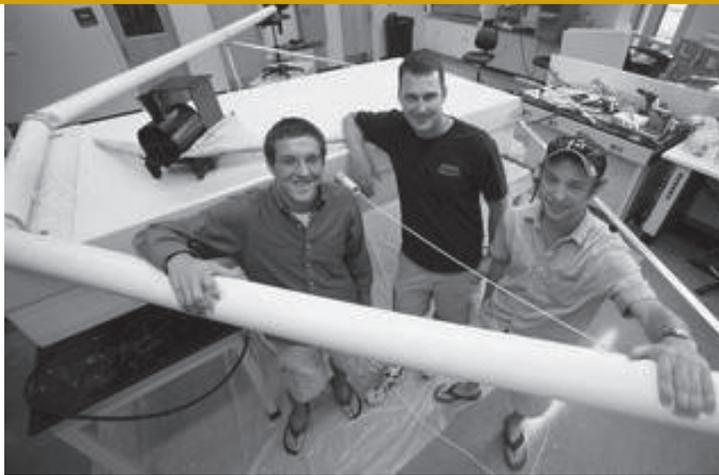
The Boilermaker Special Takes Wings

*It's a bird. It's a plane.
It's a flying train?*

Team BTFU (Boilermaker Train Flyers Union) attempted to win the Chicago RED BULL Flugtag competition on September 6 through a combination of an inventive, and somewhat crazy aircraft, combined with a unique skit, and decent glide. Flugtag may mean "flying day" in German, but all these crafts ultimately splash into the waters below.

The team was only one of 31 teams out of a field of over 170 to be accepted for the challenge and consisted of AAE students with pilot **Jonathan Huseman** and flight crew of **Kyle Noth, Wai Chak Luk, Aaron Wypyszynski, and Robert Johns**.

Dressed as train conductors, they rolled the train onto the platform with the song "I've Been Working on the Railroad," which then morphed into Ozzy Osbourne's rock classic "Crazy Train" while the wings of the train popped out and the coal cart detaches and the train flew off the end of the platform. The train is made from foam boards, PVC pipe, plywood and aluminum bars for support.



Purdue students Kyle Noth (from left), Aaron Wypyszynski and Jonathan Huseman. By Andrew Hancock/Journal & Courier



BTFU

AAE Professor Skip Grandt Honored by Alma Mater with Distinguished Alumni Award



Dr. Alten F. (Skip) Grandt, Jr. has been honored with the University of Illinois - MechSE Distinguished Alumni Award which dates back to 1968. The award is designed for the Department of Mechanical Science and Engineering alumni who have established careers and who have served in a professional and technical capacity that give honor to the MechSE Department and the University of Illinois. The award gives special recognition to these alumni.

Grandt received his BS in General Engineering, MS and PhD from the Department of Theoretical and Applied Mechanics from the University of Illinois in 1968, 1969 and 1971 respectively. Professor Grandt is the Raisbeck Engineering Distinguished Professor of Engineering and Technology Integration.

He began his career as a materials research engineer at the Air Force Materials Laboratory at Wright-Patterson Air Force Base, where he worked for eight years. Dr. Grandt joined the faculty of the Purdue University School of Aeronautics and Astronautics in 1979 and was head of the school from 1985 to 1992. He currently teaches courses in aerospace

structural analysis, structural design, fatigue, and nondestructive inspection.

Skip holds one patent, has published approximately 175 papers dealing with fatigue and fracture of aerospace materials, and has advised over 50 M.S. and Ph.D. research theses in those areas. He is the author of a 540 page textbook dealing with fracture mechanics and nondestructive inspection (A. F. Grandt, Jr., *Fundamentals of Structural Integrity: Damage Tolerant Design and Nondestructive Evaluation*, John Wiley and Sons, 2004).

He is also co-author of a 400 page book detailing the history of the Purdue School of Aeronautics and Astronautics (A. F. Grandt, Jr., W. A. Gustafson, and L. T. Cargnino, *One Small Step: The History of Aerospace Engineering at Purdue University*, 1995).

Dr. Grandt is a Fellow of the American Institute of Aeronautics and Astronautics and the recipient of the United States Air Force 2000 John W. Lincoln Medal for career contributions to the field of aircraft structural integrity. He is a lifetime member of the University of Illinois Alumni Association.

Grade school students prepare to launch water rockets



Purdue alumni astronaut Commander Mark L. Polansky



PURDUE SPACE DAY

PURDUE SPACE DAY (PSD) TOOK PLACE ON THE WEST LAFAYETTE CAMPUS OF PURDUE UNIVERSITY ON SATURDAY NOVEMBER 8, 2008 WITH ASTRONAUT ALUMNI COMMANDER MARK L. POLANSKY AS GUEST SPEAKER.

Over 400 students in grades 3-8 listened to **Commander Mark L. Polansky BSAAE'78; MSAAE'78** as he made the opening presentation of the 13th annual event. The day was run by over 150 Purdue students who came from 38 majors. Now in its 13th year, over 4,300 grade school students and over 1,300 Purdue students have participated in the program since its inception in 1996. The school students participate in three hands-on age-appropriate STEM activities during the day.

PSD encourages the children to think about future careers in engineering and also lets the children become more familiar with a university campus as a place for them to ultimately come.

The PSD executive board led by AAE seniors Tim Duquette and Ian Meginnis were very appreciative of the time and effort taken by Commander Polansky who gained many new fans from all ages. *"I really had a wonderful time, and more importantly, it was quite impressive for me to watch the fantastic job done by all the students. It made me even more proud than I already am to be a part of Purdue."* said Polansky at the end of the day.

Purdue Space Day is sponsored by the Indiana Space Grant Consortium (INSGC) and the School of Aeronautics and Astronautics. Additional support was also received from United Technologies Corporation, Caterpillar, Purdue Engineering Student Council (PESC), Sylvan Learning Center and Wal-Mart.

STS-127

Launched on July 15th after many delays, Polansky commanded the seven-strong crew of shuttle Endeavour for STS-127, ISS Assembly Mission 2J/A, which delivered the Japanese-built Exposed Facility (JEM-EF) and Experiment Logistics Exposed Section (ELM-ES) to the International Space Station. The facility provides a type of "front porch" for experiments in the exposed environment, and a robotic arm that was attached to the Kibo Pressurized Module and used to position experiments outside the station.

Polansky joined NASA in August 1992, as an aerospace engineer and research pilot. He has flown on STS-98 in February 2001 where the duration of the mission was 12 days, 21 hours and 20 minutes. His second flight was STS-116 in December 2006 where the mission duration was 12 days, 20 hours and 45 minutes.

Also on STS-127 was fellow Purdue alum **Dr. David Wolf BSEE'78**. Making his fourth spaceflight, he has flown on STS-58 in 1993 and then served on a 128-day mission to the Russian space station MIR, launching aboard STS-86 in September 1997 and landing on STS-89 in January 1998. His third flight was on STS-112 in 2002. In addition to his bachelor's degree in electrical engineering, he also has a doctorate of medicine from Indiana University.

The crew of STS-127 joined six astronauts already at the space station, for an 11-day visit and made space history by having the most number of people under one roof on the International Space Station ever. The \$100bn space station, now about the size of a four-bedroom house, has been under construction for more than a decade.

This is the 127th space shuttle flight, the 29th to the station, the 23rd for Endeavour and the third in 2009. Seven further flights to the platform remain planned before the shuttles retire in 2010. (See also page 14 - Apollo celebrates 40 years.)



(L-R) Ian Meginnis, Mark Polansky, Tim Duquette



AAE Welcomes Interim Head

The School of Aeronautics and Astronautics is pleased to announce that **Professor Kathleen C. Howell** has agreed to serve as Interim Head of Aeronautics and Astronautics. The search committee continues to make good progress and looks forward to a successful conclusion of the search in the near future.

Kathleen's appointment begins July 1, 2009 and will end either as soon as a new head has been appointed is in place or on December 31, 2009.

We extend our congratulations to Tom Farris as he moves to Rutgers University to serve as Dean of the School of Engineering and thank him for his excellent leadership of the School of Aeronautics and Astronautics and his service to the College and wish him all the best at Rutgers.

Kathleen Connor Howell is the Hsu Lo Professor of Aeronautical and Astronautical Engineering and has been a member of the faculty at Purdue since 1982. In that capacity, she maintains an active research program that includes technical publications in the areas of spacecraft trajectory design and optimization as well as maneuver strategies for transfers and on-orbit operations.

She has received various awards related to her research program including the Dirk Brouwer Award from the American Astronautical Society. Professor Howell also accepted the Breakwell Award at the Astrodynamics Symposium of the International Astronautical Congress and gave the Memorial Lecture at the 2007 IAF Congress in Hyderabad, India.

Currently the Editor-in-Chief of the AAS Journal of the Astronautical Sciences, Professor Howell previously served as Managing Editor for the journal. She has been a member of the AIAA Astrodynamics Technical Committee, the Astrodynamics Committee of the International Astronautical Federation, and is currently a member of the AAS Space Flight Mechanics Technical Committee. Professor Howell earned her BS degree in Aerospace Engineering from Iowa State University; her MS and Ph.D. degrees in Aeronautical and Astronautical Sciences are from Stanford University



Tom I-P. Shih Announced as New Head, School of Aeronautics and Astronautics

Leah H. Jamieson, John A. Edwardson Dean of Engineering, Purdue University, announced that Tom I-P. Shih, currently Professor and Chair, Department of Aerospace Engineering at Iowa State University, will become the next head of the School of Aeronautics and Astronautics effective August 17, 2009. Please join us in welcoming Professor Tom I-P Shih to our school.

Assistant Professor Inseok Hwang Wins NSF Early-Career Award



Inseok Hwang, at left, works with graduate students Brandon Wampler, middle, and James Goppert, to develop "mobile networked embedded systems" and create efficient numerical algorithms and laboratory experiments to help improve the systems. (Purdue News Service photo/David Umberger)

Prof Inseok Hwang was one of nine Purdue University faculty members who have won the National Science Foundation's most prestigious honor for outstanding young researchers in 2008.

The Faculty Early Career Development awards range from \$300,000-\$500,000 in research funding over four or five years. About 400 researchers win the awards annually.

Hwang will develop a theory to describe the workings of "mobile networked embedded systems" and create efficient numerical algorithms and experimental testbeds to help improve the systems. The complex systems include the next-generation air traffic control system, networked robotics in factories, sensor networks and biological systems such as organs, which contain many cells interacting with each other to perform a certain function.

The systems are difficult to model and optimize because they contain a large number of interacting subsystems. The algorithms also will be designed for operating autonomous air vehicles and will be tested on such vehicles. They could have broader future applications, such as enabling ground robotic vehicles to automatically maneuver around obstacles in urban environments and more-efficiently operating the power grid. The research is funded with a five-year, \$400,000 grant.

NEWS ABOUT *you*

Class Notes

Jack Edward Hartman, BSAE'49 - We have received details of Jack from his son Mark. Jack was Vice-President of Engineering (a Toy maker) at Mattel when he was killed at the age of 40 in an industrial accident at Mattel.

Nicholas J. Clones, BSAE'52 has now retired.

Dr. William E Halal, BSAE'56 is professor emeritus at George Washington University, and president of TechCast LLC at www.TechCast.org. He recently published his sixth book: "*Technology's Promise: Expert Knowledge on the Transformation of Business and Society*" (London: Palgrave Macmillan 2008).

Dr. Marty Ferman, BSAE'57 Professor Emeritus Parks College, Saint Louis University, has received a 2nd U.S. patent for a design concept of a cylindrical, internal combustion engine. The engine block is cylindrical with the pistons traveling up and down parallel to the long axis of the cylinder.

John C. Hindmar, BSAE'58 retired from Boeing Commercial Airplanes.

Dr. Donald Gray, AAES MSE'69, CE PhD '74 is the President of the West Virginia Academy of Science. Founded in 1924, the West Virginia Academy of Science is a non-profit corporation organized for the advancement of learning and scientific knowledge in all fields of science in West Virginia.

Robert C. Pederson, BSAE'69 is Project Engineer for Ball Aerospace & Technologies Corp.

Rev William Krieger, MSAE'74, PhD'77 and his wife Paulette moved to St Paul's Episcopal Church, Yuma, AZ in fall 2008 from Sun City, Ariz., where he had been associate for pastoral care and priest-in-charge at the All Saints of the Desert Episcopal Church for the past four years.

Michael P. Pumilia, BSAE'72 is a Systems Engineer, Staff for the Lockheed Martin Corp. in Fort Worth, TX.

Larry E. Marks, BSAE'74 has been elected to the Purdue Alumni Association Board of Directors representing Region 10, DE, DC, PA, MD, NJ, VA, and VA. Larry works for the Lockheed Martin Corp, VA, and will serve on the board from 2008 - 2010.

Kevin Burkhart, BSAE'83 is Managing director, Aircraft Acquisitions and Sales with FedEx Express, Memphis, TN.

Gregory C. Guest, BSAE'83 is a Production Test Pilot for Boeing Commercial Aircraft, Seattle, WA.

Mark A. Sleppy, BSAE'85 is an Associate Technical Fellow/Engineering for The Boeing Company, Seattle, WA. Mark was recognized as an Associate Technical Fellow by Boeing in the fall of 2006 and is currently a Senior Member of AIAA.

Roger deQuay, BSAE'87 is in the 787 Engine Development Program/GE for The Boeing Corp at Everett, WA.

Ken A. McDowell, BSAE'87 is an Applications Engineer South America for Siemens Water Technologies, Colorado Springs, CO. Ken and his wife have two children Bradley (2) & Kyle (7).

Brent Waggoner, BSAE'87 is an Electronics Engineer with Naval Surface Warfare Center, Crane, IN.

Jerry A. Brown, BSAE'88 is Regional Sales Manager for RFL Electronics, Inc. in Boonton Twp, NJ.

Daniel Mangel, BSAE'90 is a B747 pilot for Cathay Pacific Airways.

Joseph Caravella, MSAE'96 is the owner of Caravella Aerospace, Sherman Oaks, CA. He is developing a 3 wheeled roadable aircraft. Joe displayed a full-scale mock-up at AirVenture 2008 in Oshkosh, WI. (see article on page 29).

Shariff R. D'Souza, MS'97 is an Associate with Citigroup in London, UK.

Dr. Kivanc Ekici, PhD'01 is an Assistant Professor in the Department of Mechanical, Aerospace and Biomedical Engineering at The University of Tennessee at Knoxville, TN.

Gina Pieri, BSAE'03 graduated from the International Space University September 2008 after 9 months of coursework and 12 weeks of summer internship at NASA Ames, where she worked on mission operations and planning for the lunar orbiter mission LADEE. Gina is now working for Aerospace Missions Corporation, El Paso, TX, but is based in Southern California.

Dr. Jordan A. Taylor, BSAE'03 University of California, Berkeley.

Jonah K. Skoog, BSAE'03 is Senior Engineer - Systems with General Dynamics - AIS - Integrated Space Systems, Gilbert, AZ. Jonah was an Alternate Presenter - 7th Annual U.S. Missile Defense Conference, Washington D.C.

Mark D. Ward, MSAE'03 retired from the US Coast Guard and is now a Helicopter Test Pilot with Sikorsky Aircraft Corporation, Stratford, CT.

Jeff Yoke, BSAE'05 is an Associate Design Engineer - Aircraft Division with Moog, Inc, East Aurora, NY.

Austin Smith, BSAE'05 is an Engineer with Modern Technology Solutions, Inc. Beaver Creek, OH.

Timothy D. Szamborski, BSAE'05 is RS-68 Test Operations Engineer with Pratt & Whitney, Rocketdyne.

Kristine L. Iverson (Cornelis) BSAE'05 is Engineer/Applied Mechanics and Structures for John Deere at Waterloo, IA. Kristine married Robert Iverson MSME'04 Madison, WI. on May 14, 2008.

Adam F. Naramore, BSAE'06 is in Systems Engineering - Tactical Propulsion and Controls with ATK Mission Systems, Elkton, MD.

Meredith G. Hogan, MSAE'07 is a Systems Engineer for Northrop Grumman, Space Technology at Redondo Beach, CA.

John Beasley, BSAE'08 is with Dynamic Component Stress with The Boeing Corp.

Matthew T. Kayser, BSAE'08 is an Analytical Engineer for Daxcon Engineering, Peoria, IL.

Matthew Otterstatt, BSAE'08 is a Systems Engineer with Aerojet in Rancho Cordova, CA.

Dr. Chul Jin Syn, PhD'08 is a Research Engineer with Korea Aerospace Industries (KAI) in Sacheon, South Korea.

Alex Woods, BSAE'08 is an Engineer at the Indian Head Naval Surface Warfare Center, MD.

AEROGRAM PUBLICATION

Many people prefer receiving their newsletters electronically. With that in mind, and to be conscious of the need to preserve our environment and to keep costs down, we are going to offer our readers that option. We have no immediate plan to discontinue publishing the print version of the AeroGram, but we do plan offering it electronically and it will continue to be posted on our website.

Please contact us at aae-alumni@ecn.purdue.edu so that we can add you to our electronic mailing list. You can be assured that this mailing list is private and will not be released to a third party. Thank you for helping us think Green.

We have been delighted with the response to the Online Update Alumni Records page on the Aeronautics and Astronautics website. The web page to update your records can be found at:

<https://engineering.purdue.edu/AAE/Alumni/Update/AlumniRecords>

Tied the Knot



Matthew Fosler BSAAE'08 & Jaime Rosin BSAAE'08
April 25, 2009.

Kristine L. Cornelis, BSAAE'05
is married Robert Iverson MSME'04
Madison, WI. May 14, 2008.

Family Additions

Dan Vonderwell, BSAAE'93, MSAAE'94
and Jen Vonderwell, BS Agriculture '94
welcomed son Joshua into the world on
April 29, 2008 which coincided with their
13th wedding anniversary. He was born
6 weeks early and weighed 5 lbs, 7 oz
Dan is currently working as a perfor-
mance engineer at the Indianapolis
Rolls Royce facility.

Marriner H. Merrill MSAAE'05 PhD'09
and his wife Christine Tuner ME'05
welcomed their third child Lillian on
October 28, 2008. Lillian weighed in
at 9 lbs and 20 inches long.

Farhana Pervin and MD Enamul Kabir-
baby girl on April 22, 2009.

Doctoral student George (Chip) Pollock
and Amy Spinner Pollock welcomed
Imogen Pearl on Monday June 15th,
2009. Imogen weighed 6 lbs 13 oz
and was 20.5 inches long.

Doctoral student Geoff Wawrzyniak and
his wife Celeste welcomed Paul Anton on
Monday June 22, 2009. Paul weighed in
at 9 lbs 5 oz and was 21 inches long.

Miranda Debban Kowalkowski may not know this just yet, but there is a strong possibility that Miranda may be heading to Purdue in about 16 years. Mom is AAE graduate Theresa Debban Kowalkowski, Dad is AAE graduate Matt Kowalkowski and Uncle Michael Kowalkowski received his BSAAE in 2007 and is a current grad student.

Miranda is pictured here at about 13 months old.



Future Boilermaker

In Memoriam



Doris (Dodie) Hurt Powers BSART 1949 (Air Transportation) OAE'06 died peacefully in her sleep on February 9, 2009. A chapel and gravesite service for Dodie was held at the United States Military Academy at West Point, NY. Services were held in the Old Cadet Chapel on Friday March 20 and Dodie was interred with her husband M.G. Patrick Powers. The family plans a scholarship for the Society of Women Engineers in her name.

Major General Donald L. Lamberson BS ChemE 1953 died on March 17, 2009. The funeral took place at the First Presbyterian Church in Niceville, FL

Born in Dublin, IN in 1931, he was recognized for his many contributions to the Air Force and Department of Defense in the area of directed energy.

General Lamberson began his distinguished 35-year Air Force career as an ROTC student at Purdue, where he graduated with a bachelors degree in chemical engineering in 1953. He continued his education at the Air Force Institute of Technology, earning a master s degree in nuclear engineering in 1961 and a doctorate in aerospace engineering in 1969 as a member of the school's first doctoral class.

He held a critical role in high-energy laser development in the Air Force in the 1970's and 80's, and was particularly influential in his leadership over the Airborne Laser Laboratory, the first high-powered laser to work from an aircraft for precision targeting. General Lamberson was respected by many across the Air Force as the "father" of high-energy laser weapons.

General Lamberson's military and awards include the Air Force Outstanding Research and Development Officer Award in 1964, the Air Force Commendation Medal, the Air Force Association's Theodore von Karman Award and the Citation of Honor and Legion of Merit in 1978, the Defense Superior Service Medal in 1983, and the Distinguished Service Medal in 1989.

He was a member of the School of Aeronautics and Astronautics Industrial Advisory Council and was a member of Purdue's Engineering Visiting Committee from 1986 to 1990. Prior to his retirement in April 1989, he was assistant deputy, Office of the Assistant Secretary of the Air Force for Acquisition; Washington, D.C.

Dr. Walter (Walt) J. Hesse, BSME'44; MSME'48; PhD ME'51, DEA'66; OME'91; OAE'99; passed away on February 25, 2009. Dr. Hesse was 85 years old and was Entech Solar board member and company co-founder. He had been involved in the development of high-tech solar power systems since 1977 and had been involved in high technology research and development for more than 60 years.

He served as an assistant engineer and electrical officer on board the submarine, the U.S.S. Blenny during World War II. He also served in key positions in several national organizations, including chairman of the board and president of the Solar Energy Industry Association (SEIA). He served on the boards of the US Solar Energy Research Institute and the National Renewable Energy Laboratory (NREL) and was also a member of the Scientific Panel to the Congressional House Committee on Science and Astronautics, a member of the Advisory Board for Joint Task Force Two of the Joint Chiefs of Staff, a member of the Texas Commission on Atomic Energy, and Chairman of the Board of the Aerospace Education Foundation of the Air Force Association.

Dr. Hesse was honored by Purdue University with the Distinguished Engineer Alumnus Award in 1966, the Outstanding Mechanical Engineer Award in 1991 and the Outstanding Aerospace Engineer Award in 1999.

Leslie H. Gerhardt BSAE'50. The School of Aeronautics and Astronautics was very sad to hear of the passing of Les Gerhardt. He was a 1950 AE graduate and married to Nancy who both grew up in Milwaukee but lived in the greater Boston area after graduating from Purdue. They have four children and Les was very involved with the Aeromodeler's Club as a student. Les also raised money with other Aeromodeler's for Armstrong Hall and is named in the reception suite in Armstrong Hall.

Les worked for Honeywell and was an optical expert. He had several patents. Les's brother, Robert, earned his BS in ECE in 1950.

Industrial Advisory Council 2008 - 2009

The Industrial Advisory Council (IAC) 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 current members of the IAC are shown below. We sincerely appreciate the efforts of the members of the IAC to take time from their busy schedules to assist us in our programs, and look forward to working with them in the future.

- Mr. Frank H. Bauer (BS'79, MS'80)**
Chief Engineer • Exploration Systems Mission Directorate • *NASA HQ*
- Mr. Bradley Duane Belcher (BS'82)**
Chief Experimental Engineer • Joint Strike Fighter F136 Engine
• *Rolls-Royce Corporation*
- Dr. Paul M. Bevilaqua (MS'68, PhD'73)**
Chief Scientist • *Lockheed Corporation*
- Ms. Andrea M. Chavez (BS'88)**
Director • Manufacturing & Test Operations • *Ball Aerospace & Technologies Corp.*
- Mr. Michael J. Corso (BS'71)**
Department Chair • Tort and Insurance Litigation Department • *Henderson, Franklin, Starnes & Holt, P.A.*
- Mr. Darryl W. Davis (BS'78)**
President • Advanced Systems • *Boeing Integrated Defense Systems*
- Mr. Daniel F. Devitt (BS'75)**
Chief Engineer • *LUH American Eurocopter*
- Mr. Michael P. Dreessen (BS'83)**
Vice President • Sensors & Electronics • *Miltec Missiles & Space*
- Dr. John W. Gallman (BS'84, MS'86)**
Principal Engineer • Research and Advanced Technology • *Cessna Aircraft Company*
- Dr. Carl S. Gran (BS'74, MS'74, PhD'78)**
Principal Director • Vehicle Performance Subdivision • *The Aerospace Corporation*
- Mr. Andrew H. Kasowski (BS'72)**
Vice President • Engineering Product Development • *Cessna Aircraft Company*
- Dr. Andrew M. King (MSME'84, PhD'88)**
Director, Mission Assurance • Commercial & Civil Programs • Space & Intelligence Systems • *The Boeing Company*
- Ms. Mary Kriebel (BS'85)**
Propulsion Systems Manager • *Northrop Grumman Corp.*
- Mr. Kerry D. Masher (BSAAE'78)**
Vice President • Technical Engineering • *Hawker Beechcraft Corporation*
- Mr. Thomas L. Maxwell (BS'69)**
General Manager • Military Systems and Design Integration • *GE Aircraft Engines*
- Mr. David K. McGrath (BS'83, MS'84)**
Area 1-1 Stage 1 Chief Engineer • ATK Launch Systems • *ATK Thiokol*
- Mr. James R. Miller (BSAAE'86)**
Owner • *Sierra Crest Consulting*
- Mr. Gary E. Mitchell (BS'60)**
Retired - Vice President • *Boeing Integrated Defense System*
- Ms. Erika J. Pearson (BSAAE'93)**
Regional Director of Marketing - The Americas • *Boeing Commercial Airplanes*
- Mr. James P. Renna (BS'86)**
Director • Dynamic Systems Engineering • *Sikorsky Aircraft*
- Mr. Charles Robert Saff (BS'71)**
Boeing Technical Fellow • *Boeing Company*
- Mr. Randal E. Secor (BS'76)**
F35 Deputy Program Manager - JSF • *Northrop Grumman Corp.*
- Dr. Robert L. Strickler (BS'60, MS'62, PhD ME'68)**
Principal • *Sangamon LLC*
- Dr. Anthony L. Thornton (PhD'92)**
Senior Manager, Organization 1530 • Validation & Qualification Sciences
• *Sandia National Laboratories*
- Mr. William "Ted" Torgerson (BS'83)**
Director - Vehicle Development • *Boeing Integrated Defense Systems*
- Mr. John J. Walsh (BS'82)**
President • *Sypris Electronics LLC*



U.S. News & World Report RANKINGS

Each year, the *U.S. News & World Report* releases the year's national rankings of both undergraduate and graduate programs. The undergraduate rankings are published in the fall and graduate programs in the spring.

In August 2008, **Purdue University ranked #9** among undergraduate engineering programs at doctoral-granting universities tied with Carnegie-Mellon.

The discipline ranking for the **School of Aeronautics and Astronautics for undergraduate programs was #4 up from #6**, tied with University of Illinois.

On April 24, the *U.S. News & Report* released the national rankings of graduate programs. **Purdue University was ranked at #12, with the School of Aeronautics and Astronautics ranked at #4 up from #5 last year.**

U.S. News & Report **BEST GRADUATE SCHOOLS ARTICLE**

Thomas Farris, head of AAE was quoted in the May 6 edition of *U.S. News & Report* under "**Aerospace Engineering Searches for New Talent**" As more baby boomers reach retirement; demand for qualified graduates is on the rise.

Thomas Farris, head of Purdue's aeronautics school, says the prime motivation for students isn't economic reward but working in a field that's fascinated them since childhood. "For the most part, our students become aerospace engineers because they are following their dreams."

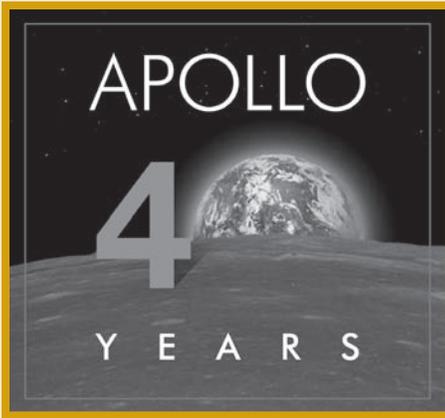
Graduate student Tom Juliano was also quoted.

At a Mach 6 wind tunnel operated by Purdue University, Juliano studies airflows nearest the aircraft surface. Some are laminar, or calm; others, turbulent—and they're the ones that intensify

the heat the vehicle is subjected to. Juliano's experiments show when airflows change from laminar to turbulent. If his predictions are too high, the aircraft will be over-clad with heavy thermal protection layers, impeding its performance. If they're too low, it will burn up. "This is not trivial," Juliano says of his research.



Tom Juliano installs a Hyper-2000 model onto the sting of the Mach 6 wind tunnel operated at Purdue University



NASA Apollo-40th Anniversary Forty Years Later

Forty years ago, men from Earth began for the first time to leave our home planet and journey to the moon.

From 1968 to 1972, NASA's Apollo astronauts tested out new spacecraft and journeyed to uncharted destinations. Apollo 40th Anniversary Events and Activities start on May 18 and continue on until November 14.

NASA began to conduct space missions within months of its creation in 1958, and made historic achievements in many areas of aeronautics and space research. Most well-known of its efforts are the human space flight initiatives.

Purdue Alumni Astronauts Speak at Apollo Celebration - "On the Shoulders of Giants"

Purdue alumni Mark Polansky and David Wolf, who were serving in mission STS-127 to the international space station, provided a video message for the NASA celebration of the Apollo program on Monday July 20.

With a Purdue banner in the background and both wearing Purdue baseball caps, Polansky and Wolf talked about how the moon landing inspired them when they were students at Purdue and how the space program continues to provide inspiration for others. The astronauts ended their video with a cheer of "Go Boilers" and a fist bump. This message can be found on YouTube <http://www.youtube.com/watch?v=c8SN92zF2Gw>

Purdue Alumni have been very involved with the Apollo program including:

Apollo 1 Virgil "Gus" Grissom & Roger Chaffee

Apollo 10 Gene Cernan

Apollo 11 Neil A. Armstrong

Apollo 17 Gene Cernan

BACKUP CREW

Apollo 7 Gene Cernan

Apollo 8 Neil A. Armstrong

Apollo 14 Gene Cernan

AAE Alum Anthony J. Gingiss named 2009 NOGLSTP Engineer of the Year



Anthony J. Gingiss, M.S., Systems Engineering Integration and Test Manager for the GPS IIF Program at Boeing Space and Intelligence Systems in El Segundo, CA.

The global positioning system IIF (GPS IIF) is an upgrade of the original GPS, which is a worldwide timing and navigation system that utilizes 24 satellites positioned in orbit approximately 12,000 miles above the Earth's surface. Mr. Gingiss' responsibilities on this project include all systems engineering spanning Space and Control Segments, Flight Products, and Mission Readiness and Mission Operations Support.

Mr. Gingiss is President Emeritus of the El Segundo California chapter of the Boeing Employee Association of Gays, Lesbians, and Friends (BEAGLES). He has been active in the leadership of the LGBT Employee Resource Group at Boeing and Legacy Hughes Space and Communications since the mid 1990s. Mr. Gingiss received his MS in Aerospace Engineering from MIT and his BSAAE from Purdue University.

Legal Elite



Michael J. Corso BSAAE;'71 Fort Myers, FL, has been named to Florida Trend's Legal elite after being selected for inclusion on the Florida Super Lawyers list for 2008. Only 5% of Florida attorneys have been named to the list.

Additionally, Corso has been named to Florida Trend Magazine's 6th Annual Florida Legal Elite 2009, a special report which recognizes and honors prominent Florida lawyers.

Corso is chair of Henderson, Franklin, Stames and Holt, P.A. Tort & Insurance Litigation division and is Board Certified in Civil Trial Law and Business Litigation (by both The Florida Bar and the National Board of Trial Advocacy). He focuses his practice in general litigation matters, including copyright/trademark infringement, product liability and the defense of non-medical professionals such as lawyers, accountants, architects, engineers and surveyors. Corso also serves on the AAE Industrial Advisory Council.

Corso is very active in a number of professional associations including the Florida Defense Lawyers Association (immediate past president), the Defense Research Institute, American Institute of Architects and the Florida Engineering Society.

Purdue Graduate – Acting Manager, Launch Integration for the Space Shuttle Program



Purdue graduate **Mike Moses MSAAE'95** was named Acting Manager, Launch Integration for the Space Shuttle Program at the Kennedy Space Center on October 6, 2008. In this position, he will be responsible for the overall management, integration, and operations for the Space Shuttle at KSC.

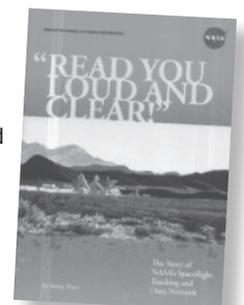
He earned a Bachelor of Science degree in Physics from Purdue in 1989, a Master of Science degree in Space Sciences from Florida Institute of Technology in 1991, and a Master of Science degree in Aerospace Engineering from Purdue in 1995. He joined NASA at the Johnson Space Center in 1998 as a flight controller in the Propulsion Group within Mission Operations Directorate. He served as Group Lead of the Propulsion Group beginning 2000, and has served in senior technical and managerial positions of increasing responsibility. Moses was selected to be a Flight Director in 2005, a position held for numerous missions including the STS-123/1J/A mission where he served as the Lead Shuttle Flight Director.

Sunny Tsiao BSAAE'84, MSAAE'85

"Read You Loud & Clear!"

AAE alumnus Sunny Tsiao was privileged to be awarded an opportunity by NASA Headquarters in chronicling NASA's spaceflight Tracking and Data network. Published by NASA on May 30, 2008, the book was three years in the making.

- ISBN-10: 0160801915
- ISBN-13: 978-0160801914



Young Alumna Wins Silver Snoopy Award

Jayleen Guttromson BSAAE'05 has received NASA's prestigious Silver Snoopy Award in recognition of her support to the Space Shuttle and International Space Station (ISS) programs. Jayleen is Deputy Subsystem Manager, Extravehicular Mobility Unit (EMU) Space Suit and Crew Survival Systems Branch at NASA Johnson Space Center.

The Snoopy award is one of the highest and most prestigious honors sponsored by NASA's Office of Space Flight. The award is reserved for astronauts to personally express thanks to employees for their significant contributions to flight safety and mission success. Awardees receive a Silver Snoopy pin designed for the astronaut corps by the late Charles Schulz, creator of the Peanuts comic strip. The Silver Snoopy pin signifies that the recipient is regarded among the best in their profession. The award also includes a framed certificate of appreciation.

At the award ceremony at the Gilruth Center at NASA JSC on December 9, Jayleen was presented with the pin that flew on space shuttle mission STS-34, October 18 -23 1989 by astronaut Ellen Baker along with a framed letter of commendation.

"Since I began my career at NASA as a Purdue cooperative education student, I have always held the utmost respect for recipients of the Silver Snoopy award. It is with great honor that I receive this award and the recognition it bestows from NASA's astronauts and my peers."

Said Jayleen after the award was presented.

Jayleen's parents Theresa and Palmer Guttromson attended the ceremony and are pictured next to Jayleen along with Wayne Hale, deputy Associate Administrator of Strategic Partnerships.



Ellen Baker pins on Jayleen's Silver Snoopy Award



(L-R) Dorothy Metcalf-Lindenburger (Astronaut), Ellen Baker (Astronaut), Jayleen Guttromson (Awardee), Theresa Guttromson (Mother), Palmer Guttromson (Father), and Wayne Hale (Deputy Associate Administrator of Strategic Partnerships).

23rd Purdue Alumnus chosen by NASA for Astronaut Training

Purdue has its 23rd alumnus chosen as one of nine astronaut candidates selected by NASA in June 2009 out of more than 3,500 applicants.



Scott D. Tingle, 43, of Hollywood, MD, will begin two years training in August 2009 at NASA's Johnson Space Center in Houston.

Tingle earned a master's degree in mechanical engineering from Purdue in 1988 with a specialty in fluid mechanics and propulsion. He is a commander in the U.S. Navy and has accumulated more than 3,100 flight hours in 53 types of aircraft, including combat missions in Iraq and Afghanistan.

His decorations include a Meritorious Service Medal, three Air Medals, six Navy Commendation Medals to include a Combat V, four Navy Achievement Medals and various unit commendations. He and his wife, Raynette, have three children, Amy, Sean and Eric:

Scott Meyer to be Managing Director of Zucrow Labs

Scott Meyer has accepted the position of Managing Director of the Maurice J. Zucrow Laboratories. This newly-created position will be jointly supported by the Schools of Aeronautics and Astronautics and of Mechanical Engineering in keeping with the increase in interdisciplinary collaborative projects there, as well as in part by Scott's own research projects.

Scott has served the Laboratories well since 2002 in his current role as Senior Engineer. With his help the number of one-of-a-kind facilities at Zucrow has increased considerably, and the number of students and research programs there has expanded greatly. This new structure should allow us to keep that momentum.



Mike and Madeline Kennedy



Mike and Madeline Kennedy Structures Teaching Laboratory

Pinnacle Award

Michael and Madeline Kennedy (BSAAE'70, DEA'00 and OAE'01) and **David and Linda Swain (BSAE'64, DEA'93 OAE'99, and HDR'00)** have been honored for their generous support of the School of Aeronautics and Astronautics by receiving the Presidents Council highest honor - ***The Pinnacle Award***.

The President's Council was established in 1972 to recognize the distinguished alumni and friends who understand that the University can fulfill its educational goals only with their loyal support and financial involvement. These individuals have paved the way for the future and continue to support the excellent education afforded Purdue students.

Mike and Madeline Kennedy were honored during the Dedication dinner of the Neil Armstrong Hall of Engineering in October 2007. Their pledge named the ***Mike and Madeline Kennedy Structures Teaching Laboratory*** in the Neil A. Armstrong Hall of Engineering.

David and Linda Swain were honored during the President's Council pre-game event in September 2008. The ***David and Linda Schimmel Swain Scholarship*** supports Indiana resident students in the School of Aeronautics and Astronautics.

Alumni, friends, and corporate support help the School in achieving its mission of educating young men and women to be leading aerospace engineers. Without your support, we would fall short of the necessary resources to provide a world-leading education.

Whether funding student scholarships, awards to attract and recognize distinguished professors, or capital building projects, the common goal of members is to empower Purdue's family to be the very best. President's Council members embrace and embody preeminence.

David and Linda Schimmel Swain



David and Linda with four out of five of their scholarship recipients.



MICHAEL H. CAMPBELL *Distinguished Engineering Alumni 2009*



The College of Engineering honored nine alumni February 20 during the Distinguished Engineering Alumni program, part of National Engineering Week.

The School of Aeronautics and Astronautics was delighted to announce **Michael H. Campbell** as the 2009 Distinguished Engineering Alumnus. "These alumni have distinguished themselves in wide-ranging careers that demonstrate how engineers can improve our lives," said Leah Jamieson, the John A. Edwardson Dean of Engineering. "Purdue's College of Engineering has more than 76,000 alumni. This group represents the contributions that so many of those Purdue engineers make in bettering our world."

Michael H. Campbell earned a bachelor's in aeronautical and astronautical engineering in 1983. Campbell, of Winnetka, Ill., is executive vice president and chief operating officer of Fair Isaac, which applies high-level math to study fraud, determine credit worthiness and predict consumer behavior. He is considered a pioneer in the application of mathematical optimization to complex management tasks. In 1989, he founded Campbell Software, which would develop the leading workforce management solution for the retail marketplace. Campbell Software was sold to SAP Americas in 1999.

Dr. Paul M. Bevilaqua, MSAAE'68, PhD'73, OAE'02, DEA'05

Dr. Paul Bevilaqua was awarded an honorary degree by Cranfield University and Defence College of Management and Technology, UK on July 18, 2008.



The Defence Academy is the UK Defence's Higher Educational Institution, and a key component of operational capability. The Academy is comprised of the Royal College of Defence Studies, the Joint Services Command and Staff College, the Defence College of Management and Technology, the Advanced Research and Assessment Group, and the Armed Forces Chaplaincy Centre.

The Academy has three strategic partners – King's College London, Serco Defence and Aerospace, and Cranfield University.

The Defence Academy is located on the campus in Shrivenham which is located on the Oxfordshire/ Wiltshire border close to Swindon. Lord Vincent of Coleshill presented the honorary degree to Dr. Bevilaqua. In his acceptance speech, Dr Bevilaqua said "Each time I visit Shrivenham, I go away even more impressed by the work of this institution. The faculty here understands that while technology changes, science lasts....Shrivenham is a huge credit to the Ministry of Defence and to this Nation.... and I am proud of my association with this institution."

Dr. Bevilaqua has been putting on a VSTOL short course there for about ten years now. After returning to the US, he commented that "It was quite an honor." He also got to keep the cap and robe!

The Band of Her Majesty's Royal Marines Commando Training Centre, Lympstone provided the music at the Ceremony. Afterwards, the band entertained the graduates and guests with a Military Display followed by March Past, with the salute taken by the Director of the Defence Academy, Lieutenant General Andrew Graham.

NB – the spelling of Defence is correct in a British setting!

Center for Advanced Manufacturing (CAM)

The Center for Advanced Manufacturing (CAM) is now within the School of Aeronautics and Astronautics. CAM serves as the central point on a wide range of manufacturing issues, linking existing and emerging business with researchers on campus.

Based in Discovery Park in Mann Hall, the CAM staff is Dr. John Sullivan, Director; Steven Shade, Managing Director and Leza Dellinger Administrative Assistant. More information can be found on their web site: <http://www.purdue.edu/dp/cam/>

SDR² SCULPTURE DEDICATION

A new sculpture was dedicated on October 25th on the 3rd floor of the Armstrong Hall of Engineering.

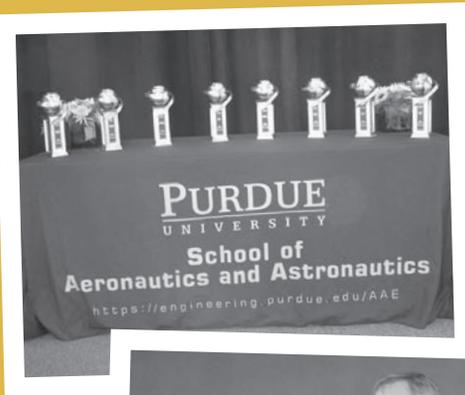
Named the SDR2 Sculpture, the designer is an AAE graduate - R. Steven Sawyer, BSAAE'81; MS'83; PhD'89 along with Richard McNeely who received his Bachelor of Arts Degree in 1974.



"In engineering,
there is discipline
and there is art."

Outstanding AEROSPACE ENGINEER AWARDS

PURDUE UNIVERSITY



Frank Bauer & Tom Farris



Lloyd Hackman OAE'04 and his wife Rosalene, Brad Belcher, OAE'04, Chris Foster and Purdue president France Córdova



Larry Cargino and Bob Kerkhove



(L-R) Skip Grandt, Gus Gustafson, Jennifer Collicott, Mary Weisshaar, Barbara Grandt

Eight alumni received The Outstanding Aerospace Engineers Award in October 2008. Each recipient demonstrated excellence in industry, academia, government service, or other endeavors which reflect the value of an aerospace engineering degree.

With this year's recipients, 123 graduates of the school have received the award since its inception in 1999. This number represents about 1.5% of more than 7000 alumni of the School.



The 2008 recipients are:



Frank H. Bauer
BSAAE'79, MSAAE'80
Chief Engineer,
Exploration Systems
Mission Directorate
NASA



Darryl W. Davis
BSAAE'78
President,
Advanced Systems
BOEING INTEGRATED
DEFENSE SYSTEMS



Dr. Wayne Eckerle
BSAE'75, MSAE'76
Vice President of
Corporate Research
and Technology
CUMMINS, INC.



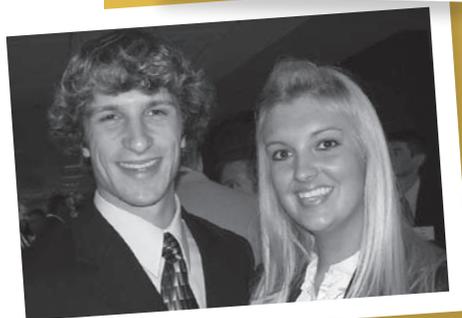
Dr. Walter Eversman
BSAE'59
Curators' Professor of
Mechanical and
Aerospace Engineering
MISSOURI UNIVERSITY
OF SCIENCE AND
TECHNOLOGY

(Back Row L-R) Lt. Gen. Timothy A. Kinnan, Troy M. Gaffey, Dr. Markus H. Bauer, Wayne A. Eckerle, (Front Row L-R) Dr. Walter Eversman, Kenneth B. Sanger, Darryl W. Davis



Lina & Tasos Lyrantzis with President Martin Jischke

George Palmer, David Filmer and Troy Gaffey



Tim Duquette and Allissa Battocletti - Student Master of Ceremonies

(L-R) Prof. Marc Williams and Brad Belcher



Troy M. Gaffey
BSAE'60
Senior Vice-President
Research and Engineering
(Retired)
BELL HELICOPTER
TEXTRON



Dr. Markus B. Heinimann
BSAAE'92, MSAAE'94,
PhD AAE'97
Chief Design Engineer
for Aerospace Structures,
Product Design and
Development Division
ALCOA TECHNICAL
CENTER



Timothy A. Kinnan
MSAAE'71
CEO
PINNACLE AERONAUTICS



Kenneth B. Sanger
BSAAE'81, MSAAE'83
Director and Program
Manager, Ground-Based
Midcourse Defense
European Site Program
THE BOEING COMPANY



Allison Bolton, Troy & Linda Gaffey



ELEVENTH ANNUAL

Outstanding Aerospace Engineer Awards

THE FACULTY OF THE SCHOOL OF AERONAUTICS AND ASTRONAUTICS

Invites you to attend

**The Awards Dinner and Ceremony
to honor the recipients of the
2009 Outstanding Aerospace Engineer Awards**

Thursday, September 24, 2009

RECEPTION AT 6:30 P.M.

DINNER AT 7:30 P.M.

Shively Club

3RD FLOOR, ROSS-ADE STADIUM
PURDUE UNIVERSITY
WEST LAFAYETTE, INDIANA

Adult Meal is \$35.00 per person

Student Meal is \$25.00 per person

Seating is limited. Reservations must be received by September 10, 2009.

If you are interested in attending, please fill out the form on the
opposite page and send along with the total amount due.

RECIPIENTS OF THE 2009 OUTSTANDING
AEROSPACE ENGINEER AWARDS

William H. Ailor III

PhD'74

Thomas L. Maxwell

BSAAE'69

Charlene Edinboro

BSAAE'75, MSAAE'76, PhD'02

Suwendoo K. Ray

BSAAE'83, MSAAE'84, PhD'87

Roy A. Eggink

BSAAE'81

Dennis E. Warner

BSAAE'73, MSME'76

Andrew M. King

MSME'84, PhD'88

John R. Wheadon Jr.

BSAAE'73

ELEVENTH ANNUAL

Outstanding Aerospace Engineer Awards Thursday, September 24, 2009

If you plan to attend,
please complete and
mail this form along with
a check for the total
amount due to the
address below.

**Purdue University
Attention: OAE
School of Aeronautics
and Astronautics
701 W. Stadium Avenue
West Lafayette, IN
47907-2045**

Make checks payable to
Purdue Foundation

**Sorry no phone
reservations accepted.**

Seating is limited.

**Reservations must
be received by
September 10, 2009.**

____ ADULTS @ \$35 each

____ STUDENTS @ \$35 each

I am interested in sponsoring ____ students @ \$35 each

Name _____

Guest Name _____

Degree/Year _____

Address _____

City _____ State _____ Zip _____

Phone _____

E-Mail _____

If a vegetarian or special meal is needed, please indicate requirements.

AAE Faculty Roster

Aerodynamics

- A. Alexeenko**
Assistant Professor; Ph.D., Penn State, 2003
- G. A. Blaisdell**
Associate Professor; Ph.D., Stanford, 1991
- S. H. Collicott**
Professor; Ph.D., Stanford, 1991
- M. C. Jischke**
President Emeritus; Ph.D., Massachusetts Institute of Technology, 1968
- A. S. Lyrintzis**
Professor; Ph.D., Cornell, 1988
- S. P. Schneider**
Professor; Ph.D., Caltech, 1989
- J. P. Sullivan**
Professor; Sc.D., MIT, 1973
- M. H. Williams**
Professor and Associate Head; Ph.D., Princeton 1975

Aerospace Systems

- D. Andrisani**
Associate Professor; Ph.D., SUNY at Buffalo, 1979
- B. S. Caldwell** *(By Courtesy)*
Associate Professor of Industrial Engineering; Ph.D., University of California-Davis, 1990
- W. A. Crossley**
Associate Professor; Ph.D., Arizona State, 1995
- D. DeLaurentis**
Assistant Professor; Ph.D., Georgia Institute of Technology, 1998
- I. Hwang**
Assistant Professor; Ph.D., Stanford University, 2004
- K. B. Marais**
Assistant Professor; Ph.D. Massachusetts Institute of Technology, 2005
- J. P. Sullivan**
Professor; Sc.D., Massachusetts Institute of Technology, 1973
- D. Sun**
Assistant Professor; Ph.D., University of California at Berkeley, 2008
- T. A. Weisshaar**
Professor; Ph.D., Stanford, 1971

Astrodynamics and Space Applications

- D. Filmer**
Adjunct Professor; Ph.D., Wisconsin, 1961
- J. L. Garrison**
Associate Professor; Ph.D., University of Colorado at Boulder, 1997
- K. C. Howell**
Hsu Lo Professor of Aeronautical and Astronautical Engineering; Ph.D., Stanford, 1983
- J. M. Longuski**
Professor, Ph.D., Michigan, 1979

Dynamics and Control

- D. Andrisani**
Associate Professor; Ph.D., SUNY at Buffalo, 1979
- M. J. Corless**
Professor; Ph.D., Berkeley, 1984
- D. A. DeLaurentis**
Assistant Professor; Ph.D., Georgia Institute of Technology, 1998
- D. Filmer**
Adjunct Professor; Ph.D., Wisconsin, 1961
- A. E. Frazho**
Professor; Ph.D., Michigan, 1977
- I. Hwang**
Assistant Professor; Ph.D., Stanford University, 2004
- D. Sun**
Assistant Professor; Ph.D., University of California at Berkeley, 2008

Propulsion

- W. Anderson**
Associate Professor; Ph.D., Pennsylvania State University, 1996
- J. Gore** *(By Courtesy)*
Vincent P. Reilly Professor of Mechanical Engineering; Ph.D., Pennsylvania State University, 1986
- S. D. Heister**
Professor; Ph.D., UCLA, 1988
- I. Hrbud**
Assistant Professor; Ph.D., Auburn University, 1997

- N. Key** *(By Courtesy)*
Assistant Professor of Mechanical Engineering; Ph.D., Purdue University, 2007
- C. L. Merkle**
Reilly Professor of Engineering; Ph.D., Princeton University, 1969
- T. Pourpoint**
Research Assistant Professor; Ph.D., Purdue University, 2005
- L. Qiao**
Assistant Professor; Ph.D., University of Michigan, 2007
- J. J. Rusek**
Adjunct Assistant Professor; Ph.D., Case Western Reserve, 1983
- S. Son** *(By Courtesy)*
Associate Professor of Mechanical Engineering; Ph.D., University of Illinois, 1993

Structures & Materials

- W. Chen**
Professor; Ph.D., California Institute of Technology, 1995
- W. A. Crossley**
Associate Professor; Ph.D., Arizona State, 1995
- J. F. Doyle**
Professor; Ph.D., Illinois, 1977
- T. N. Farris**
Professor and Head; Ph.D., Northwestern, 1986
- A. F. Grandt**
Raisbeck Engineering Distinguished Professor for Engineering and Technology Integration; Ph.D., Illinois, 1971
- P. K. Imbrie** *(By Courtesy)*
Associate Professor; Ph.D., Texas A & M, 2000
- R. B. Pipes**
John L. Bray Distinguished Professor of Engineering; Ph.D., University of Texas, 1972
- C. T. Sun**
Neil A. Armstrong Distinguished Professor; Ph.D., Northwestern, 1967
- T. A. Weisshaar**
Professor; Ph.D., Stanford, 1971



The May 2009 edition of CPIAC (Chemical Propulsion Information Analysis Center) is now available both on the web site and in pdf version. One of the highlights includes an article on Purdue Propulsion and the Advance Propulsion Through Student Research Activities

<http://www.cpiac.jhu.edu/>

Researchers Cooking Up New Gelled Rocket Fuels

Engineers and food scientists are teaming up to develop a new type of gelled fuel the consistency of orange marmalade designed to improve the safety, performance and range of rockets for space and military applications.

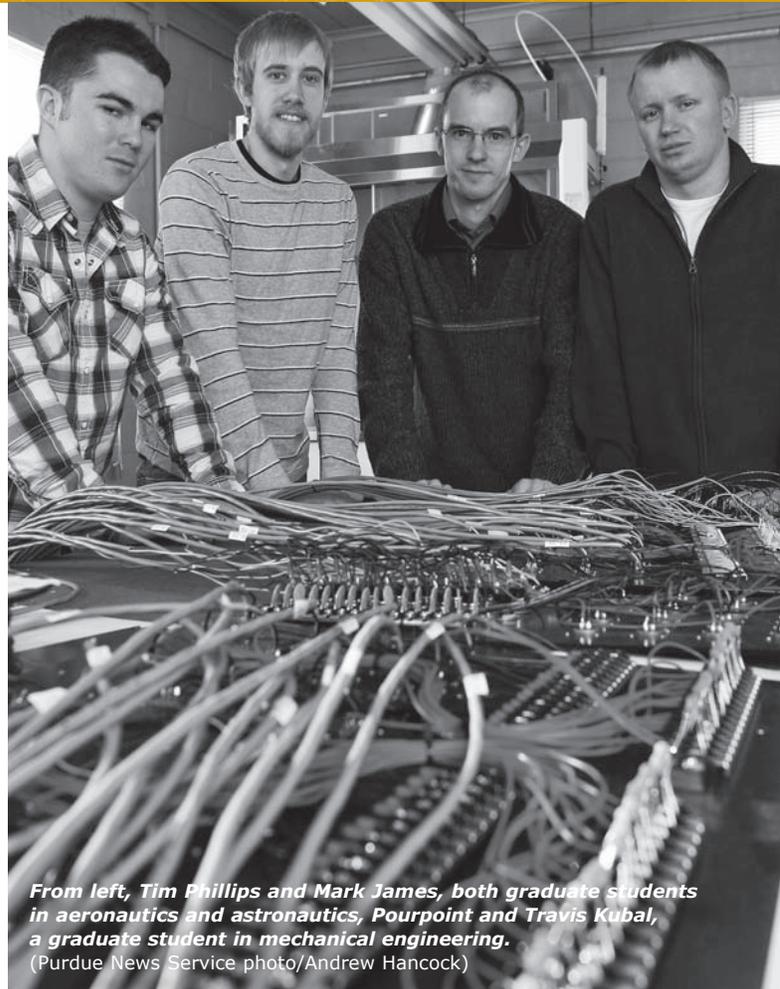
"This is a very multidisciplinary project," said **Stephen Heister**, the Purdue University professor of aeronautics and astronautics who is leading one of two teams on the project, which is funded by the U.S. Army Research Office.

"Gels are inherently safer than liquids because they don't leak, and they also would allow the military to better control rockets than is possible with solid fuels now used. Motors running on gelled fuels could be throttled up and down and controlled more precisely than conventional rockets that use solid propellants," Heister said.

"You can turn the engine on and off, you can coast, go fast or slow," he said. "You have much greater control, which means more range for missiles. The gelled propellants also tend to have a little more energy than the solid propellants." Gelled fuels also could be used in thrusters to position satellites and on NASA space missions.

Timothée Pourpoint, a research assistant professor of aeronautics and astronautics, is in charge of designing and operating a new Purdue lab to test the gelled rocket fuels. He joined the school as a new faculty member in fall 2008 and he completed his Ph.D. in the School of Aeronautics and Astronautics in December 2005.

As he was completing his Ph.D. requirements, Pourpoint led the development of the Integrated Gas Turbine Combustion Facility at the Maurice Zucrow High Pressure Laboratory. Over the last five years, he has been involved with the design, operation, and upgrade of several high-pressure systems used in the aerospace and automotive industries, including many rocket engine testing



From left, Tim Phillips and Mark James, both graduate students in aeronautics and astronautics, Pourpoint and Travis Kubal, a graduate student in mechanical engineering. (Purdue News Service photo/Andrew Hancock)

programs. He has published several papers on the development and use of test facilities.

The team includes researchers from mechanical engineering, aeronautics and astronautics, food science, and agricultural and biological engineering at Purdue, as well as researchers from Iowa State University and University of Massachusetts.

AAE Prof honored at 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference



The American Institute of Aeronautics and Astronautics (AIAA) and the American Society for Composites (ASC) congratulate the winners of the inaugural AIAA-ASC James H. Starnes, Jr. Award, Raphael T. Haftka, Distinguished Professor of Mechanical and Aerospace Engineering at the University of Florida, and **C. T. (Chin-Teh) Sun**, Neil A. Armstrong Distinguished Professor of Aeronautical and Astronautical Engineering at Purdue University.

The award was presented at an awards luncheon on May 6, as part of the 50th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, held at Palm Springs, Calif.

The AIAA-ASC James H. Starnes, Jr. Award is presented to recognize

continued significant contribution to and demonstrated promotion of the field of structural mechanics over an extended period of time emphasizing practical solutions, to acknowledge high professionalism, and to acknowledge the strong mentoring of and influence on colleagues, especially younger colleagues. The award commemorates James H. Starnes Jr., a leader in the fields of structures and materials.

Sun is being recognized for four decades of unparalleled contributions to composite materials research, scholarly publications, and professional activities, and for his mentoring of students. He received his undergraduate education at the National Taiwan University, obtained a Ph.D. in 1967 from Northwestern University, and joined the faculty at Purdue University in 1968. His research interests include composite materials, fracture mechanics, and nanostructured materials.

WELCOME NEW FACULTY MEMBER

Dr. Vikas Tomar



Dr. Vikas Tomar will join the School as Assistant Professor at the beginning of the fall semester.

Dr. Tomar received his PhD from the Georgia Institute of Technology in December, 2005. Thereafter, he has been working as an assistant professor of the Aerospace and Mechanical Engineering Department at the University of Notre Dame, IN.

His research focus is on molecular and continuum modeling combined with some degree of characterization of failure in nanostructured as well as microstructured ceramic composites, quantum dots, and ceramic hybrid systems and materials. Recent focus include coupling of thermal, electrical, photo, and mechanical behaviors.

Through his research, he hopes to make fundamental contributions for advancements in the field of material and systems for aerospace, energy, and medicine. He has written numerous technical articles including 23 journal publications, 1 book chapter, 1 edited journal special issue, and 1 edited volume on conference proceedings.

Funding for his work has come from the National Science Foundation, the Department of Energy, the Army, and the Air Force Office of Scientific Research (AFoSR). Recent honors include AFoSR Young Investigator Award for year 2009. With research, Dr. Tomar has significantly invested in teaching and outreach activities including establishing a pre-engineering program at West Side High-School in Gary, IN.

Faculty Update

W. A. Gustafson Teaching Award 2008-2009

Congratulations to **Professor Thomas N. Farris** for winning this year's W.A. Gustafson Teaching Award. The award is for student recognition of teaching activities and voting for this nomination is by all students with junior and senior standing. Thomas Farris is now the School's nominee for the campus wide Murphy Outstanding Undergraduate Teaching Award 2008. Additional faculty members receiving votes included **Professor James Longuski**, **Professor Terrence Weisshaar** and **Professor Kathleen Howell**.



Elmer F. Bruhn Teaching Award 2009

Presented annually to an Outstanding Teacher in the Purdue University School of Aeronautics and Astronautics, selected by the undergraduate student body for excellence in teaching and made possible by the interest and generosity of friends and alumni of the school.

Professor William Crossley is this year's winner of the **Bruhn Award**.

Other top candidates for the Bruhn Award were; **Professor Tom Farris**; **Professor Kathleen Howell**; **Professor Inseok Hwang** and **Professor Skip Grandt**.

Congratulations to all for this recognition of their teaching efforts.



PROMOTION

Congratulations also to Prof. Bill Crossley who is promoted to Professor, effective summer 2009. This promotion recognizes his professional achievement and for the recognition that his accomplishments bring to the school.

Book of Great Teachers

The names of 49 Purdue University professors were added to the Book of Great Teachers, which honors outstanding teaching faculty who have demonstrated sustained excellence in the classroom.

Purdue President France A. Córdoba and Provost Randy Woodson recognized the honorees at the August 28 induction which occurs once every five years.

AAE Professors **Steven Collicott** and **James Longuski** were honored at this ceremony. To be included in the Book of Great Teachers, professors and former professors must have served on the Purdue faculty at least 10 years. Honorees include past recipients of university wide teaching excellence awards and those nominated by students, alumni and colleagues.

"These professors are passionate about teaching and are making a difference in the lives of students both inside and outside the classroom," Woodson said. "This honor reflects our commitment to excellence in teaching and the faculty that embody this every day."

The book, a bronze and walnut wall display in the west foyer of the union, was first unveiled in 1999 with 225 current and former faculty honorees. The last ceremony was held in 2003, when 42 faculty members were added to the book.



Dr. Steven Collicott and Dr. James Longuski

College of Engineering Awards of Excellence – Two AAE Faculty Honored

Professor James Longuski was honored with the College of Engineering wide Dean A.A. Potter Best of Engineering Teaching Award.

The seventh annual Awards of Excellence took place on April 25 at the Ross-Ade Stadium on the West Lafayette campus. Voted for by the students, Longuski has long brought real-world examples and experience to the classroom.

He draws on his nine years of experience working at the Jet Propulsion Laboratory on Project Galileo's mission to Jupiter, and has challenged his students to design robotic missions to Europa (an icy moon of Jupiter), as well as human missions to Mars.

His book, *Advice to Rocket Scientists*, provides plainspoken language that helps prepare students to develop leadership skills, work better in teams, and to communicate more effectively. Longuski's accessibility, in both formal and informal settings, allows students to seek his advice on both their studies and career opportunities. This award is representative of their appreciation.



**Professors
James
Longuski
and Alina
Alexeenko**

Professor Alina Alexeenko is part of the award winning PRISM Team: The Team Excellence award is to recognize and encourage teamwork or multidisciplinary efforts by faculty and staff in the College of Engineering.

PRISM is the Purdue University center for Prediction of Reliability, Integrity and Survivability of Microsystems. Its mission is to improve the long-term reliability of micro-electro-mechanical systems, or MEMS. Prof. Alexeenko's group has developed fast computational algorithms and solvers that allow the study of unusual aerodynamics in micron-sized MEMS devices. The PRISM researchers apply such simulations to understand the reasons MEMS fail and how to improve their long-term performance. This will greatly expand their use in a wide variety of consumer and military applications.

Tippy Connect Young Professional Make a Difference

Timothée Pourpoint, Research Assistant Professor, was honored on April 21st as one of Tippy Connect's top 10 professionals under 40 that live and work in the Lafayette, Indiana area.

Tippy Connect was started in 2006 to help young people network and build relationships with other professionals in their age groups. The professionals nominated were between the ages of 22 and 39 and 60 people were nominated for this award.



Entrepreneurial leaders represent variety of disciplines at Purdue

Professor James Garrison is one of eleven selected as members of the 2008 Entrepreneurial Leadership Academy. The program brings faculty together with business innovators and introduces entrepreneurship ideas in the classroom.

The academy, which inducted its first class last year, is part of the Kauffman Campuses Initiative at Discovery Park's Burton D. Morgan Center for Entrepreneurship and also is supported by the Susan Bulkeley Butler Center for Leadership Excellence.

Academy members are nominated by deans and department heads, and selected by the Leadership Academy oversight committee. New members participate in a series of faculty workshops, lunches, dinners and meetings for networking, brainstorming and discussing development of Purdue's entrepreneurial curricula and activities.

Each faculty participant in this year's academy will receive a \$5,000 award to be used for entrepreneurship projects or research.

Selection criteria include the scholar's proposal for contributing to the entrepreneurial culture at Purdue



and the fit between the proposal and the goals of the Burton D. Morgan Center for Entrepreneurship and Discovery Park. The scholar also participates in the development of the agenda and the activities for the academy the following year.

Prominent Alumni donates papers to Purdue University

Two prominent Purdue Alumni have donated personal papers that will serve as historic archives and scholarly resources.

Purdue Astronaut alumni **Neil A. Armstrong BSAE'55, DEA'67, HDR'70, OAE'99** and **Eugene A. Cernan BSEE'56, HDR'70, OECE'92** have both donated personal papers to Purdue Libraries Archives and Special Collections.

Announced by University President France A. Córdoba on November 1, 2008, Córdoba, an astrophysicist who served as the first female chief scientist at NASA, said the Apollo 11 mission inspired her. "It's also fitting," she said, "that the donations come as NASA marks its 50th anniversary this year by celebrating past achievements and looking to the future."

Armstrong graduated from the School of Aeronautics and Astronautics in 1955 with a bachelor's degree in aeronautical engineering. The papers represent his personal files and date to the beginning of his career.

Córdoba said, "Neil Armstrong - through the gift of his papers - has made our university the focal point for scholars who wish to study the space program and his historic achievements. Future historians, researchers, students and explorers will benefit from the Purdue-Armstrong connection."

In 1962, Armstrong was selected as an astronaut and served as command pilot for the Gemini VIII mission, launched March 16, 1966. He piloted the first ever successful docking of two vehicles in space.

Later came the flight for which he is most remembered. On July 16, 1969, Armstrong and fellow astronauts Edwin "Buzz" Aldrin and Michael Collins lifted off for the Apollo 11 mission with Armstrong commanding. Four days



(Left) Neil Armstrong and Eugene Cernan during their time working with NASA.

(Above) Neil Armstrong and Eugene Cernan during the dedication of the Neil Armstrong Hall of Engineering-October 27, 2007

Eugene A. Cernan, BSEE'56, HDR'70, OECE'92, the most recent person to walk on the moon, is also donating his personal papers to the university's flight archives.

Cernan graduated from Purdue in 1956 with a bachelor's degree in electrical engineering and was commissioned through the university's ROTC program. He entered flight school after graduating, and in 1963 received a master's degree in aeronautical engineering from the U.S. Naval Postgraduate School.

He carried out three space flights. As a pilot aboard Gemini IX in 1966, he became the second person to walk in space. He was a lunar module pilot for the Apollo X mission in 1969.

As commander of Apollo XVII in 1972, he became the most recent person to walk on the moon's surface. He wrote his autobiography "The Last Man on the Moon."

To date, 22 Purdue alumni have been chosen for space flight. Purdue is known as the "cradle of astronauts," and its alumni have flown on more than one-third of all manned U.S.

later, Armstrong and Aldrin climbed into the lunar-landing module Eagle as Collins orbited in the command module Columbia.

Armstrong would later recall that landing safely on the moon was a big concern because of the many unknowns. As they closed in on the surface, alarms sounded - it was determined that Eagle's computer was trying to do too many things at once - and by the time Armstrong maneuvered the landing module past an area littered with boulders to find a spot to land, only 30 seconds of fuel remained. As the craft safely landed on the surface, he transmitted, "Houston, Tranquility Base here. The Eagle has landed." Mission control erupted in celebration.

The acquisition of the papers follows the university's October 2007 dedication of the Neil Armstrong Hall of Engineering. A plaque there commemorates the most famous phrase in space history, proclaimed by Armstrong as he stepped foot on the moon. The plaque reads: "That's one small step for a man, one giant leap for mankind."

NEW STORAGE SYSTEM DESIGN

brings hydrogen cars closer to reality

Researchers including Dr. **Timothée Pourpoint** research assistant professor of aeronautics and astronautics and manager of the Hydrogen Systems Laboratory have developed a critical part of a hydrogen storage system for cars that makes it possible to fill up a vehicle's fuel tank within five minutes with enough hydrogen to drive 300 miles.

The system uses a fine powder called metal hydride to absorb hydrogen gas. The researchers have created the system's heat exchanger, which circulates coolant through tubes and uses fins to remove heat generated as the hydrogen is absorbed by the powder.

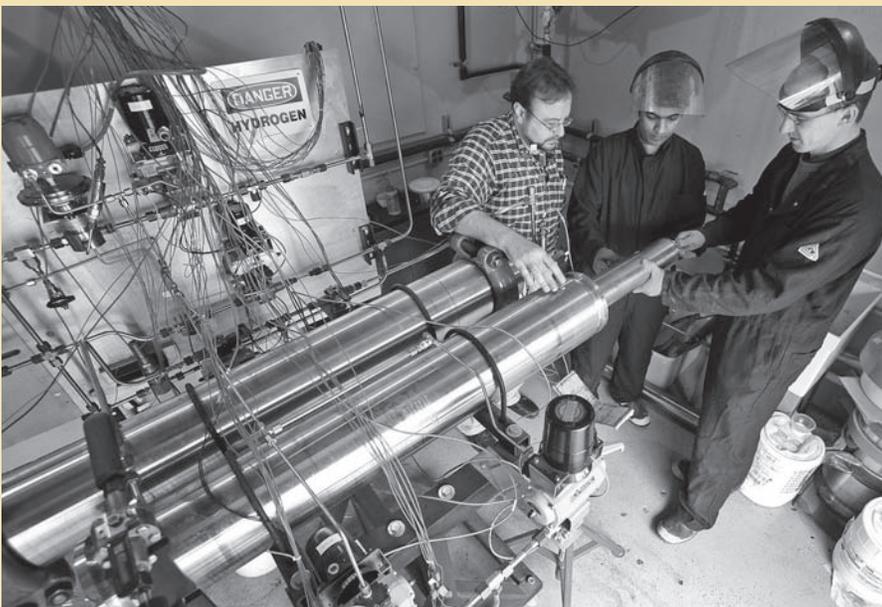
Without cooling, it would take a minimum of 40 minutes to fill the tank and the researchers envision a system that would enable a car to be filled with hydrogen within a few minutes. The hydrogen would then be used to power a fuel cell to generate electricity to drive an electric motor.

The research, funded by General Motors Corp. is based at the Hydrogen Systems Laboratory at Purdue's Maurice J. Zucrow Laboratories. In February, the team applied for three provisional patents related to this technology.

The metal hydride is contained in compartments inside the storage "pressure vessel." Hydrogen gas is pumped into the vessel at high pressure and absorbed by the powder.

This process is reversible, meaning the hydrogen gas may be released from the metal hydride by decreasing the pressure in the storage vessel. The heat exchanger is fitted inside the hydrogen storage pressure vessel. Due to space constraints, it is essential that the heat exchanger occupy the least volume to maximize room for hydrogen storage. Conventional automotive coolant flows through a U-shaped tube traversing the length of the pressure vessel and heat exchanger. The heat exchanger, which is made mostly of aluminum, contains a network of thin fins that provide an efficient cooling path between the metal hydride and the coolant.

The researchers have developed the system over the past two years. Research activities at the hydrogen laboratory involve faculty members from the schools of aeronautics and astronautics, mechanical engineering and electrical and computer engineering.



Issam Mudawar, from left, a Purdue professor of mechanical engineering, graduate student Milan Visaria and Timothée Pourpoint, (Purdue News Service photo/Andrew Hancock)



The "Gateway to the Future Arch"

Alumni from two Purdue classes helped dedicate a new campus landmark and announced a gift for scholarships at Purdue's Homecoming on October 25.

The "Gateway to the Future" arch, located near the Neil Armstrong Hall of Engineering is a gift to the university from the classes of 1958 and 1959.

The classes raised \$750,000 to create the arch, as well as more than \$250,000 for student scholarships, to commemorate the 50th anniversary of each class's graduation from Purdue.

"This archway and these scholarships will provide a lasting legacy of the classes of 1958 and 1959," Purdue President France A. Córdoba said. "I would like to thank them for their generosity. These gifts demonstrate Purdue's strong links to its alumni, who are paying their successes forward to future generations."

The scholarship gifts are part of Purdue's \$304 million Access and Success campaign to expand student aid and programs. To date, Purdue has raised more than \$69 million toward the campaign goal.

The archway base consists of two 27-foot-tall columns constructed of Indiana limestone. The columns are crowned with brass lanterns with glass lenses. Each lantern is nearly five feet tall. The steel arch runs between the two columns. Upper-case letters, painted black, spell out "Purdue University" along the arch. Concrete pavers and landscaping decorate the ground below and around the arch. Fred Ford, a class of 1958 alumni, and Ben Miller, a class of 1959 alumni, co-chaired the Gateway to the Future committee. Ford said the two classes worked on the project for nearly 10 years. Miller said he is hopeful the arch will become a campus hallmark. "We think it will be a great meeting point, a place people will recognize and gather," Miller said. "We want our gateway to be a place where students and families will be saying, 'Meet you at the arch.'"



(L-R) Kevin Welsch BSEET'98, Sam Stauffer, BSEE'77, Mike Dreessen, BSAAE'83, IAC member, Paulina Rabczak, BSAAE'07, Bill Gast, BSAAE'91

Alumni deliver Nano-Satellites

Miltec Corporation in Huntsville, AL, delivered eight four-kilogram nanosatellites to the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command (USASMDC/ARSTRAT) in Huntsville, Alabama on April 28, 2009. This delivery marks the completion of the first U.S. Army satellite development program since the Courier 1B communications satellite in 1960.

The first SMDC-ONE nanosatellite will be placed into orbit in 2009 and the remaining seven at a later date. Each of these nanosatellites can be placed into a Low Earth Orbit to receive data files from a ground command and control center. The ground station for the first SMDC-ONE demonstration will be at USASMDC/ARSTRAT on Redstone Arsenal, Ala. The primary objective will be to receive data from multiple ground transmitters and relay that data to a ground station. The intent of this technology demonstration is to build a number of identical satellites and deploy them together into Low Earth Orbit to simulate enhanced tactical communications capability and evaluate nanosat performance.

SEDS Spring Space Forum Explores future of NASA, private spaceflight companies

Purdue alumni shared their insights into the future of space exploration during the 2009 Spring Space Forum on April 24.

Dan Dumbacher BSME'81 and John Gedmark BSAAE'03 took part in the Students for the Exploration and Development (Purdue SEDS) Space Spring Space Forum on the West Lafayette campus.

Dan Dumbacher, director of the Engineering Directorate at NASA's Marshall Space Flight Center in Huntsville, Ala., spoke of NASA's plans for exploration after the retirement of the space shuttle in 2010 and offered a glimpse into the potential missions and capabilities of the space agency's next generation of vehicles, the Ares rockets.



Dan Dumbacher and John Gedmark

John Gedmark is executive director of the Personal Spaceflight Federation and he discussed the prospects of space tourism and the potential benefits of commercial spaceflight to science and education. The federation is an industry association of businesses and organizations working to make commercial human spaceflight a reality.

The forum, organized by Students for the Exploration and Development of Space, provides an opportunity for students, faculty and the public to engage in a forum-style discussion of issues relating to the space industry. The directors for this event were Drew Damon and Tim Duquette. The forum is sponsored by the School of Aeronautics and Astronautics and the Purdue Engineering Student Council.

Aeronautics and Astronautics Alumni Reception

The School of Aeronautics and Astronautics held an alumni reception on December 17, 2008 in Long Beach, CA.

Hosted by Professor and Head of School Dr. Thomas N. Farris, the evening was a huge success with many alumni meeting up and networking. Dr. Farris also provided an update on the current events connected with the School of Aeronautics and Astronautics at Purdue University.



(L-R) Paul Kelly, Les Hromas, Bobbi Hromas & Grant Hosack



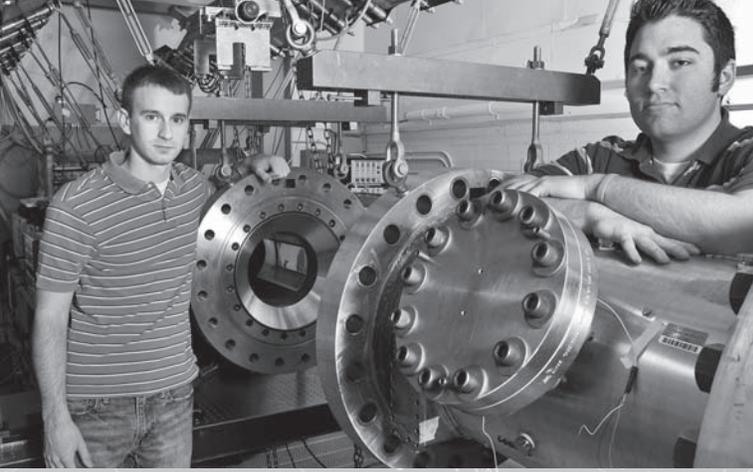
Amanda Briden & Chris Ballard



Hal Clark & Dale Smith



Joe Caravella & Aaron Sippel



Graduate students Brad Wheaton, left, and Peter Gilbert,
(Purdue News Service photo/Andrew Hancock)

Space shuttle experiment to provide insights into turbulence, heating

AAE professor Dr. Steven Schneider helped shape plans to install a new experiment on the space shuttle *Discovery* to collect data for controlling deadly friction and heating in the design of future spacecraft.

STS 119 *Discovery* was launched March 15 on a 13-day mission with a special "roughness element" installed among the shuttle's heat-shielding panels. The element is raised about a quarter of an inch and will be used to study how air turns from "laminar," or smooth, to turbulent. Data from the research will help design the heat shield for NASA's Orion crew exploration vehicle, a vital component in future missions to the moon and Mars.

Data from the experiment also will help engineers design "hypersonic" aircraft that travel faster than Mach 5, nearly 4,000 mph. The faster an aircraft flies, the greater the friction and dangerous heating. Such heating damaged the leading edge of the heat-shielding system on the space shuttle *Columbia*, causing it to burn up as it entered the atmosphere in 2003.

Data was collected when the shuttle re-entered the Earth's atmosphere at the conclusion of the mission on March 28.

Purdue researchers also are using the only wind tunnel capable of running quietly at hypersonic speeds and have conducted experiments to yield data for designing advanced missiles such as the Falcon HTV-2 and an advanced aircraft called the X-51A, which is powered by scramjets. The X-51 project is led by the Air Force Research Laboratory and the Defense Advanced Research Projects Agency.

Purdue's wind tunnel, which has been funded by the Air Force Office of Scientific Research, NASA, Sandia National Laboratories, the Ballistic Missile Defense Organization and the Boeing Co., is named the Boeing/AFOSR Mach 6 Quiet Tunnel. The quiet wind tunnel operation is critical for collecting data to show precisely how air flows over a vehicle's surface in flight. No other wind tunnel runs quietly while conducting experiments in airstreams traveling at Mach 6.

The experiment on *Discovery*, which also is planned for two additional shuttle missions, will complement wind tunnel experiments and findings from computational models.

CARAVELLA AEROSPACE "Developing an affordable roadable aircraft"

Joe Caravella BSAE'93, MSAE'96 left Rocketdyne in 2006 and started Caravella Aerospace in 2007.

Joe is currently developing a roadable aircraft called the CaraVellair. The reverse tricycle single seat vehicle will be registered both as a motorcycle and an experimental aircraft. Caravella Aerospace's design calls for a lightweight single engine that powers both the motorcycle and a rear-mounted propeller from an enclosed cockpit.

The CaraVellair has a tri-fold wing design and the tail boom fully retracts. The power for both flying and driving comes from a 1000cc sports motorcycle. Aimed at commuters, he aims to have it available in kit form for less than \$50,000 and he sees cost as a key advantage for the CaraVellair. The CaraVellair's design goal will be a 1,300lb maximum takeoff weight so that it can comply with the LSA rules.

Caravella spent months working in his garage and driveway with dad, Joe Sr. to finish the non-flying full-scale mock-up of the CaraVellair which was displayed at AirVenture 2008 in Oshkosh, Wisconsin. (See below) The plan is to complete a flying driving prototype for presentation at EAA AirVenture 2010 in Oshkosh, WI.

This new breed of inventors deliberately discourages the label "flying cars" and the preferred terminology is "roadable aircraft." A good example would be a vehicle you drive to the airport, convert it to a plane and fly off to your destination, land, convert back and drive to your ultimate destination.



Purdue Alumni Association iGoogle themes

The Purdue Alumni Association has recently created various iGoogle themes for use by alumni, friends, and students.

All the developed themes can be found on www.purduealum.org

The one of Armstrong Hall can be found at:

<http://www.google.com/ig/directory?hl=en&type=themes&sort=newest&start=56&url=purduealum.org/igoogle/campusshots/armstrongHall.xml>

Congratulations to our 2008-2009

graduates

During the 2008-09 school year, the School of Aeronautics and Astronautics awarded 122 BSAE degrees, 53 MS degrees, and 19 Ph.D. degrees.

Congratulations to all of our graduates.

August 2008

B.S. CANDIDATES

Daniel Chua
Colby Darlage
Kevin Lobo
Kathryn Mitchell
Christopher Sutton
Brandon Washington

M.S. CANDIDATES

Hadi Ali
Richard Berger
Jimmy Chiu
Dawn Gordon
Michael Hannon
Lucia Irrgang
Matthew Lossmann
James Moss
Ki Sun Park
Yury Pensky
Robert Salek
Daniel Samson
Adam Trebs

PH.D. CANDIDATES

Ashfaq Adnan
Matthew Gean
Joon-Ho Lee
Nicholas Pearson
Juan Portillo
Sreeram Srinivasan
William Stein
Erick Swanson
Ching-Yao Tang

December 2008

B.S. CANDIDATES

Theodore Adams
Jerald Balta
Sean Bhise
Michael Bociaga
Daniel Breeden
Kyle Brite
Phillip Catania
Shu Sum Sumkie
Chan
Ford Creighton
Bret Cunningham
Matthew Deal
Kyle Donahue
Brian Downard
Andrew Foor
Nicholas Grider
Oscar Guzman
Dustin Haas
Christopher
Hanrahan
Christopher Heath
Thomas Horan
Jennifer Jackson
Ahmad Faizal
Kamaruddin
Molly Kane
Nathan Kelsey
Hayne Kim
Jonathan Kirkegaard
Ryan Lash
Patrick Leahy
Timothy Lorenzana
Timothy Ma
Timothy Manship
Kurt Mitchell
Stephanie Morris
Shira Okon
Mark Pfeil
David Predis
Andrew Price
Michael Procelli

Justin Rhodes
Aaron Robinson
Gerardo Salazar
Jonathan Seagle
Stephanie Simerly
Karrie Stewart
Jeffrey Stuart
Jennifer Stump
Ruan Trouw
Nicholas Vazquez
Michael Walker
Jason Wirth
Erik Wolf

M.S. CANDIDATES

Todd Brown
Christopher Bush
Leo Coduti
Matthew Conway
Shayani Ghose
Syed Hassan
Sravan Dherraj
Kapilavai
Matthew
Kube-McDowell
Eric Leonard
Paul Moonjelly
Kamlesh Nankani
Daniel Pothala
Christopher Selby
Jonathan Shearer
Nathan Tate
Daniel Uffelman
Matthew Vavrina
Jia Zhao

PH.D. CANDIDATES

Wisuwat Bhosri
Zhaoxu Dong
Muharrem Mane
Arun Subramanian





May 2009

B.S. CANDIDATES

John Aitchison
 Kara Akgulian
 Bradley Appel
 Akshay Ashok
 Muhammad Azmi
 Diane Barney
 Donald Barrett
 Zarinah Blockton
 Levi Brown
 Jeffery Burkett
 Anthony Cofer
 Michael Coffey
 Jonathon Coughlin
 Andrew Damon
 Stephen Day
 John Dixon
 Joshua Elmshaeuser
 Adham Fakhry
 Gregory Freeman
 Marques Fulford
 Jacob Gedrimas
 Mark Glover
 Andrew Grimes
 Mark Guiles
 Nicholas Gurtowski
 Thaddaeus Halsmer
 Motohide Ho
 Victoria Huff
 Gregory Huffman
 Poorvi Kalaria
 Mintae Kim
 Jeffrey Knowlton
 Nithin Kolencherry
 Nixon Lange
 Korey Le Mond
 Kelly Leffel
 Ryan Lehto
 Kevin Lincoln
 Bryan Loveless
 Joshua Lukasak
 Romain Maire
 Patrick Marrinan
 Caitlyn Mc Kay
 Michael Mc Peake
 Andrew Mizener
 Trenten Muller
 Ryan Nelson
 Tara Palmer
 Sanjeev Kumar
 Ramaiah
 Timothy Rebold

Jared Scheid
 Steven Skare
 Eric Smith
 Saad Tanvir
 Christine Troy
 Jessica Vandenburg
 Andrew
 Vandendriessche
 Brittany Waletzko
 Richard Wang
 William Weber
 Solomon
 Westerman
 Alexander Whiteman
 Jack Yang
 Michael Zander
 Christopher Zaseck

M.S. CANDIDATES

Venkattraman
 Ayyaswamy
 Ryan Blank
 Cornelius Cummings
 Brian Erickson
 Seung Yeob Han
 Chil-Jyh Hiu
 Kay Johnson
 Jesse Jones
 Pankit Kotecha
 Kevin Kwan
 Wei-Nan Lin
 Nizam Md Ishak
 Linnea Ohlsson
 Alexis Palewicz
 Timothy Phillips
 Andrew Ritchey
 Aparna Rupakula
 Alex Sandroni
 Andrew Schlueter
 Seth Skube
 Prashant Tatineni
 Kelly Walsh

PH.D. CANDIDATES

Xiaohui Guo
 Phoi-tack Lew
 Marriner Merrill
 Chze Sea
 Narayan Sundaram
 Yen Ching Yu

STUDENT *awards*



Herbert F. Rogers Scholarship
Levi Brown



Magoon Award Winners
Chris Patterson, Liaquat Iqbal,
George Pollock, Bhawesh Kumar,
Amanda Schmidt (not pictured)



David O. and Linda Schimmel Swain Scholarship
Timothy Rebold, Aamod Samuel,
Brittany Waletzko, Robert McCabe,
Itanza Wright (pictured here with
David and Linda)

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



**Spring 2008
First Place
Team**

Pete Psaras, Isaac Detrinidad, Phil Stout,
Ian Meginnis, Allissa Battocletti, and
David McGrath (Not pictured Clarice Masaki)



**Fall 2008
First Place
Team**

Mars and Return Final Mission Proposal:
Konrad Habina, Phil Mazurek, Christopher
Mueller, Brian Clegg, and Evan Helmeid



International Year of Astronomy - Student Ambassador

AAE student **Courtney McManus** has been named NASA Student Ambassador for the International Year of Astronomy - a world-wide effort from the International Astronomy Union and UNESCO to commemorate the 500th anniversary of Galileo's first telescope and to promote space and astronomy education throughout the world.

The NASA IYA Student Ambassador program is designed to encourage undergraduate and graduate students to participate in IYA activities. In addition to other programs, Courtney will also be working with Purdue Space Day in fall 2009 to generate excitement about scientific discoveries in astrophysics, planetary science and solar physics.



**Courtney
McManus**



Purdue Forever Fellowships

(L-R) Geoffrey Wawrzyniak, Kristin Gates Medlock, Diane Craig Davis, Erik Dambach

Warren G. Koerner Scholarship

Kristopher Ezra, Christopher Heims, Brandon Kan, Daniel O'Brian, David Repogle, Pamela Slaughter, Christopher Spreen

Donald C. and Marion E. Currier Scholarship

Steven J. Murphy

Astronaut Scholarship Foundation Award

Timothy Duquette

John and Patricia Rich Scholarship

Michelle Kidd, Dean Bryson, Andrew Ritchey

Orrin Arthur Austin Memorial Scholarship

Solomon Westerman

David L. Filmer Scholarship

Paul Moonjelly

Arthur S. Remson Memorial Scholarship

Brad Appel, Paul Frakes & Stephen Lundry

Space Shuttle Memorial Scholarship

Drew Crenwelge & Christopher Spreen

NASA Fellowship

Annelise Lenz

2008 AIAA Wright Brothers Graduate Award

Brain Pomeroy



The Marc Christopher Weaver Memorial Scholarship

Rebecca Johanning

Zonta Fellowship

Diane Craig Davis

Peter Mueller Memorial Scholarship

Katherine Brumbaugh

Andrea Chavez Scholarship

Elizabeth Schwartz

NDSEG Fellowship

(National Defense Science & Engr):

Amanda Chou

Bilsland Strategic Initiatives Fellowship

Dan Grebow

NASA Special Achievement Award

Stephanie Johnston

Capt Iven C. Kincheloe Scholarship

Anthony Braun, Anthony Cofer, Rajat Dua, Christopher Heath, Mintae Kim, Tuan Nguyen, Mark Pfeil, Ujjwal Poudel, Nicholas Stallings

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 **Christine Troy.**

AAE Students Compete in NASA CUIP Video Contest

"Our Place in Space: Propulsion at Purdue"

A group of aspiring Purdue students participated in NASA's Constellation University Institutes Project (CUIP) Video Contest. CUIP is a consortium of 24 universities working with NASA

to develop innovative ideas on how to test Constellation's new rockets, the Ares I and Ares V.

Ares I will launch the Orion crew exploration vehicle to the International Space Station and on to the moon, while Ares V provides heavy lift capabilities for large payloads. CUIP is cultivating the next generation of engineers that could take NASA on this journey, and these students are rising up to the challenge.

The teams work to address some of the technical issues of space access and exploration, including rocket stability and high performance, inexpensive solid propellants. Such issues are critical to the development of Constellation's spacecraft, and these aspiring rocket scientists rise to the challenge.

As part of this experience, the team submitted a video highlighting the work they do.

NASA has chosen their team to be highlighted on their web site along with the University of Alabama -Huntsville. The team consists of: David Helderman, Yen Yu, Nicholas Nugent, Mauritz deRidder, John Tsohas, and Randy Smith.

The link can be found at: http://www.nasa.gov/mission_pages/constellation/stars/profiles/cuip_purdue.html



Yen Yu

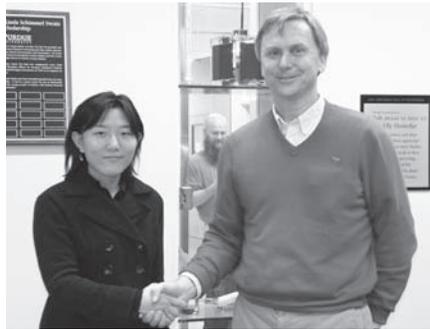
STUDENT *awards*



School of Aeronautics and Astronautics Outstanding Graduate Student

Marriner Merrill (pictured here with his family)

Marriner was the Student Responder on behalf of the College of Engineering at the May 2009 commencement ceremonies



Nominee for Chorafas Foundation Award & Bilsland Dissertation Fellowship 08-09

Xiaohui Guo



(L-R) Saad Tanvir, Prof. Li Qiao, Allen Yan, Prof. Ivana Hrbud, Prof. James Longuski, Joseph Gangestad, Prof. Steven Schneider and Matthew Borg. (Bradley Wheaton – not pictured)

AAE Research Symposium

The 2008 AAE Research Symposium Series awards are given to recognize excellence in technical presentation skills.

- *First place* – Joseph Gangestad
- *Second place* – Matthew Borg
- *Third place* – Allen Yan
- *Best undergraduate presentation* – Saad Tanvir
- *Best Abstract* – Bradley Wheaton

The Research Symposium Series is a department-sponsored forum for graduate students and advanced-level undergraduates to present their research to a general audience. Feedback is provided to all presenters both by the audience and symposium judges. This symposium has been held each week during the Fall Semester for the past 7 years.



Louis Sudler Prize in the Arts - **Andrew Damon** received the \$1,000 Louis Sudler Prize in the Arts for an outstanding senior who has demonstrated excellence and the highest standards of proficiency in the visual or performing arts.

Damon has played lead alto saxophone as a four-year member of the Purdue Jazz Band and also has played in the Symphonic Band and Jazz Combo. He spent two summers as an intern at NASA's Marshall Space Flight Center in Huntsville, Ala. The award is endowed by the late Louis Sudler, a Chicago businessman and supporter of the arts.



Geoff Wawrzyniak was selected, as one of sixteen graduate students nationwide, as a NASA student representative to the 2008 International Astronautical Congress (IAC) in Glasgow, Scotland. An event sponsored by the International Astronautical Federation, the Congress was held September 29-October 3. Geoff presented a paper at the Congress and participated in a number of events including a meeting between students and senior agency representatives from

the different worldwide space agencies.



Erik Dambach attended the 6th Modeling and Simulation Subcommittee (MSS)/4th Liquid Propulsion Subcommittee (LPS)/3rd Spacecraft Propulsion Subcommittee (SPS) joint technical meeting which took place during the week of December 8-12, at the Hilton Walt Disney World Resort located in Orlando, Florida.

The SPS recognized Erik for his 2007 paper

"An Investigation into the Hypergolicity of

Dicyanamidebased Ionic Liquid Fuels with Common Oxidizers."

He was presented with a certificate for his achievement.

School of Aeronautics and Astronautics Outstanding Senior

Tim Duquette



Tim was also named an **Astronaut Scholar for the 2008-2009** year by the prestigious Astronaut Scholarship Foundation which supports only 19 students annually across the country. Founded by the six surviving astronauts of the Mercury 7 program, the scholarship is a way to promote continued science and technology research in the U.S.



ASTRONAUT SCHOLARSHIP FOUNDATION

CREATED BY THE MERCURY 7 ASTRONAUTS

As the recipient of the Astronaut Scholarship Foundation award for 2009-2010, graduating senior **Timothy Duquette** attended the 2009 Astronaut Hall of Fame Induction Gala at the Apollo Saturn V Center on May 1-2, 2009.

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.

More than 70 astronauts from the Mercury, Gemini, Apollo, Skylab, and Shuttle programs actively fundraise through paid appearances, special events, corporate and individual donations.

Tim is the 18th recipient from Purdue to be named as Astronaut Scholar with 14 coming from the School of Aeronautics and Astronautics.

Scott Tamblyn (1990-1992)
BSAAE 1992

Matthew Szolwinski (1992-1993)
BSAAE 1993, MSAAE 1995, PhD 1998

Doug Adams (1993-1994)
BSAAE 1994, MSAAE 1996, PhD 2001

Virginia Anthes (1994-1995)
BSAAE 1995

Belinda Marchand (1996-1997)
BSAAE 1997, MSAAE 2000, PhD 2004

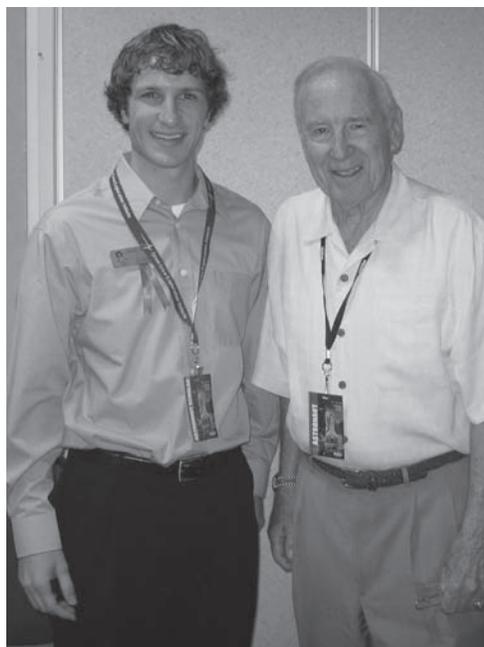
David McKinley (1997-1998)
BSAAE 1998

Theresa Debban Kowalkowski (1998-2000)
BSAAE 2000, MSAAE 2002

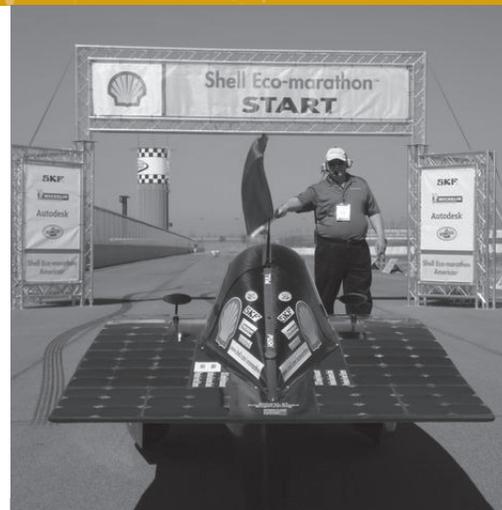
Jayleen Guttromson (2003-2005)
BSAAE 2005

Christine Troy (2007-2008)
BSAAE 2009

Timothy Duquette (2008-2009)



Tim Duquette and James Lovell at the Gala



Purdue Solar Racing

The Purdue Solar Racing Team took part in the Shell Eco-Marathon 4 day event held in April 2009. They placed first in the solar division and were the most efficient vehicle at the competition. Their final fuel equivalency was 4,915MPG, which is nearly double their achievement from last year.

The team has been in several press releases including an article in the *Lafayette Journal and Courier*. Due to support from the School of Aeronautics and Astronautics, the team was able to make several significant changes this year to pulsar including new brakes, a new steering system, and a new motor which allowed them to achieve success.

The Eco-Marathon concept started as the Shell Mileage Marathon in 1939 between employees of Shell at a research laboratory in Wood River, Ill. Today, the Americas event extends to student teams from across North and South America.

AeroGRAM

School of Aeronautics & Astronautics

Purdue University

Neil Armstrong Hall of Engineering

701 W. Stadium Ave.

West Lafayette, IN 47907-2045

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There are many ways for you to stay involved with our school. Please keep us posted on where you are and what you are doing using the Update Alumni Records page from our Alumni section of our web site at: <https://engineering.purdue.edu/AAE/AboutUs/Alumni/Update/AlumniRecords>

Alternatively, you can jot down personal news that you want to appear in the next edition of AeroGram or our E-newsletter the Aeroliner and either email it or send to the address below.

Our goal is to keep you abreast of the activities in the School of Aeronautics and Astronautics and across Purdue University. We hope that you find this information useful and relevant. We want to keep in touch with all our alumni and friends. Information provided by you is used to deliver up-to-date news and other information. We will not share your information with any other person or organization.

We can be contacted at the following email address:

aae-alumni@ecn.purdue.edu

Or by mail at:

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Neil Armstrong Hall of Engineering
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West Lafayette, IN 47907-2045**



AeroGRAM

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

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