

PURDUE
UNIVERSITY

AeroGRAM

Fall 2011

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

Covering the 2010-2011 academic year



2011 COMMENCEMENT

- Thomas L. Maxwell BSAE'69 & Gary E. Payton MSAE'72
Distinguished Engineering Alumni
- 2011 Outstanding Engineer Awards

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From Professor Tom I-P. Shih - AAE Headlines Fall 2011



I am honored and privileged to have served my second year at Purdue, and it has been a year full of opportunities. I continue to be incredibly impressed by our outstanding students, faculty, and staff and the excellent work that they do. Also, I continue to be incredibly impressed by our alumni as I learn of their accomplishments that have impacted the aerospace industry over the years. This issue of the *AeroGram* highlights events and accomplishments that occurred both on campus and around the country during academic year 2010-11.

During this past academic year, we celebrated several important recognitions of our alumni, including the honoring of seven alumni with the Outstanding Aerospace Engineer Award on November 5, 2010 and the College of Engineering's recognition of Thomas Maxwell and Gary Payton with the Distinguished Engineer Award in February 2011. Details of both events can be found on pages 24 and 17, respectively.

We also welcomed Major General Charles F. Bolden, Jr. who was named NASA's 12th Administrator in July 2009. General Bolden presented the William E. Boeing Distinguished Lecture on September 7, 2010 and met with numerous faculty and students. On October 21, 2011, Preston A. Henne, Senior Vice President of Programs, Engineering, and Test of Gulfstream Aerospace Corporation gave the Charles Rolls and Henry Royce Purdue Memorial Lecture.

In this issue of the *AeroGram*, you will also read about our distinguished faculty who garnered awards and recognitions during the past academic year. Our faculty is dedicated to ensuring the very best possible education for our students, and they continue the tradition of excellence in all that they do in teaching, research, and service that Purdue is known for. During this past year, Dr. Tasos Lyrantzis was named Associate Head with responsibility for the Graduate program; Dr. Stephen Heister was named the Raisbeck Engineering Distinguished Professor for Engineering and Technology Integration and appointed as the Director of the Maurice J. Zucrow Laboratories after a university-wide search; and Dr. Bill Anderson was appointed as the director of our college's Global Engineering Program. During the 2011-12 academic year, we will welcome two outstanding new faculty members to our school in Dr. Sally Bane and Dr. Michael Sangid. Dr. Bane started on August 15, 2011, and Dr. Sangid will start on January 2, 2012.

On behalf of the faculty and students, I want to express our deepest thanks to Dr. Terry Weisshaar who retired at the end of the 2010-11 academic year for his many years of tireless and dedicated service to Purdue. I also want to thank Terri Moore, administrative assistant, who retired on May 31st for her 31 years of tender loving care of our school. We are saddened that former AAE Head, Dr. Harold M. DeGross, Jr. passed away at the age of 90 in October 2010. His obituary can be found on page 36.

As I travelled across the country to meet alumni and friends of the School of Aeronautics and Astronautics, my impressions from last year were confirmed in that the School enjoys tremendous support from our alumni. I am extremely grateful and look forward to working and meeting with you to continue the excellence of our School.

With very best wishes and regards for the coming year.

Purdue, Neil Armstrong presented
'Hero of the Hudson'
with medal

Purdue President France A. Córdoba and Neil Armstrong BSAE'55 presented Capt. Chesley "Sully" Sullenberger with the university's **Neil Armstrong Medal of Excellence** on Nov 12, 2010. The honor is to recognize those who have "embodied the same pioneer spirit, determination and dedication that distinguished Neil Armstrong's exploration of space and his later roles as a businessman and scholar."

Just after takeoff from LaGuardia Airport on January 15, 2009, a flock of geese disabled both engines on Sullenberger's U.S. Airways airliner. He then set the plane down safely on the Hudson River and stayed on

board until all 155 passengers and crew were safely off the plane.

Earlier at a Back to Class lunch for the President's Council, Sullenberger received a **Distinguished Alumnus Award** from the College of Liberal Arts, where he earned his master's degree in industrial psychology in 1973. Armstrong received a bachelor's degree from Purdue in aeronautical engineering in 1955 and was awarded an honorary doctorate in engineering from Purdue in 1970. On July 20, 1969, Armstrong became the first person to walk on the moon as commander of Apollo 11.



(Purdue University photo/Mark Simons)

Purdue Engineer Builds Satellites that Saves Lives



During Boeing satellite Chief Engineer **Patrick Jasanis's** **BSAAE'94** senior year at Purdue, a deadly tornado struck the area with little warning. When it was announced a few years later that Boeing would be building next-generation weather satellites known as Geostationary Operational Environmental Satellites (GOES), Jasanis knew that he wanted to be part of that mission.

Jasanis joined a team of about 200 Boeing engineers who then went on to design, assemble and test three next-generation GOES satellites for NASA and the National Oceanic and Atmospheric Administration (NOAA). During his 12 year spell on the program, Jasanis rose from the test procedure development lead to chief engineer.

GOES-13 has been activated to monitor the hurricane season over the Atlantic. GOES-14 and GOES-15, are in orbit and ready to replace older GOES satellites that will be decommissioned. Each spacecraft remains in a geostationary orbit more than 22,000 miles above the Earth.

NASA oversaw the Boeing-led industry team that built the new GOES satellites and announced that all three spacecraft are working well. NOAA operates the satellites from a control station in Suitland, Md., near Washington, D.C.

(L-R) Russel Taub, Delta IV chief engineer at United Launch Alliance; Andre Dress, GOES deputy project manager at NASA Goddard Space Flight Center; Patrick Jasanis, GOES chief engineer at Boeing; and Charles Maloney, GOES program manager at Boeing, stand in front of part of the launch vehicle for GOES-14, formerly designated GOES-O. GOES-14 was launched in 2009.

Photo courtesy of boeing.com

Purdue's Forty Under

40

Celebrating the best and brightest young Boilermakers



Tamaira Ross BSAAE'96, MSAAE'98, was chosen by the Purdue Alumni Association in July/August 2010 as 40 alums under the age of 40 to highlight and honor.

Tamaira is an aircraft systems designer at Boeing Corporation in Seattle, WA. and worked on preliminary design of aircraft and other vehicles, working in commercial aircraft design for several years before moving to the defense side. She also pursued further graduate work at the University of Washington MS- Mechanical Engineering, 2002, and Technology Management MBA, 2008.

She has been recognized numerous times in her career, including being named as an associate technical fellow at Boeing. The fellowship recognizes technical leadership and included approx 3% of Boeing engineering personnel at any time. Congratulations to Tamaira on this well deserved honor.

Alumni inducted into Purdue ROTC Hall of Fame

Col. Douglas Joyce was inducted into the Purdue ROTC Hall of Fame in April 2011. He graduated from Purdue in 1967 as a Distinguished Military Graduate, earning his bachelor's degree in aeronautical and astronautical engineering.

After earning a master's degree from Purdue, he began a flying career for the Air Force that included two combat tours in support of the Vietnam War. He flew a combined 216 combat missions over two tours.

After the Vietnam War, Joyce became a test pilot and was the first Air Force pilot to fly the EF-111 prototype. His military career culminated as vice commander of a highly classified test and evaluation unit in Nevada. Joyce then began a career in higher education.

He led efforts to establish a professional pilot degree program at Daniel Webster College in New Hampshire. He was also crucial to the establishment and accreditation of the aerospace engineering program there.

The Purdue ROTC Hall of Fame was established in 1974 to honor graduates who exhibit the leadership, integrity, moral courage and self-discipline that the ROTC program seeks to develop.



Back Row (L-R) Doug & Phyllis Joyce with Professor and Head of School Tom Shih. Front Row (L-R) Professor Emeritus George & Patricia Palmer and Professor Emeritus Larry & Frances Cargnino



Purdue License Plates

Show your Purdue Pride while helping to support the University's General Scholarship Fund. The license plate program, which began in 1991, has raised more than \$4,000,000 for scholarships.

A donation of \$25 is required to purchase the plate (over and above any other vehicle registration fees). This donation is required each year to keep the plate.

In Indiana

Simply go to your local BMV office and request the Purdue plate. Your \$25 donation is collected by the BMV at the time of payment. Plates can also be renewed online at the Indiana BMV Web site. <http://www.in.gov/bmv/index.htm>

To contact Purdue about the license plate program, call (800) 677-8780 or e-mail us at plpp@purdue.edu.

Mark Anderson BSAAE'74 Test Pilot for 787 with Fire Onboard

FAA Test Pilot Mark Anderson BSAAE'74 was at the controls during a Boeing 787 test flight on Nov 9, 2010 when, at the end of a 6-hour flight with the tests completed, the aircraft was on final approach when problems occurred about 1,000 feet above the ground.

Anderson is one of 31 test pilots and has been a test pilot for 25 years and has worked for the FAA for nearly 20 years. He had been on five or six test flights in the 787 as a guest pilot and November 9 was his third time flying the airplane.

Anderson was flying the airplane manually through the head-up display when the display symbology went dark. He received a call that there was smoke in the cabin and it was being investigated. Shortly thereafter, he got another call saying, "Fire, fire, fire."

At about 500 feet in altitude, Anderson's displays flickered but came back. Anderson safely landed the 787 and the crew in the back deplaned using the evacuation slide.





(L-R) Prof and Head of School Dr. Tom Shih, Dr. Paul Bevilaqua, Dr. Skip Grandt and Dr. Terry Weisshaar

Alumnus and IAC member Dr. Paul Bevilaqua donates books to AAE

On behalf of the Lockheed Martin Skunk Works, Dr. Paul M. Bevilaqua MSAAE'68; PhD'73 presented five copies of 'Fundamentals of Aircraft and Airship Design' – Volume 1 to the School of Aeronautics and Astronautics at the April Industrial Affiliates Council (IAC) meeting.

Authored by Leland M. Nicolai and Grant E. Carichner, the books are printed as part of the AIAA Education Series. The authors have a unique perspective as they have taught Lockheed Martin's internal 'knowledge transfer' seminars on stealth, aircraft design, and buoyant vehicle design.



Space Trees on the Purdue campus

After returning from the 1984 space shuttle Discovery flight with 200 tree seeds, Purdue alumnus and astronaut **Charles Walker BSAAE'71** donated five sweet gum seeds, referred to as "shuttle gums," to Purdue. The seeds were germinated in by the U.S. Forest Service research facility in Lawrence County after the mission landed. Purdue's nursery accepted sprouts for further care and maturation before planting on campus in the following locations:

- South side of the Forestry Products Building
- Northwest corner of Grissom Hall
- Northwest corner of the Electrical Engineering Building
- Southeast corner of Forney Hall of Chemical Engineering
- Pickett Park

A sycamore tree – pictured is growing on the south side of Lilly Hall was germinated on space shuttle Atlantis in 1988. Purdue alumnus and astronaut Jerry Ross and his wife planted the "space tree" in 1990 in honor of the diamond anniversary of Purdue Extension.

Andrew Hoft BSAAE'10 - Oath of Office given by his wife Valerie Hoft

Andrew Hoft graduated in December 2010 with a degree in aeronautical engineering. His wife of seven months Valerie had graduated from Georgetown University and was commissioned as an officer in May 2010.

Valerie contacted Staff Sgt. Rob Sawtell at Purdue to see if she, a newly commissioned officer, could be the one to administer the oath to her husband after he received his degree. The necessary authority was granted and immediately after commencement, she was able to administer the oath of office that commissioned him as a second lieutenant in the United States Air Force.



The couple met during their freshman year of college, when they both spent three weeks training on Misawa Air Base in Japan. Andrew said having his wife administer the oath was an appropriate way to end his ROTC career at Purdue.



"The Electromagnetic Aircraft Launch System launches its first F/A-18E Super Hornet on Saturday Dec. 18 at Naval Air Engineering Station Lakehurst, N.J."

U.S. Navy photo by Kelly Schindler

Purdue Graduate Lt. Daniel Radocaj BSAAE'99, MSAE'01 **MAKES HISTORY**

The Navy made history on December 18, 2010 when it launched the first aircraft from the Naval Air Systems Command, Lakehurst, N.J., test site using the Electromagnetic Aircraft Launch System, or EMALS technology.

After using the steam catapult for more than 50 years to launch aircraft from carriers, the Aircraft Launch and Recovery Equipment (ALRE) program launched an F/A-18E Super Hornet using EMALS, technology.

Purdue graduate **Lt. Daniel Radocaj, BSAAE'99, MSAE'01**, was the test pilot from Air Test and Evaluation Squadron 23 (VX-23) who made the first EMALS manned

launch. This EMALS launch demonstrated an evolution in carrier flight deck operations using advanced computer control, system monitoring and automation for tomorrow's carrier air wings. Newer, heavier and faster aircraft will result in launch energy requirements approaching the limits of the steam catapult system.

The mission and function of EMALS remain the same as the steam catapult; however, EMALS will deliver the necessary higher launch energy capacity as well as substantial improvements in system weight, maintenance, increased efficiency, and more accurate end-speed control. The system's technology allows for a smooth acceleration at both high and low speeds, increasing the carrier's ability to launch aircraft in support of the war fighter and will provide the capability for launching all current and future carrier air wing platforms - lightweight unmanned to heavy strike fighters.

New director takes the lead at National Museum of the U.S. Air Force

Lt. Gen. (Ret.) John "Jack" L. Hudson MSAAE'74 became director of the National Museum of the U.S. Air Force in December 2010.

Hudson had served as the museum's deputy director for the past year. As director, Hudson manages the museum's 17-acre campus that includes nearly one million square feet of public exhibit space, more than 500 aerospace vehicles and 78,000 artifacts. He also provides technical and professional guidance to the U.S. Air Force Heritage Program, which includes 12 field museums and 260 domestic and international heritage sites, accounting for nearly 43,000 items on loan. Additionally, he will ensure accountability for more than 6,400 historical artifacts and aerospace vehicles on loan to 474 civilian museums, cities, municipalities and veterans' organizations throughout the world.

Some of Hudson's top priorities include constructing the fourth building, and incorporating more of today's emerging technology to stay relevant with today's visitors both at the museum and online.

The National Museum of the United States Air Force is located on Springfield Street, six miles northeast of downtown Dayton. Admission and parking are free. For more information about the museum, visit www.nationalmuseum.af.mil.



NEWS ABOUT *you*

Class Notes

Augustus D. Cook ATE'56, retired in 1992 from Industrial and then Refinery Engineering and Construction, later Environmental Compliance and H & S Compliance. Gus has fond memories of his old professor Larry T. Cargino and having coffee and donuts with Prof. Biggs and his classmate Harold Cleaver in the old coffee shop in the airport. They enjoyed watching Grove Webster rant about something that was wrong. Best times for Gus!

Robert J. McElvain BSAE'58, Sedona, AZ, retired from Hughes Space & Communications Group in 1989 as Manager of the Guidance & Control Systems Laboratory. Now living in Arizona with his wife Sharon and is active with playing tennis and volunteer activities. He is involved in AARP Tax Aide Program as an instructor and is a member of the Parks and Recreation Commission for the City of Sedona. They enjoy travelling and cruising and visiting their two sons and four grandsons in southern California.

Dr. Alan T. Roper BSAE'58, Port Ludlow, WA, retired as V.P. Planning and Data Systems, Professor of Mechanical Engineering, Rose-Hulman Institute of Technology.

Walter Eversman BSAE'59, named AIAA Fellow 2011.

Tom Leech BSAE'59 in 1967 interviewed fellow San Diegan Don Hall, Ryan's Chief Engineer and designer of Charles Lindbergh's Spirit of St. Louis. A portion of that interview ran in a 1967 newsletter Tom started and wrote for the San Diego AIAA Chapter. The original audio cassette of that interview was donated by Tom to the National Air and Space Museum in Washington DC. An update is an article in the July 2011 issue of the *Smithsonian Air & Space Magazine*. It can be found online at: <http://www.airspacemag.com/history-of-flight/A-Mailplane-for-Lindbergh.html>

Michael J. Corso BSAAE'71, Fort Myers, FL, is a member of the School of Aeronautics and Astronautics Industrial Advisory Council and has been named to Florida Trend's Legal Elite. This is recognition of the respect that his legal peers in the legal community have for his work. Mike also received a letter of congratulations from the Senator for Florida, Bill Nelson.

Gary L. Cain BSAAE'80, Helotes, TX, is Director Space and Satellite Operations for EADS NA Defense Security & Systems Solutions, Inc. The primary objective is to help oversees satellite owners, operators and manufacturers who seek to do business with the U.S. Government and acquire NSA program approval through proper application of Information Assurance Controls. He retired from the Air Force with over 22 years of service and was furloughed twice from United Airlines.

Gregory Edwards BSAAE'83, Greenville, SC, is Manger Heavy Duty Gas Turbine/Full Load Compressor Test Facility for General Electric Energy.

David K. McGrath BSAAE'83; MSAAE'84, IAC member, named AIAA Fellow 2011.

Dr. Jonathan Bohlmann BSAAE'85, Jon was recently awarded the Zelnak Management of Innovation Award for the Poole College of Management, North Carolina State University. The award is in recognition of research excellence in innovation management. Jon is an Associate Professor of Marketing at the Poole College of Management.

Tan Jiak Kwang PhD'92 is the principal Scientist and Department Director, Capability Group Manager, (FSI Group). Dr. Kwang returned to Singapore after graduation and worked for the Air Force and subsequently in outside industry. In January 2011, he joined the Institute of High Performance Computing (IHPC) and now leads the Fluid Dynamics Department. Their focus is on CFD on various applications.



Brett M. Hoffstadt BSAAE'93, Media, PA, released his debut CD of original instrumental music, *Preludes Reflections*. He currently had two assignments at The Boeing Company in Ridley Park, PA: project engineer on the V-22 Osprey at Boeing and also the Boeing Technical program manager with the Vertical Lift Consortium. Brett has also created a new website to help attract new people to the aerospace profession. Two of Prof. James Longuski's books, *'Advice to Rocket Scientists'* and *'The Seven Secrets of How to Think like a Rocket Scientist'* have been both mentioned and recommended on the website with a link to purchase from AIAA. Additionally, Longuski's first book has been made a regular raffle prize for the Greater Philadelphia AIAA Section. The website can be found here. <http://www.squidoo.com/how-to-be-a-rocket-scientist-or-aerospace-engineer>

Jake Grasmick BSAAE'01 is the Projects Finance Advisor for Supply & Distribution in Downstream Finance for Shell Oil Company in Houston, TX. He provides project financial management for projects in the Gulf of Mexico totaling more than \$750M.

Joel Falardeau BSAAE'03, MSAAE'06 Following graduation, Joel moved to Cape Canaveral, Florida, with Reynolds, Smith and Hills (RS&H) designing launch pad facilities. In 2010, he earned a PE License in mechanical engineering and earned LEED AP accreditation. He has worked on projects for Kennedy Space Center designing the mobile launcher for the Constellation Program. At Wallops Flight Facility, he helped design pad 0A.



Daniel Gillies BSAAE'06, Philadelphia, PA, is a Structural Design Engineer, CH-47 Chinook Program, Boeing - Philadelphia, PA. Daniel was a recipient of the 2010 Boeing Houston Early Career Engineer of the Year and the STS-132 NASA Space Flight Awareness Honoree.



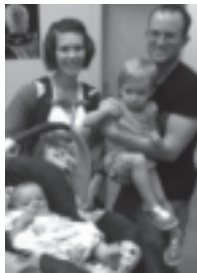
We have been delighted with the response to the Online Update Alumni Records page on the Aeronautics and Astronautics website. The web page to update your records can be found at:
<https://engineering.purdue.edu/AAE/Alumni/Update/AlumniRecords>

Births

Diane Craig Davis (Ph.D. student of Professor Howell – who graduated in August 2011) and her husband Jonathan welcomed Isaac Zachary Davis, 7 lb 13 oz at 8:49am July 13th, 2011. Big brother Ian celebrated his 4th birthday on August 7.

Professor Emeritus Gus and Sally Gustafson welcomed new granddaughter in May 2011. Elliana Ysabel known as Ellie weighed in at 8.1 pounds.

Jeff S. Ksander BSAE'06 and his wife Kimberly EDU'07, Maineville, OH, welcomed the birth of their son Brayden Scott on March 12, 2010.



George Pollock IV and his wife Amy celebrated the birth of their second child George Edward Pollock V on January 15th 2011. George was 6 lb 12 oz and was 20 inches long. Big sister Imogen was 2 years old on June 15th, 2011.

Prof. Vikas Tomar and his wife welcome their second son Samarth on July 7th, 2011 at 3:24pm. He weighed in at 8 lb 13 oz, and was 21.”

Tied the Knot

School of Aeronautics and Astronautics faculty members **Dr. Karen Marais** (Muh-reh) and **Dr. Timothée Pourpoint** (Poehr-pwah) were married on May 28th, 2011 at Cape Bon, Robertson, South Africa.



The school congratulates them and wishes them both well.

AEROGRAM PUBLICATION

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.

In Memoriam

Carl W. Spalding BSAE'43, Seal Beach, CA, July 27, 2010.

Rodney L. Boyer MSAE'47, Chesapeake, VA, August 1, 2010.

Fred M. Dreyer BSAE'47, Indianapolis, IN, September 15, 2010.

Joseph L. McKinstry BSAE'47, Westfield, IN, January 8, 2010.

Robert C. Amberson BSAE'48, Overland Park, KS, January 16, 2010.

Harry F. Angrick BSAE'49, Michigan City, IN, December 22, 2009.

Floyd E. Cotton BSAE'49, Indianapolis, IN, October 21, 2010.

George J. Koehler BSAE'49, West Lafayette, IN, May 18, 2010.

Harry Powell BSAE'49, Medina, OH, October 9, 2010

Robert L. Vautaw BSAE'49, Columbus, UN, July 17, 2010. Vautaw was a member of Phi Kappa Psi Fraternity while at Purdue. He worked for Arvin Industries from Oct. 1949 to Dec. 1988, retiring as V.P. of Engineering.

He is survived by his wife, Dorothy.

Karl H. Young BSAE'49, Sebastian, FL, February 19, 2010.

Grove C. Carnahan BSAE'50, Longmeadow, MA, August 6, 2010.

George T. Gilbert BSAE'50, Oxnard, CA, January 22, 2010.

O.W. (Doc) Shull BSAE'50, Famers Branch, TX, April 13, 2010.

Walter Melloncamp BSAE'51, Dayton, OH, October 20, 2010.

He is survived by his wife, Myrtle.

Raymond W. Waddell BSAE'51, Cape Coral, FL, September 4, 2010.

Ray was a corporate pilot for Marathon Oil Company in Findlay, OH.

He retired to North Fort Myers, Florida where he enjoyed golf and administrative positions in the association where he and Eleanor, his wife of 63 years, lived.

Allen H. Bohls BSAE'52, Eugene, OR, July 28. He is survived by his wife, Mary S'53.

John J. Cunningham BSAE'52, Washington, UT, December 12, 2009.

He is survived by his wife, Josephine.

Robert N. Smith BSAE'53, Del Ray Beach, FL, August 7, 2010.

He is survived by his wife, Carolyn.

James R. Barthel BSAE'55, MSAE'56, PhD'60, San Diego, CA, October 13, 2010.

Rene D. Wernicke BSAE'55, San Diego, CA, May 10, 2010.

He is survived by his wife Elizabeth.

John A. Wooden BSAE'55, Indianapolis, IN, October 3, 2010.

Richard Hadley BSAE'56 Green Valley, AZ. March 15, 2010.

Survived by wife, Nancy (CFS'55).

Louis E. Rittenhouse BSAE'56, Tullahoma, TN, June 16, 2010.

Jack P. Etchison BSAE'57, Centerville, OH, May 7, 2010.

George Rauch BSAE'58, Bothell, WA, November 6, 2010.

Nathaniel Wilson Jr. BSAE'58, Arlington, VA, June 4, 2010.

Lary W. Wilson BSAE'58, Deerfield, IL, October 7, 2010.

Joseph Fromme BSAE'60, Manitou Springs, CO, March 15, 2010.

Freidrich C. Werner BSAE'61, Zellwood, FL, December 15, 2009.

Robert P. Lippincott BSAE'64, MSAE'65, Burlington, NJ, June 8, 2010.

Dr. Paul H. DeHoff Jr. PhD'65, Charlotte, NC, June 19, 2010.

Steven Watson BSAE'71 is the owner of Watson's Streetworks, Bozrah, CT.

James E. Sandstrom MSAE'72, Fort Worth, TX, August 18, 2010.

He is survived by his wife, Jean.

Dr. Robert W. Milling PhD'81, Norcross, GA, November 23, 2009.



AAE 2010-2011 Donor Honor Roll

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 covers the period July 1, 2010 – June 30, 2011 and 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 us.

Thank you for your support. The Donor Honor Roll is published on the Alumni page of the School web site at: <https://engineering.purdue.edu/AAE/AboutUs/Giving/honorroll>

Dear AAE Alumni and Friends,

It has been a pleasure to serve the School of Aeronautics and Astronautics for the past 2 years as the Director of Development. I have truly enjoyed meeting all of you and I thank you for visiting when I came to your part of the country and for your support of AAE. Your respect and affection for the faculty & staff here in AAE has been apparent and it was fun walking down memory lane with each and every one of you. Purdue AAE has a distinguished reputation and fine leadership in Dr. Tom Shih. I have enjoyed working with Dr. Shih and all of the faculty and staff.

I hope to see many of you again at President's Council events and football games as I attend representing the School of Chemical Engineering here at Purdue as their new Director of Development. Hail Purdue!

Diane Klassen

Diane Klassen
Director of Development
(765) 494-9124
dklassen@purdue.edu

Diane left the School of Aeronautics and Astronautics on August 5th to become the Director of Development in the School of Chemical Engineering, a promotion for her.

Diane joined our school in October 2009 after working as Director of Development for Purdue's President's Council. Diane very much enjoyed meeting the alumni and friends of AAE. AAE deeply appreciates Diane's dedicated service and wants to wish her the very best in her new position.

A handwritten signature in black ink, appearing to read "Tom Shih", written in a cursive style.

Tom I-P. Shih



College of Engineering

Future Purdue Challenge Match

The College of Engineering is committed to recruiting and attracting the best and brightest students from around the world and one of the best ways to do that is through scholarships. There are many types of scholarships available to Purdue students, and a new challenge match is devoted to increasing merit-based scholarships, allowing Purdue to attract exceptional students with high academic potential to the College of Engineering.

Here's How It Works:

- Cash gifts of any amount will be matched 1:1 to provide scholarship support for College of Engineering students who are selected as Presidential scholars.
- Presidential scholarships can be restricted to the college, school, department or other academic unit.
- Employers' matching gifts are eligible for the challenge match.

Double Your Impact!

The College of Engineering has a proven track record for fulfilling and maintaining a high volume of merit-based scholarships. With a gift of any amount, you can be a part of this success by supporting the educational endeavors of Purdue students while allocating the funds specifically to students from the engineering school or program of your choice.

Presidential Scholarships

The Presidential Scholars Program has given the College of Engineering the opportunity to choose the majority of its own scholarship recipients based on attributes considered important to the success of our future students. Presidential Scholars will be selected based on their overall GPA from high school and their test scores, combined with the student's demonstrated leadership through extracurricular activities, sports, and/or working while in high school. The ability of our Scholars to demonstrate the well-rounded attributes of academic success partnered with extracurricular activities is important. In addition, we are seeking students who value diverse and global thinking, understand engineering is creative and socially relevant, and have demonstrated intent to persist in engineering through participation in high school engineering related programs.

Recognition

- Gifts of \$25,000 or more qualify donors for lifetime membership in the President's Council (Gateway Level). The President's Council recognizes the University's most generous benefactors.

For more details, please contact Director of Development on (765) 494-9124 on aae-alumni@ecn.purdue.edu.





Pratt & Whitney Rocketdyne present Scholarship Check

Dr. Munir M. Sindir, Director of Engineering Technical Disciplines from Pratt & Whitney Rocketdyne, presents a check for funding for undergraduate scholarships to Dr. Tom Shih, head of the School of Aeronautics and Astronautics. Dr. Sindir is a member of the school's Steering Advisory Committee (SAC).

Gifts promise *growth and challenge others to give*

G. Wayne Hawk (BSAE'51) and his wife, **Charline (Bunkie) Hawk**, of Alma, N.Y., have generously given the School of Aeronautics and Astronautics a deferred gift of \$500,000. They determined that the donation should be unrestricted and to go to whatever areas or programs within the school which have the greatest need at the time.

Hawk held various titles, including that of executive vice president, at Moog Inc. in East Aurora, N.Y., from 1957 to 1981. Moog designed and manufactured electro-hydraulic, electro-pneumatic and electromechanical control systems for aircraft, spacecraft, missiles, ships and ground vehicles. During his tenure, the company grew from \$5 million in annual sales to over \$180 million in sales.

Hawk is very active within the community and is president of the Ira G. Ross/ Niagara Aerospace Museum, in Buffalo, N.Y. and among other activities; he is on the board of directors for the Meals on Wheels Foundation in Buffalo.

He has received much recognition throughout his career and has been inducted into the Niagara Frontier Aviation Hall of Fame and is a Life Member of the Buffalo Philharmonic Orchestra. He was Silver Beaver-Boy Scouts of America and was inducted into the Warren Harding High School Hall of Fame, Warren, Ohio. Hawk is an Associate Fellow of AIAA and a member of the Air Force Association.

Wayne and Bunkie have three grown sons, George, David and John.

Naples Weekend 2011

In partnership with the John Purdue Club, the President's Council gives the University the opportunity to thank members and celebrate the success their generosity makes possible during the annual Mollenkopf Purdue weekend in Naples, Florida.

The weekend is filled with a vast array of activities to choose from, culminating with the "appreciation" dinner for PC/JPC members. Taking place in conjunction with Mollenkopf Weekend are the ever-popular Back to Class sessions, where members attend "class" with some of Purdue's top faculty and learn about all of the exciting things happening on campus.

Michael J. Corso BSAAE'71 and his wife **Sandi** graciously welcomed AAE alumni and friends to their home for an evening to catch up with old friends and to make new ones.



Group photo of guests at Mike and Sandi Corso's house



(L-R) Professor and head of School Dr. Tom Shih, Debra L. Haley BSAAE'78; OAE'05; DEA'08 and Casey Kirchner BSAAE'01

Update on The George and Patricia Palmer Undergraduate Scholarship Endowment and The George and Patricia Palmer Teaching Assistantship Fund

In recognition of Prof. Palmer's many contributions and tireless dedication, two endowments were created in his honor: J. William Uhrig and Anastasia Vournas have generously funded a Challenge Match for The George and Patricia Palmer Undergraduate Scholarship Endowment and The George and Patricia Palmer Design Teaching Assistantship Fund. Donation's made will be divided between the two awards and will be matched in full.

Alumni and friends support is the key for a successful effort to honor George Palmer's lasting legacy and the profound impact he had on Purdue's campus. The School has received numerous gifts to both of these endowments with many letters of support and thanks to George.

For more details, please contact Director of Development on (765) 494-9124 on aae-alumni@ecn.purdue.edu.



AAE alumni event in California



The School of Aeronautics and Astronautics were delighted to host an alumni reception in California in August 2010 with head of school Dr. Tom Shih and director of development Diane Klassen on hand to bring a small piece of Purdue to California.

The evening was a huge success with many alumni meeting up and networking. Dr. Shih provided an update on the current events connected with the School of Aeronautics and Astronautics at Purdue.

Attending the event were: Randy and Glenda Secor; Matt and Sarah Baldwin (newly graduated and newly married) James Eckstein and Emily Henricks, Cory Arendt; Sheryl Fine; Nancy Anderson; Charles May; Dale Smith; Walter and Roberta

Reddall III; Andrew and Monika King; Dave Schweikle; Derek Hazen; Tom and Sue Graham; Rudy Dettwyler; Kay Greenfield; Marvin Schienberg; Jerry Lockenour; Les and Roberta Hromas; John Tsohas; N. Belakovshi; John Rich; Robert and Mary Tatro; and Heiko and Paige Wiedmann.

At a second event, Terry and Marianne Murphy with their two daughters, Megan and Colleen very graciously hosted a dinner at their lovely home at West Lake Village. The guests included, Sunil and Pravina Mehrotra, John and Roberta Gleiter, Tim and Mariann Harmon and Arthur and Barbara Weiss, Jim and Hydee Sharvin.



FUTURE IMPORTANT DATES TO HELP YOU PLAN AHEAD 2011-2012

August 22, 2011	Fall classes start
August 12, 2011	Purdue Day at the State Fair
September 17, 2011	Band Day and Family Day - Purdue vs. Southeast Missouri State
September 30, 2011	President's Council Annual Weekend
October 21, 2011	Industrial Advisory Council Meeting
October 21, 2011	Outstanding Aerospace Engineer Award
October 22, 2011	Homecoming Purdue vs. Illinois
November 5, 2011	Purdue Space Day for grades 3-8 with Astronaut Alumni Gary Payton
February 18, 2012	President's Council visit to Naples, FL.



Student Organization donates model plane to AAE

Graduating seniors Ben Weiss (left) and Konrad Habina (right) marked the May 2011 Commencement with a donation of a 1/100 scale Boeing 737-200 model plane to Dr. Tom Shih, AAE professor and head of school.

The model plane is an exact replica of the Purdue 737 plane that was decommissioned and dismantled in spring 2010. The full size plane was originally donated by United Airlines to Purdue to teach aviation students the mechanics and maintenance of large aircraft.

The plane was borrowed by Boeing to investigate rudder problems 737's were experiencing and then refurbished and returned to Purdue. The custom silk decals for the model were donated by Greg Drawbaugh from Draw Decal. The model will be displayed on the third floor of Armstrong Hall.

Charles Rolls and Henry Royce *Purdue Memorial Lecture 2010*

Preston A. Henne Sr. Vice President of Programs, Engineering and Test Gulfstream Aerospace Corporation and Vice President General Dynamics Corporation, presented the Charles Rolls and Henry Royce Memorial Lecture on October 21, 2010 at Fowler Hall on Purdue's campus.

Henne began his aerospace career in 1969 at McDonnell Douglas, where he managed several advanced programs in aerodynamics and acoustics for both military and commercial aircraft. Known for his work in advanced aerodynamic technology, he was responsible for the aerodynamic design of the wing on the C-17 - considered the most versatile aircraft in airlift history and winner of the 1994 Collier Trophy for aeronautical achievement. Henne later served as Chief Design Engineer for the MD-80 aircraft. In 1991, he became Vice President and General Manager of the MD-90 Program at McDonnell Douglas' Long Beach Douglas Aircraft facility, where he oversaw the aircraft's complete development and certification process.

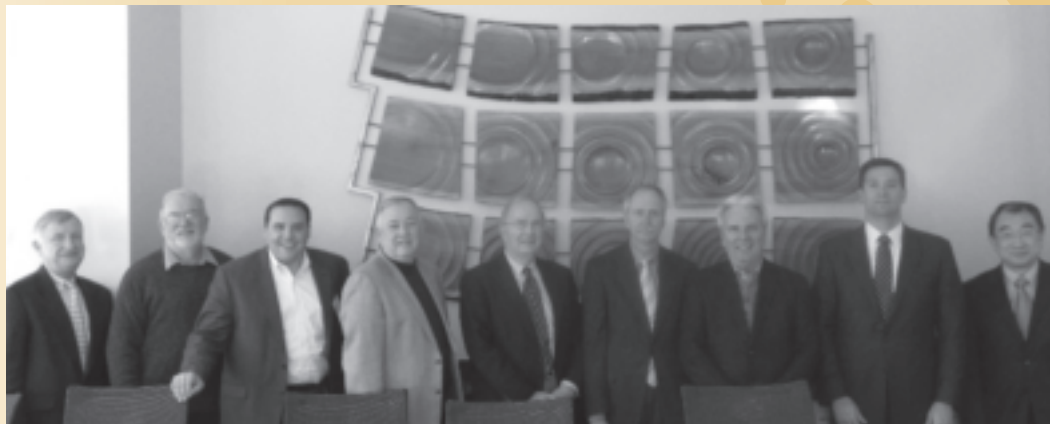
Joining Gulfstream in 1994, Henne is credited with the design, development, test and certification of the Gulfstream V aircraft - which was awarded the 1997 Collier Trophy. Henne became a Vice President of General Dynamics in July 1999 when the company acquired Gulfstream. As Senior Vice President, Programs, Engineering and Test, he is responsible for Gulfstream's product program management, engineering, and flight operations. His organization was responsible for the development of the Gulfstream 550 - which was recognized with the Collier Trophy in 2003.

Henne earned a bachelor's degree in aeronautical and astronautical engineering with highest undergraduate honors from the University of Illinois in 1969 and a master's degree in engineering from California State University at Long Beach in 1974.



SCHOOL OF AERONAUTICS AND ASTRONAUTICS Steering Advisory Council 2010 - 2011

The Steering Advisory Council (SAC) advises and helps the School of Aeronautics and Astronautics in exploring and creating major opportunities in the aerospace arena that are timely and important at the national level. The School of Aeronautics and Astronautics are grateful to the members of the SAC for their time and expertise to assist us in our programs, and look forward to working with them in the future.



Mr. Douglas Bowers, BSAAE'72

Director • Propulsion Directorate • *United States Air Force*
(U.S. Department of Defense Liaison for Purdue)

Mr. Darryl W. Davis, BSAAE'78

President • Advanced Systems • Boeing Integrated Defense Systems • *Boeing Company*

Mr. William Gerstenmaier, BSAAE'77

Associate Administrator • Space Operation Mission Directorate • *NASA*

Mr. Thomas L. Maxwell, BSAAE'69

General Manager • Military Systems and Design Integration • *GE Aircraft Engines*

Lee Rhyant

Executive Vice President and General Manager • *Lockheed Martin's Marietta*

Dr. Munir Sindir, Ph.D., U. of Florida

Director • Engineering Technical Disciplines • United Technologies Corporation • Pratt & Whitney • *Rocketdyne*

Dr. Matt Szolwinski, BSAAE'93, MSAAE'95, PhD'98

Manager • GEnx Systems Engineering • *GE Aviation*

Mr. Tom Vice

Corporate VP and President • Northrop Grumman Technical Services • *Northrop Grumman Corporation*

Mr. Dennis E. Warner, BSAAE'73, MSME'76

President & CEO • Rolls-Royce North American Inc. • *Aero Engine Controls, North America*



Find us on
Facebook

Find us on Facebook

The School of Aeronautics and Astronautics have enjoyed utilizing Facebook since December 2009 and we now have over 1100 people who follow us.

You do not need to join Facebook to view the page, just follow the link on the AAE web page <https://engineering.purdue.edu/AAE>

We aim to keep alumni, faculty, students, staff and friends of AAE up-to-date on all relevant events!

Round Up of U.S. News and World Report Rankings 2010 – 2011

Purdue ranked 4th in *Wall Street Journal's* job recruiter rankings

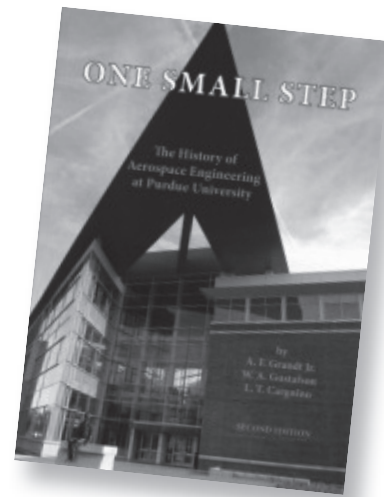
Undergraduate programs

- AAE ranked 4th
- Purdue engineering ranked 8th

Graduate programs

- AAE ranked 6th
- Purdue engineering ranked 13th

Purdue ranked 18th (up from 22nd) among all public universities - tied with Ohio State University, the University of Georgia and the University of Maryland.



One Small Step:

The History of Aerospace Engineering at Purdue University (Hardback [Second Edition])

The Second Edition of The History of Aerospace Engineering at Purdue was published in November 2010.

Authored by **Professor Skip Grandt, Jr., Professor Emeritus Larry Cargnino and Professor Emeritus Gus Gustafson**, it chronicles Purdue University's leading role in providing the engineers who designed, built, tested, and flew the many aircraft and spacecraft that changed the human progress during the 20th century and into the 21st century.

Available from Purdue University Press - ISBN 10: 155753599X ISBN 13: 9781557535993, it can be bought online at: <http://www.thepress.purdue.edu/titles/format/9781557535993-0>



Distinguished Engineering Alumni 2011

The School of Aeronautics and Astronautics was proud to honor two alumni who received the College of Engineering Distinguished Engineering Alumni Award in February 2011.

Thomas L. Maxwell BSAAE'69

General Manager,
Military Propulsion
Engineering
GE Aviation:

In recognition of his technical and managerial leadership of numerous aircraft engine programs

Maxwell chose Purdue for his undergraduate studies, and then went on to earn a master's degree in aerospace engineering from the University of Cincinnati and an MBA from Xavier University. He stayed in the Cincinnati area to work his way up the ladder at GE Aviation, where he now heads the development and operation of all military engines. Maxwell is responsible for the 25,000 GE military engines that are out in the field, including 80 percent of the engines powering Air Force aircraft in Afghanistan and Iraq.

In a previous position at GE he oversaw the team effort between GE and Rolls-Royce to develop the F136 engine for the F-35 Joint Strike Fighter. That program has continued and the first engines are scheduled to deliver in 2012. He also was tasked with establishing a new Military Product Support Engineering organization to better serve military customers.



(L-R) Tom Maxwell and Gary Payton

Gary E. Payton MSAAE'72

Former Deputy
Under Secretary
of the Air Force
and Astronaut:

In recognition of his technical and managerial leadership in space exploration and development

The love of all things aerospace helped propel Payton through the U.S. Air Force Academy, Purdue University and a career focused on aviation and space flight – a career that would include a spot on the space shuttle Discovery (STS-51C) in 1985.

STS-51C was the first mission dedicated to the Department of Defense. Payton, a major in the Air Force at the time, was selected as payload specialist. By the time Discovery touched down at Kennedy Space Center, Payton had traveled over 1.2 million miles and logged more than 73 hours in space.

Payton retired from active duty in 1995 and went on to high-level positions in the aerospace industry, mostly in the civil service but including two years as a senior vice president at ORBIMAGE, a leading global provider of Earth imagery products and services. When he retired in 2010, he was deputy under secretary of the Air Force for space programs, where for five years he maintained the perfect launch record for national security space missions that had begun in 1999.

100th Anniversary of Purdue's formal connection with Aerospace

The School of Aeronautics and Astronautics was established on the Purdue campus as a separate academic unit on July 1, 1945, but aeronautical engineering activities can be dated back to 1910 when Professor Cicero Bailey Veal from the School of Mechanical Engineering started the Purdue aero club.

Professor Veal graduated with a BSME in 1902 and was on the faculty of Mechanical Engineering from 1905-1917. In addition to starting the Purdue aero club, Professor Veal also gave talks to members of the American Society of Mechanical Engineers (ASME) at Purdue in 1911 – 'Aviation Problems of the Past, Present and Future,' in 1912 – 'Aerial Engineering,' and in 1913 – 'Aeroplanes.'

The first aircraft demonstration was held on June 13, 1911 and was sponsored by the Purdue Alumni Association and the Lafayette Journal newspaper. As part of Gala Week celebrations, Lincoln Beachey and C.C. Witmar flew biplanes for "Aviation Day" held at Stuart Field, which was Purdue's current athletic field. Purdue President, Winthrop E. Stone and George Ade were scheduled to ride as passengers but were unable to do so due to gusty winds. The day attracted an estimated 17,000 people.

More information about the history of the School of Aeronautics and Astronautics can be found at this link. <https://engineering.purdue.edu/AE/AboutUs/History>

1902 Debris photo



Linda Flack
*Celebrates 45
Years AAE*



On May 23, 2011, Linda Flack celebrated 45 years with the School of Aeronautics and Astronautics. Linda joined the School as a secretary in 1966 just after graduating from high school in Morocco, IN. In 1968, she became a secretary for Prof. Cargnino in the scheduling office.

In 2003, Linda was presented with the Customer Service Award as part of the Awards of Excellence from the College of Engineering. Linda was cited as being "a credit to the university" and "has been at the next level for many years."

Linda is the key member who makes the school's graduate programs function smoothly. She handles all details of the applications, enrollment, registration, co-op programs, and more, and she is also the primary contact with current and prospective grad students.

Professor and head of school Dr. Tom Shih said "Linda has done so much to make our school a wonderful place to learn and to work for so many graduate students. She cares so much and does so much for our students. We are truly fortunate to have her." Linda's creativity, dedication, and performance have made her an invaluable resource for all of her 45 years at Purdue.

William E. Boeing

Distinguished Lecture 2010

Purdue University established the **William E. Boeing Distinguished Lecture Series** to express its gratitude to The Boeing Company for its generosity over the years and to honor the memory of its founder.

The 2010 lecture "**Our Nation's Future in Space**" took place on September 7, 2010 and featured **Maj. General Charles F. Bolden Jr.** who was named NASA's 12th Administrator in July 2009. As an astronaut, he flew four Space Shuttle missions, two as commander, from 1986 to 1994, including deployment of the Hubble Space Telescope and the first joint U.S.-Russian Space Shuttle mission. Bolden was named to the U.S. Astronaut Hall of Fame in 2006.

During his visit, General Bolden visited the Neil Armstrong Hall of Engineering and met with the participants of a poster session and 4th and 5th grade students who were taking part in an activity put on by FIRST Robotics. Poster participants from AAE included Prof. Stephen Collicott, Prof. Kathleen Howell, Prof. Wayne Chen and Professor by courtesy Prof. H. Jay Melosh.

Bolden later met Prof. Stephen Heister and Prof. Bill Anderson the Zucrow lab for a tour of the facilities and a tour of the Aerospace Sciences lab by Prof. Steven Schneider.

Purdue president Dr. France Córdova and professor and head of school Dr. Tom Shih introduced Gen. Bolden at the start of the lecture which was broadcast live via webcast on the College of Engineering web page.



Graduate student Amanda Haapala talks to Gen. Bolden at the poster session



(Purdue University photo)

Purdue University and China's Beihang University form joint energy-research labs

On behalf of Purdue University, President Córdova signed an agreement with Beihang University President Huai Jinpeng in April 2011 to form the BUAA-Purdue Joint Laboratory on Energy Systems and the BUAA-Purdue Joint Laboratory on Low Emissions Combustion. Beihang University also is known as Beijing University of Aeronautics and Astronautics.

The energy systems lab will concentrate on research into heat flow and fluid mechanics in "rotating systems" and will be led by Tom Shih, professor and head of Purdue's School of Aeronautics and Astronautics and John P. Sullivan, professor of aeronautics and astronautics and director of the Center for Advanced Manufacturing. Sullivan will lead work associated with diagnostic techniques for fine tuning the experiments. Shih stressed that the research is fundamental and does not involve any commercial applications. Tom Shih was present at the signings in Beijing, said "The work will combine Purdue's strengths in computational modeling and Beihang's strengths in experimentation."

The combustion lab is led by mechanical engineering professor Hukam Mongia and Charles Merkle, Reilly Professor of Engineering in mechanical engineering and aeronautics and astronautics. The laboratory, which also involves the University of Connecticut, will focus on joint activities with Beihang University to further work into low-emission combustors for gas turbines in power generation and aircraft.

Researchers in the combustion lab will use laser-based diagnostic techniques in conjunction with computational modeling, with Purdue concentrating on the modeling aspects of the work.

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).

One of the more unique features specific to Purdue is that distance students take the same courses as on-campus students. The non-thesis degree for distance students is the same degree as for on-campus students.

More details of available classes can be found at the web site

<https://engineering.purdue.edu/AAE/Academics/Grad/DistanceGradEd>

<https://engineering.purdue.edu/ProEd/>

PURDUE
UNIVERSITY
Engineering Professional Education



President France A. Córdoba

Purdue University President France A. Córdoba announced on July 1, 2011 that she will be transitioning out of her role as president of the university during the summer of 2012. She also announced that she is broadening Purdue's mission with a series of bold initiatives in her final year at the university. Córdoba said she remains committed to ensuring Purdue's reputation will be defined by academic excellence, research innovation and global engagement.

When Córdoba assumed the role of president in 2007, she committed to the Purdue Board of Trustees that she would complete the five-year term of her contract. Córdoba turns 65 two weeks after her contract ends.

The first four years of Córdoba's term have been marked by a series of significant accomplishments that include an increase in reputational rankings, a doubling of research awards, establishment of the Global Policy Research Institute, the development of a new College of Health and Human Sciences, and an Office of Engagement that has made significant contributions to the Hoosier workforce and the Indiana economy. Córdoba said that her proudest accomplishment is that each undertaking has had an emphasis on student achievement.

(Purdue University photo/Andrew Hancock)

PURDUE VISITS Sikorsky Aircraft

Jamie Renna, Vice President - Engineering Safety, Test and Evaluation hosted a reception in early November for head of school Dr. Tom Shih and Purdue alumni Sikorsky employees.

Jamie Renna graduated from Purdue with a bachelor's degree in aeronautical and astronautical engineering in 1986. He went on to earn his master's degree in business administration from Rensselaer Polytechnic Institute in 1991. He was a recipient of the prestigious Purdue Outstanding Aerospace Engineers Award presented on November 5th, 2010.

Renna is responsible for conducting required design validation tests for all Sikorsky Aircraft products. He also is in charge of developing and qualifying new and derivative helicopters and systems. He is a member of the American Helicopter Society and Purdue's School of Aeronautics and Astronautics Industrial Advisory Council.



Pictured above - Vice President Renna presented Dr. Shih with a model of a Sikorsky CH-53E Super Stallion helicopter. This helicopter is now displayed on the 3rd floor in Armstrong Hall.

FAA Approves NEXTOR II aviation operations **RESEARCH CONTRACT**



Purdue University will be part of an eight-university consortium forming NEXTOR II, a research program focused on aviation operations research. Purdue faculty members participating in this effort include Professors William Crossley, Daniel DeLaurentis, Inseok Hwang, Karen Marais, and Dengfeng Sun from the School of Aeronautics and Astronautics and Professors Steven Landry and Nelson Uhan from Industrial Engineering.

The new seven-year contract with the Federal Aviation Administration (FAA) will extend and expand the work of the original National Center of Excellence for Aviation Operations Research (NEXTOR). Research expenditures could total as much as \$60M over the length of the contract.

"This is additional evidence that the College of Engineering at Purdue has developed significant capabilities in aviation and air transportation research over the past several years, in large part through the System of Systems Signature Area hiring," says Prof. Crossley. "We look forward to working with our colleagues to help address issues that the FAA, the airlines, and other users of the National Airspace System face as they seek to improve safety, efficiency and availability of air transportation."

Purdue, along with Georgia Institute of Technology and The Ohio State University, join the five universities involved in the original NEXTOR program: the University of Maryland, George Mason University, the Massachusetts Institute of Technology, the University of California – Berkeley, and the Virginia Polytechnic Institute and State University.

These eight core NEXTOR II members are being joined by five affiliates: Embry Riddle, Morgan State University, San Jose State University, University of South Florida and University of Colorado. The affiliates bring individual talent and facilities to the team and expand the involvement to a more diverse group of faculty and students.

The original NEXTOR program was one of the five Centers of Excellence created by the FAA to lead the aviation community in advancing new ideas and paradigms for aviation operations, educating and training aviation professionals, and promoting knowledge transfer among industry, government and academic leaders.

"This is additional evidence that the College of Engineering at Purdue has developed significant capabilities in aviation and air transportation research over the past several years, in large part through the System of Systems Signature Area hiring."

— Prof. Crossley

Industrial Advisory Council 2010-2011

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 school is deeply grateful for the time each member takes to assist our school.

Mr. Frank H. Bauer (BSAAE'79, MSAAE'80)

Chief Engineer • Exploration Systems Mission Directorate • NASA HQ

Mr. Bradley Duane Belcher (BSAAE'82)

(IAP Member) Chief Experimental Engineer • Joint Strike Fighter F136 Engine • Rolls-Royce Corporation

Dr. Paul M. Bevilaqua (MSAAE'68, PhD'73)

Chief Scientist • Lockheed Martin ORD Systems • Lockheed Martin Skunk Works*

Col. (Ret.) Mark N. Brown (BSAAE'73)

Vice President • MCR Federal LLC

Ms. Andrea M. Chavez (BSAAE'88)

Director • Manufacturing & Test Operations • Ball Aerospace & Technologies Corp.

Mr. Michael J. Corso (BSAAE'71)

Department Chair • Tort and Insurance Litigation Department • Henderson, Franklin, Starnes & Holt, P.A.

Mr. Darryl W. Davis (BSAAE'78)

President • Phantom Works • Boeing Integrated Defense System, • The Boeing Company

Mr. Daniel F. Devitt (BSAAE'75)

Sr. Director of Engineering/Chief Engineer • American Eurocopter

Mr. Michael P. Dreessen (BSAAE'83)

Vice President • Sensors & Avionics • Miltec Missiles & Space

Dr. John W. Gallman (BSAAE'84, MSAAE'86)

Principal Engineer • Research and Advanced Technology • Cessna Aircraft Company

Mr. Andrew H. Kasowski (BSAAE'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

Stephen S. Kress (BSAAE'75)

Director • Advanced Air and Missile Defense Programs • Lockheed Martin Corporation

Ms. Mary Kriebel (BSAAE'85)

Propulsion Systems Manager • Northrop Grumman Corporation

Mr. Thomas L. Maxwell (BSAAE'69)

General Manager • Military Systems and Design Integration • GE Aircraft Engines

Mr. David K. McGrath (BSAAE'83, MSAAE'84)

Technical Director, Orion LAS ACM • Tactical Propulsion and Controls • ATK Elkton LLC

Mr. James R. Miller (BSAAE'86)

Vice President • Worldwide Operations • Google, Inc.

Mr. Gary E. Mitchell (BSAE'60)

Retired - Vice President • Boeing Integrated Defense System

Mr. Gary E. Payton (MSAAE'72)

Deputy Under Sec. for Space, Retired • United States Air Force

Ms. Erika J. Pearson (BSAAE'93)

Business Director/Deputy VP Asia Pacific Sales • The Boeing Company

Mr. James P. Renna (BSAA'86)

Vice President, Engineering Safety, Test and Evaluation; Sikorsky Aircraft Corporation

Dr. Richard Byram Rivir (BSAE'60)

Chief Scientist, Propulsion Directorate • United States Air Force

Mr. Charles Robert Saff (BSAAE'71)

Boeing Technical Fellow • The Boeing Company

Mr. Randal E. Secor (BSAAE'76)

F35 Deputy Program Manager - JSF • Northrop Grumman Corp.

Dr. Robert L. Strickler (BSAE'60, MSAE'62, PhD ME'68)

Private Consultant

Dr. Anthony L. Thornton (PhD'92)

Deputy to Vice President for Technology & Programs • Defense Systems & Assessments • Organization 5220 • Sandia National Laboratories

Mr. William "Ted" Torgerson (BSAAE'83)

Director - Proprietary Programs • Advanced Global Strike, Phantom Works • Boeing Defense, Space and Security

Mr. John J. Walsh (BSAAE'82)

President • Sypris Electronics LLC



Artist's impression



NASA'S Gravity Probe B Confirms Two Einstein Space-Time Theories

After 34 years of research and development, 10 years of flight preparation, a 1.5 year flight mission and 5 years of data analysis, NASA's Gravity Probe B (GP-B) mission has confirmed two key predictions derived from Albert Einstein's 1916 general theory of relativity, which the spacecraft was designed to test. The findings are online in the journal *Physical Review Letters*.

In the early 1990's **Prof. Steven Collicott** and a number of students had the opportunity to be part of this exciting work. GP-B advanced the frontiers of knowledge and provided a practical training ground for 100 doctoral students and 15 master's degree candidates at universities across the United States. Purdue's role on the team is documented in:

- MS thesis: **Robert Bayt**, "Prediction of End-cap Effects on Equilibrium Helium Bubbles in the Gravity Probe-B Spacecraft," 1995.
- Undergrad AIAA research paper: **M. Stephen Krautheim**
- Conference papers also involved grad students **Scott Courtney** and **Yongkang Chen**

The experiment was launched in 2004, used four ultra-precise gyroscopes to measure the hypothesized geodetic effect, the warping of space and time around a gravitational body, and frame-dragging, the amount a spinning object pulls space and time with it as it rotates. GP-B determined both effects with unprecedented precision by pointing at a single star, IM Pegasi, while in a polar orbit around Earth. GP-B completed its data collection operations and was decommissioned in December 2010.

The entire account of Gravity Probe B with fact sheets and presentations can be found at the following web sites:

http://www.nasa.gov/mission_pages/gpb/
<http://einstein.stanford.edu/>

Terri Moore Retirement May 31st



After 31 years of dedicated service, Terri Moore retired on May 31, 2011.

Terri started at Purdue in 1981 in the School of Aeronautics and Astronautics as a technical typist. She was promoted to assistant to the head of the School of Aeronautics and Astronautics in 1985 under Dr. Henry Yang. Throughout her career, Terri has been the cornerstone of the department and subsequently worked under Dr. Skip Grandt, Dr. John Sullivan and Dr. Thomas Farris.

Current head Dr. Tom Shih said
"Throughout her career, Terri has always given us her utmost in providing help and service. In the almost two years that I have been here, Terri has been an incredible resource and help on so many things. Terri will be greatly missed."

We wish Terri best wishes on her retirement.

THE TWELFTH ANNUAL

Outstanding

AEROSPACE ENGINEER AWARDS



Seven graduates of the School of Aeronautics and Astronautics were honored with the School's highest honor at the 12th annual Outstanding Aerospace Engineers Award on November 5, 2010 at the Holiday Inn Select, Lafayette, IN.

"The Purdue University designation, Outstanding Aerospace Engineer, recognizes the professional contributions of graduates from the School of Aeronautics and Astronautics and thanks them for the recognition that their success brings to Purdue and the School," said Tom Shih, School head.



Jamie Renna with Purdue President France Córdova



John Rich (middle) with his son Tim (left) greet Ronnie Miller



Masters of Ceremonies Allie Battocletti and Andrew Rettenmaier



Prof. Kathleen Howell (center) with graduate students (L-R) Mar Vaquero, Aurelie Heritier, Amanda Knutson, and Jeff Stuart



Doug and Jill Bowers with Prof. Wayne Chen



Professor Emeritus Gus Gustafson with James and Lessie Miller



AAE Honorary Industry Professor Al S. Novick, Betsy Spencer and Prof. Emeritus Gus Gustafson

The 2010 recipients were:



Douglas L. Bowers
BSAAE'72
 Technical Director, Propulsion
 Directorate, Air Force
 Research Laboratory
 WRIGHT-PATTERSON
 AIR FORCE BASE



Mark A. Burgess
BSAAE'78, MSAAE'79
PhD'02
 Chief Engineer
 BOEING RESEARCH
 & TECHNOLOGY/
 ENGINEERING
 OPERATIONS &
 TECHNOLOGY



Joel C. Gentz
BSAAE'07
 (posthumously)
 First Lieutenant
 U.S. AIR FORCE



James R. Miller
BSAAE'86
 Vice President,
 Worldwide Operations
 GOOGLE, INC.



Leo Millstein
BSAAE'70
 Chief Counsel,
 BAE Systems
 TECHNOLOGY SOLUTIONS
 & SERVICES INC.



Jamie Renna
BSAAE'86
 Vice President,
 Engineering Safety,
 Test and Evaluation
 SIKORSKY AIRCRAFT



Matthew P. Szolwinski
BSAAE'93, MSAAE'95,
PhD'98
 Chief Engineer
 and Manager, GENx
 Systems Engineering
 GE AVIATION



2010



(L-R) Professor Emeritus 'Gus' Gustafson, Larry Cargino and George Palmer, Dr. Allen S. Novick OAE'06, Dr. Matthew Szolwinski, Mark Burgess, Leo Millstein, James Miller, Kathryn Gentz - widow of Joel Gentz, Douglas Bowers, Dr. Tom Shih, Jamie Renna, John Rich OAE'01, Ronnie Miller OAE'03 and Andrew Simo OAE'07.



Judith and Steven Gentz with Kathryn Gentz, Anne Sullivan, Shawn Sullivan, Amanda Sullivan, Patrick Sullivan with Tom Shih



Frances and Professor Emeritus Larry Cargino



Matthew and Jennifer Szolwinski with Anna and Adam



Jamie and Carol Renna with Jack, Ben and Olivia



13TH 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
2011 Outstanding Aerospace Engineer Awards**

Friday, October 21, 2011

RECEPTION AT 6:30 P.M.

DINNER AT 7:30 P.M.

University Plaza Hotel

3001 NORTHWESTERN AVENUE
WEST LAFAYETTE, IN 47906

Adult Meal \$40

Student Meal \$30

Seating is limited. Reservations must be received by September 30, 2011.

If you would like to attend, please complete the form on the
opposite page and mail in with the total amount due.

RECIPIENTS OF THE

2011 Outstanding Aerospace Engineer Awards

A. Dwight Abbott BSAE'58; MSIA'65
Michael J. Corso BSAAE'71
Robert J. Flemming Jr. BSAAE'67
G. Wayne Hawk BSAE'51
Stephen S. Kress BSAAE'75
Gary E. Mitchell BSAE'60
Michael P. Moses B.S. Physics'89; MSAAE'95
Jane M. Quirk BSAAE'84
Paul L. Shattuck BSAAE'73
Wayne S. Tygert BSAAE'85

13TH ANNUAL

Outstanding Aerospace Engineer Awards Friday, October 21, 2011

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

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

Make checks payable to:
Purdue Research Foundation

Sorry no phone
reservations accepted.

Seating is limited.

Reservations must
be made by
September 30, 2011.

____ ADULTS @ \$40 each

____ STUDENTS @ \$30 each

I am interested in sponsoring ____ students @ \$30 each

Name _____

Guest Name _____

Degree/Year _____

Address _____

City _____ State _____ Zip _____

Phone _____

E-Mail _____

Vegetarian or special meal – please specify _____

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. Lyrantzis**
Professor and Faculty Scholar, Associate Head for Graduate Education; Ph.D., Cornell, 1988
- S. P. Schneider**
Professor; Ph.D., Caltech, 1989
- T. I-P. Shih**
Professor and AAE Head; Ph.D., The University of Michigan, 1981
- J. P. Sullivan**
Professor; Sc.D., Massachusetts Institute of Technology, 1973
- M. H. Williams**
Professor and Associate Head; Ph.D., Princeton, 1975

Aerospace Systems

- D. Andrisani II**
Associate Professor; Ph.D., SUNY at Buffalo, 1979
- B. S. Caldwell (By Courtesy)**
Professor of Industrial Engineering; Ph.D., University of California-Davis, 1990
- W. A. Crossley**
Professor; Ph.D., Arizona State, 1995
- D. A. DeLaurentis**
Associate Professor; Ph.D., Georgia Institute of Technology, 1998
- I. Hwang**
Associate Professor; Ph.D., Stanford University, 2004
- K. Marais**
Assistant Professor; Ph.D. Massachusetts Institute of Technology, 2005
- J. P. Sullivan**
Professor and Director of the Center for Advanced Manufacturing; 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. L. Filmer**
Adjunct Professor; Ph.D., Wisconsin, 1961
- J. L. Garrison**
Associate Professor; Ph.D., University of Colorado at Boulder, 1997 (By Courtesy - Associate Professor of Electrical and Computer Engineering)
- K. C. Howell**
Hsu Lo Professor of Aeronautical and Astronautical Engineering; Ph.D., Stanford, 1983
- J. M. Longuski**
Professor, Ph.D., Michigan, 1979
- H. J. Melosh (By Courtesy)**
Distinguished Professor EAS/Physics

Dynamics and Control

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

Propulsion

- W. E. Anderson**
Associate Professor; Director of Global Engineering Program; Ph.D., The Pennsylvania State University, 1996
- J. P. Gore (By Courtesy)**
Reilly University Chair Professor of Engineering and Jefferson Science and Technology Fellow with S/SRGIA - Special Representative for Global Intergovernmental Affairs at the U.S. State Department (on Leave 2010-2011). Vincent P. Reilly Professor of Mechanical Engineering; Ph.D., The Pennsylvania State University, 1986
- S. D. Heister**
Raisbeck Engineering Distinguished Professor for Engineering and Technology Integration; Director, Maurice J. Zucrow Laboratories Ph.D., UCLA, 1988
- I. Hrbud**
Adjunct Assistant Professor; Ph.D., Auburn University, 1997

- N. Key (By Courtesy)**
Assistant Professor of Mechanical Engineering; Ph.D., Purdue University, 2007
- R. Lucht (By Courtesy)**
Ralph and Bettye Bailey Professor of Combustion in Mechanical Engineering; Ph.D., Purdue 1981
- C. L. Merkle**
Reilly Professor of Engineering; Ph.D., Princeton University, 1969; Joint appointment with Mechanical Engineering
- A. S. Novick**
Honorary Industry Professor; Ph.D., Purdue University, 1972; Vice President Rolls-Royce (Retired)
- T. L. 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. F. Son (By Courtesy)**
Associate Professor of Mechanical Engineering; Ph.D., University of Illinois, 1993

Structures & Materials

- W. Chen (Joint appointment with Materials Engineering)**
Professor; Ph.D., California Institute of Technology, 1995
- W. A. Crossley**
Professor; Ph.D., Arizona State, 1995
- J. F. Doyle**
Professor; Ph.D., Illinois, 1977
- T. N. Farris**
Adjunct Professor; Ph.D., Northwestern, 1986
- A. F. Grandt**
Former 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; Joint appointment with Chemical Engineering and Materials Engineering
- C. T. Sun**
Neil A. Armstrong Distinguished Professor; Ph.D., Northwestern, 1967
- V. Tomar**
Associate Professor; Ph.D., Georgia Tech, 2005
- T. A. Weisshaar**
Professor; Ph.D., Stanford, 1971



(L-R) Prof. Steven Collicott; Prof. Kathleen Howell, and Prof. John Sullivan

School of Aeronautics and Astronautics PROFESSORS HONORED

Three AAE professors were among the recipients of the 2011 College of Engineering Faculty Awards of Excellence.

A.A. Potter Award — **Kathleen C. Howell** for her excellence in the evolution of groundbreaking course design along with continued success in cultivating student interaction and engagement.

Advising — **Steven H. Collicott** nominated by Alten F. Grandt, Jr., for nurturing the growth of his students and his success advising teams participating in the NASA Reduced Gravity Student Flight Opportunities Program.

Engagement/Service — **John P. Sullivan** nominated by Alten F. Grandt, Jr., for his superlative efforts recruiting potential students while engaging alumni and research sponsors in the aerospace industry.

They were honored during the 9th annual Engineering Faculty Awards of Excellence Banquet on April 16, 2011 held at the Holiday Inn City Center and we congratulate them for their well deserved recognition.

Professor Jay Gore - Founding Energy Center director chosen for prestigious national service

Jay Gore, (AAE by Courtesy) Reilly University Chair Professor and Energy Center founding director, was selected as a Jefferson Science and Technology Fellow

Award in August 2010. This includes selection by the National Academy of Sciences and appointment by the U.S. Department of State Science Advisor to Secretary Hillary Clinton.

Gore was associate dean of engineering for research and entrepreneurship from 2002 to 2007. His research interests are in combustion and radiation heat transfer with applications in pollutant reduction, efficiency enhancement, and fire safety. He has authored or co-authored more than 300 archival journal and conference papers and book chapters. He is a fellow of the ASME and the American Institute of Aeronautics and Astronautics and served as an associate editor of the ASME Journal of Heat Transfer and of the AIAA Journal. He also served as the Central States Section chair and U.S. technical editor of the 26th International Symposium for the Combustion Institute.



Prof. Vikas Tomar – Garners Awards and Promotion



Congratulations also to Prof. Vikas Tomar who was promoted to Associate Professor with tenure in April 2011. He was selected as the inaugural recipient of **The Elsevier and Materials Science and Engineering C Young Researcher Award** in April 2011. This award recognizes research excellence in experimental and theoretical topics at the interface of the biological sciences and materials engineering by individuals who are thirty-five years old or younger.

Prof. Tomar is also the recipient of the **ASME Materials Division Orr "Early Career" Award** for 2010.

This Early Career Award is given by the Orr Family through the Materials Division of the ASME to recognize early career research excellence in the general area of Failure of Materials, with particular emphasis on experimental, computational, and/or theoretical aspects of fatigue, fracture, or creep. Any researcher within 5 years of terminal degree and working in experimental, computational, and/or theoretical aspects of fatigue, fracture, or creep can be considered for the Materials Division Orr Early Career Award. Prof. Tomar will receive his award at the Materials Division Reception at the annual ASME IMECE meeting in 2011.

In May 2011, Prof. Tomar was the recipient of the **Louis Stokes Alliances for Minority Participation – Indiana (LSAMP) Outstanding Mentor Award**. The (LSAMP) program is one of a sequence of four NSF programs which seek to build productive capacity and output within institutions with significant enrollments of minority populations underrepresented within science, technology, engineering, and mathematics (STEM) professionals.

Prof. Dan DeLaurentis working to improve missile defense



Prof. Dan DeLaurentis is working with the U.S. Department of Defense's Missile Defense Agency to develop software that would improve the ability to manage the large volume of incoming data during an enemy attack. DeLaurentis is leading the project and

working with Saurabh Bagchi, an associate professor in the School of Electrical and Computer Engineering.

The research is funded upon the "system of systems" activities taking place in the SoS Laboratory in AAE and deals with many facets that must mesh together in complex systems.

The work aims to enable more efficient and effective battle management and command and control of the missile defense system with new software algorithms that will include consideration of flight characteristics of enemy missiles and interceptors as well as sensor network features. The "enhanced command and control" architecture will take input from various sensors - information from radar, satellites, reconnaissance aircraft and ships.

The research is funded with a 15-month, \$1.2 million contract from the U.S. Missile Defense Agency and is anticipated to continue at similar levels for an additional two years.

The researchers also will work toward making the system resistant to enemy cyber attacks on the command and control computers. The system will run on computers in forward combatant command regions and the command center back in the United States, with some algorithms originating at either point.

The work will involve about 10 graduate students and two research scientists dedicated to the project. The research group at Purdue also will develop and implement simulations for potential architectures. The simulations will enable the Missile Defense Agency to make informed decisions on future hardware and software experimentation and development efforts.



Melosh holds a model of the comet Tempel 1 (Purdue University photo/Andrew Hancock)

Purdue professor part of NASA comet mission

Jay Melosh, distinguished professor of earth and atmospheric sciences and physics and AAE (by courtesy) was part of the science team evaluating the comet Hartley 2 from NASA's Deep Impact spacecraft on Nov. 4, 2010.

The mission - EPOXI and the Deep Impact spacecraft was speeding toward the comet at more than 27,000 miles per hour, it reached its closest distance, within 434 miles of the comet, at 9 a.m. Eastern time on Thursday (Nov. 4). This marks only the fifth time in history that a spacecraft has been close enough to take images of a comet's nucleus.

The spacecraft was at its closest range for only about five minutes. Although the spacecraft returned thousands of images of the comet, only about five really good close-ups are expected due to the very high speed of travel.

Melosh's expertise lies in understanding what causes jets of gas and dust to burst from comets and, in 2008, was the first to publish a probable mechanism. Melosh was part of a mission five years ago that used the Deep Impact spacecraft to launch a probe into the comet Tempel 1.

Purdue Faculty Recognized

At a convocation held on April 28, 2011, Leah H. Jamieson, John A. Edwardson Dean of Engineering and Professor (by courtesy) H. Jay Melosh, earth and atmospheric sciences and physics were both recognized as being inducted into the American Academy of Arts and Sciences in 2011.



Jamieson



Melosh

Professor Terry A. Weisshaar

Professor Terry A. Weisshaar retired from a 41 year career in academia and government at the end of the 2010-2011 academic year. His career included positions at three major universities and he is widely recognized for his work in the field of aeroelasticity, the interaction between structures and aerodynamic loads that can lead to catastrophic in-flight failure. He had an appointment during the 1995-96 academic year, to the Jerome Hunsaker Distinguished Visiting Professorship at M.I.T. He is an elected **Fellow of the AIAA**, and is a recipient of the prestigious **Structural Dynamics and Materials Award**, conferred by AIAA in 2005.

As one of the foremost leaders in the engineering field known as aeroelastic tailoring, the combination of advanced composites design and aeroelasticity, his research interests and team efforts led to and supported the development of the X-29 forward swept wing demonstrator; an airplane now on display at the U.S. Air Force Museum of Flight in Dayton, Ohio and the National Air and Space Museum in Washington, D.C. He was also an early contributor to smart materials aeroelasticity efforts. His widely cited, seminal research in both areas led to other research efforts with hundreds of papers being published in these two areas during the past three decades. He has been a frequent keynote speaker in these areas at national and international conferences and has also been a guest and lecturer for international programs in Israel, Russia, Japan and South Korea.

Professor Weisshaar has been recognized for his distinguished public service, including government advisory committees and professional society leadership. His government service was recognized with the awarding of the **Air Force Distinguished Civilian Service Medal** and the **Secretary of Defense Distinguished Civilian Service Award**. He is also the recipient of the **ASME Aerospace Division Shuttle Flag Award** to recognize service to the Aerospace Division of the ASME. This service includes **Chairmanship of the Aerospace Division**.

Professor Weisshaar served as a **Program Manager at the Defense Advanced Research Projects Agency (DARPA)**, the legendary research arm of the Department of Defense from 2002-2006. At DARPA, he led the Morphing Aircraft Structures (MAS) program that developed radical shape-changing aircraft. This effort culminated with successful NASA wind tunnel tests of two advanced concept models as well as flight of a small demonstrator. During his four-year service at DARPA he fostered research programs ranging from space system concepts to advanced materials.

In addition to National leadership and engineering contributions, Professor Weisshaar is a dedicated teacher. He is a two time recipient of the School of Aeronautics and Astronautics **Elmer Bruhn Award**, established to recognize teaching. He has taught an undergraduate structures course as well as senior Aircraft design and he has developed a new course in aerospace systems. In 1985 he was recognized as the **AIAA Great Lakes Section Advisor of the Year**. At the graduate level he developed a course in aircraft aeroelasticity. His notes have been used at other universities, both in this country and abroad. He and his students have produced over 100 archival and conference papers and reports in the area of aeroelasticity, aircraft design and aircraft structural dynamics. He has been major advisor to 45 Masters and Ph.D. students.



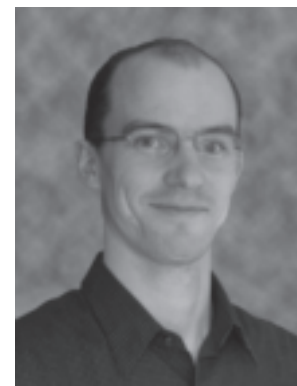
Mary and Terry Weisshaar

Purdue, Taiwan institute to collaborate on hydrogen

Purdue University's Energy Center and the Industrial Technology Research Institute in Taiwan have agreed to collaborate on hydrogen storage research. The collaboration will focus on safety aspects of high-pressure hydrogen storage and other shared research interests of the Energy Center's Hydrogen Systems Lab and ITRI.

Leading the collaboration are Timothée Pourpoint; Maureen C. McCann, Energy Center director; and Chao-Ho Lan, a researcher with ITRI and Green Energy and Environment Research Laboratories. Purdue's Global Engineering Program also is involved.

Under the agreement, the Energy Center and ITRI will carry out joint projects in areas of mutual interest; exchange technical information and expertise; exchange personnel on a mutually beneficial basis; and explore opportunities for collaboration in other areas. The collaboration resulted from a speech Pourpoint gave at a Taiwanese hydrogen energy workshop led by Lan last year.



Prof. Timothée Pourpoint

faculty NEWS



**AAE Assoc.
Professor
William Anderson**

October 2010

Rocket Engine Stability Workshop

Anderson presented experimental results used for benchmarking advanced CFD codes in Munich Germany in October 2010 at the Rocket Engine Stability Workshop in Munich.

December 2010

Named Global Engineering Program Director

AAE Assoc. Prof. William Anderson was named as Director of the Global Engineering Program in December 2010. He will serve during the 3 year research leave of its current director, Rabi Mohtar.

The GEP Team is the advocates of the global engagement, learning and discovery initiatives within their schools or units and campus wide. GEPT (Global Engineering Program Team) members work with the GEP office to increase their school's faculty and student involvement in the global engagement, learning and discovery activities offered by the College of Engineering and by other campus units. GEPT members will work to maximize the impact of the faculty, student and community involvement in Engineering's global programs.

January 2011

Names AIAA Associate Fellow

Anderson was named AIAA Associate Fellow in January 2011 and was recognized at the Aerospace Sciences Meeting in Orlando FL.

February 2011

Memorandum of Agreement

Anderson developed a Memorandum of Agreement for education and research between Purdue and La Sapienza (Rome) on space propulsion which was signed in February, 2011. The MoA sets the procedures for collaborative research and education in remote sensing and space propulsion. A visiting scholar from La Sapienza arrived at Purdue in April 2011.

March 2011

National Research Council

Anderson also served on a National Research Council (NRC) panel to evaluate the NASA launch propulsion technology roadmap at Cal Tech on March 23, 2011.



**Professor
James
Longuski**

AIAA Region III Student Conference Technical Paper Competition

May 2010 grads **Katherine Brumbaugh & Chris Spreen** collaborated with Prof. James Longuski following his AAE450 Spring 2010 Senior Spacecraft Design Class. At the AIAA Region III Student Technical Paper Competition, the team presented 'Project Kronos'. They took 2nd place with their paper 'Exploring Titan with an Orbiter, Airship and Lake Lander: A Feasibility Study.'

W. A. Gustafson Award

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

Congratulations to Prof. James Longuski for this honor. Prof. Kathleen Howell and Prof. Art Frazho were close runners at 2nd and 3rd respectively.

Professor Alten F. Grandt, Jr.

July 2010

Distance Faculty Award 2010

Congratulations to Prof. Alten F. Grandt, Jr. who was the recipient of the 2010 Distance Faculty Award.

July 2010

Royal Australian Air Force

Through the instigation of Professor "Skip" Grandt, the School of Aeronautics & Astronautics has enjoyed a relationship with the Royal Australian Air Force for over twenty five years and sixteen RAAF officers have obtained masters degrees from the School of Aeronautics and Astronautics.

In July 2010, Skip Grandt received a letter of appreciation from Air Commodore D. E. Tindal for "*sustained contribution in post-graduate education you have made over the past 25 years to the Royal Australian Air Force.*"

Former AAE MS students shown with Skip Grandt L-R: Ben Main (MSAAE'04), Richard Kloeden, (MSAAE'07) Galen Needham (MSAAE'09), Matthew Grinham (MSAAE'06), and Nathan Tate (MSAAE'08).



RAAF presentation to Skip Grandt taken July 22, 2010 at RAAF Base Williams, Laverton, Victoria, Australia



Professor Kathleen Howell Hsu Lo
Professor of Aeronautical and Astronautical Engineering

March 2011

ITaP partnership looks at making 3-D projection a classroom staple

Prof. Kathleen Howell has collaborated with ITaP Envision Center for Data Perceptualization to improve classroom technology with a pilot project adding 3-D stereoscopic projection in a regular classroom. An understanding of 3-D rotation is integral to communicating with, aiming and controlling spacecraft, as well as modeling the processes. In engineering generally, three-dimensional thinking and 3-D rotation are among the most difficult concepts to teach and learn. This effort will make it easier for students to grasp the meaning behind the numbers.

April 2011

Inducted into Iowa State University's Department of Aerospace Engineering Hall of Distinguished Alumni

Prof. Kathleen Howell was inducted into Iowa State University's Department of Aerospace Engineering Hall of Distinguished Alumni on Friday, April 8, 2011.



Professor Stephen Heister - Raisbeck
Engineering Distinguished Professor of Engineering and Technology Integration

October 2010

Appointed as Raisbeck Engineering Distinguished Professor of Engineering and Technology Integration

The Purdue University Board of Trustees ratified the appointment of Stephen D. Heister as the Raisbeck Engineering Distinguished Professor for Engineering and Technology Integration.

In 2003, he helped form the Rolls-Royce University Technology Center in High Mach Propulsion and has been its director since that date. He also has been an active researcher at Purdue's Maurice J. Zucrow Laboratory in both gas turbine and rocket propulsion areas. He has also been a University Faculty Scholar.

The School extends deep thanks to **James D. Raisbeck (BSAE'61, DEA'79, OAE'99 and HDR'05)** and his wife, **Sherry L. Raisbeck**, whose gift to Purdue established this Distinguished Professorship.

March 2011

Named new Director of Zucrow

Stephen Heister has accepted the position as the new Director of the Maurice J. Zucrow Laboratories. In this position, Dr. Heister will also have a 0.25 appointment at Purdue's School of Mechanical Engineering. We look forward to Dr. Heister's leadership in making an already outstanding MJZ Labs achieve even greater impact.

April 2011

2011 Elmer F. Bruhn Teaching Award Recipient

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 Stephen Heister is this year's winner of the Bruhn Award.

Other top candidates for the Bruhn Award were: Jim Longuski, Steven Collicott, Alina Alexeenko, and Greg Blaisdell. Professors Kathleen Howell and William Crossley were not eligible because of winning the award during the last 2 years. Congratulations to all for this recognition of their teaching efforts.

Prof Heister is now the school's nominee for the engineering wide 2012 A.A. Potter Best Teacher Award.

Professor Tasos Lyrintzis

August 2010

Associate Head of the Graduate Program

Effective fall 2010, Prof. Tasos Lyrintzis was appointed to serve as Associate Head of the Graduate Program, Professor Marc Williams continues in his role as Associate Head for the Undergraduate Program.

Professor Lyrintzis is a Faculty Scholar and serves as chair of the School's Graduate Program. He is a registered Professional Engineer, a Purdue University Faculty Scholar, an AIAA Associate Fellow, an American Society of Mechanical Engineers (ASME) Fellow, and a Boeing Welliver Fellow.

August 2010

1st place in the AIAA Region III Graduate Division

Grad student Chandra Sekhar Martha took 1st place in the AIAA Region III Graduate Division - He progressed to the International competitive Aerospace Sciences Meeting.

November 2010

Recipient of the C.T. Sun Research Award

The C.T. Sun Research Award is presented annually to an individual or a team of faculty members in the School of Aeronautics & Astronautics to recognize high quality contributions in science and engineering.

Congratulations to Tasos Lyrintzis for this honor.



(L-R) Sirisha Bandla, Zack Richardson, Drew Feustel, Dan Kolenz, Paul Frakes, Austin Hasse



AAE's 33rd & Purdue's 45th team to fly on NASA's "Vomit Comet"



(L-R) Zach Richardson, Drew Feustel, Austin Hasse, and Paul Frakes
Location: Ellington Field - ZeroG Corp 727. Photographer: Robert Markowitz NASA-JSC

AAE's 33rd & Purdue's 45th team was accepted to fly in June 2011 in NASA's *Reduced Gravity Student Flight Opportunities Program*, or RGSFOP. They were part of **Prof. Steven Collicott's** unique design-build-test class AAE418 - Zero-Gravity Flight Experiment class. The team's proposal led by *Sirisha Bandla* was "*Scaling of Diaphragm Tank Models and Dynamics in Low Gravity.*" The team worked since August 2010 in experiment design, spacecraft propellant system details, K-12 outreach, proposal writing, and fabrication of prototypes to show the feasibility of the unique parts of the proposed experiment construction techniques.

The full team of: David Lynch, Mike McCarthy, Austin Hasse, Dan Kolenz, Zachary Richardson, Sirisha Bandla, Matthew Hill, Rajat Dua, and Paul Frakes were joined in weightlessness by Andrew Feustel, Purdue alumnus and NASA astronaut. Feustel had recently returned from orbit on STS 134, the last flight of Space Shuttle Endeavour on its 16-day mission to the International Space Station. During the mission, Feustel lead three out of four spacewalks to perform critical installations and maintenance.

NASA's KC-135 aircraft, also affectionately known as the Vomit comet provides periods of weightlessness lasting about 25 seconds during downward 'parabola' giving student's scant time to ready their experiments for the next parabola. Purdue has had one or more teams every year selected since the program began in 1996.



Prof. Steven Schneider selected to receive NASA Engineering and Safety Center Group Achievement Award

Prof. Steven Schneider was the recipient of the NASA Engineering and Safety Center Group Achievement Award, "Orbiter Boundary Layer Transition Flight Experiment Team," in October 2010. He was part of a team that developed the system used to estimate the effect on transition of roughness that develops in flight. This award honors outstanding accomplishments that have substantially contributed to the achievement of the of NESC mission.

Chair, NATO AVT-200

Prof. Steven Schneider was Chair, NATO AVT-200, "Hypersonic Laminar-Turbulent Transition." This Specialists Meeting will be held in Spring 2012. The Co-Chair is Prof. Rolf Radespiel from TU Braunschweig.

AAE Asst. Prof. Alina Alexeenko receives the NSF CAREER Award

AAE Asst. Prof. Alina Alexeenko was chosen in February 2011 as a recipient of the NSF CAREER Award for her proposal entitled "Quantifying and Exploiting Knudsen Thermal Forces in Nano/Microsystems."



The NSF funds research and education in science and engineering, through grants, contracts, and cooperative agreements. The Foundation accounts for about 20% of federal support to academic institutions for basic research.

1st place in Poster Competition

Grad students **Jeremy Nabeth** and **Sruti Chigullapalli** won 1st place with Prof Alexeenko in the Poster Competition at the 27th International Symposium on Rarefied Gas Dynamics, Pacific Grove, CA, July 10-15, 2010.

Congratulations to Professor C.T. Sun who received two distinguished awards during the last year

Merit Award from the University of Northwestern's Alumni Association

Prof. C.T. Sun the Neil A. Armstrong Distinguished Professor of Aeronautics and Astronautics was honored at the Northwestern Alumni Association Alumni Awards on October 8, 2010 at the Union League Club of Chicago. He was the recipient of a Merit Award and was one of nineteen alumni, representing fields ranging from media to business to medical research, who were similarly honored.

AIAA 2011 Walter J. and Angeline H. Crichlow Trust Prize

The Walter J. and Angeline H. Crichlow Trust prize is given by AIAA every four years for excellence in aerospace materials, structural design, structural analysis, or structural dynamics.

The award was presented to Professor C.T. Sun on April 6, 2011 at the 52nd AIAA Structures, Structural Dynamics, and Materials Conference awards luncheon. The award consists of a medal and a certificate of citation. Professor Sun's citation read: "For pioneering developments in damage tolerant design in composite structural mechanics and for seminal contributions to academic programs in composite structures and materials."



(L-R) Daughter-in-law Kristy, son Clifford, CT Sun, wife Iris, daughters Edna and Leslie



Chancellor Henry T. Yang

Former AAE Head Dr. Henry T. Yang receives an honorary degree from West Virginia University

Chancellor Henry Yang was the commencement speaker at West Virginia University on May 14, 2011 where he also received an Honorary Doctorate. Yang has served as the chancellor of the University of California, Santa Barbara since 1994 and was formerly the Neil A. Armstrong Distinguished Professor of Aeronautics and Astronautics at Purdue University, where he also served as the dean of engineering for 10 years.

Dr. Yang is a member of the National Academy of Engineering and a Fellow of the American Institute of Aeronautics and Astronautics, the American Society for Engineering Education, and the American Society of Mechanical Engineers. He has received numerous awards for his research, teaching, and service, including the Benjamin Garver Lamme gold medal from the American Society of Engineering Education and the 2008 Structures, Structural Dynamics, and Materials Award from the American Institute of Aeronautics and Astronautics. He received his B.S.C.E. degree from National Taiwan University, his master's degree in structural engineering from WVU and his Ph.D. from Cornell University.



Dr. Combustion

2011 Combustion Art Competition

Prof Li Qiao and graduate student Bogdan Pavlov won 2nd prize of the 2011 Combustion Art Competition of the Combustion Institute with Dr. Combustion. The competition was held at the U.S. National Combustion Meeting in Atlanta.

"A family of methane-air counterflow and premixed flames of different configurations with and without addition of nanoparticles. Depending on flame configuration, the particles may pass reaction zone, be heated and irradiate light (nose, beard, and hair). In certain configurations of a counterflow diffusion flame, the reaction zone acts as a strong fluid-dynamics source and diverts the particles, making them not reach the reaction zone (eyes and mouth). A classical methane-air diffusion flame provides Dr. Combustion with an elegant hat as he cannot conceal the joy of discovery."

The Art Competition was initiated in 2004 at the Combustion Symposium in Chicago. Awards were given to the top three entries, which were judged on the basis of creativity and innovation, display and presentation, and scientific and/or aesthetic value.

AAE welcomes two new faculty members



Bane

Dr. Sally Bane (PhD from Cal Tech) joined the school in August 2011 and is an expert in aerodynamics and combustion. Her research at Caltech focused on investigating the process of spark ignition of flammable mixtures and quantifying the risk of accidental explosions, especially as it relates to aircraft safety.



Sangid

Dr. Michael Sangid (PhD from UIUC) joins the school in January 2012 and is an expert on materials and structures. His PhD research was centered around a multi-scale approach to understanding grain boundary effects on crack initiation. His work as a Postdoctoral Research Associate was on heterogeneous deformation of materials and fatigue crack growth testing and modeling of new and emerging materials.

Former AAE Head

Harold M. DeGroff Jr., 90 died Oct. 12, 2010

Harold Miller DeGroff, Jr. 90, Indianapolis, formerly of Connersville and West Lafayette, died on October 12, 2010 in Indianapolis. He was born on May 10, 1920 and was married to the late Sarah (Sally) Meek DeGroff for more than 54 years.

A former naval officer, he attended Cornell University, Rensselaer Polytechnic Institute and California Institute of Technology, where he earned his doctorate in aeronautics and mathematics.

A longtime Purdue University faculty member, he was head the School of Aeronautics and Astronautics from 1955–1963 during the height of the "space race," counting Neil Armstrong and other renowned NASA astronauts as his students. He also served on the faculty of Purdue's Krannert School of Management, was president of Midwest Applied Science Corporation, a pioneer tenant of Purdue's Research Park, and served as vice president of Design & Manufacturing Corporation in Connersville.

Endowed scholarships were recently established at Purdue in his name for students in management or aeronautical engineering who are earning a Certificate in Entrepreneurship and Innovation.

DeGroff was an avid student of history, music and art and an active civic volunteer. Hal and Sally traveled widely and loved nothing more than retracing the steps of the Lewis and Clark expedition, exploring far-flung destinations or retreating to their "home away from home" in Zihuatanejo, Mexico. His greatest pleasures, however, were found at home, where he relished time with family, his Labrador Retrievers, Depression-era tractor and garden.



Training the *scientist-astronaut*

Prof. Steven Collicott – Takes part in the Suborbital Scientist Training Program

Professor Steven Collicott took part in the Suborbital Scientist Training Program at The National Aerospace Training and Research (NASTAR) Center in Pennsylvania in June 2010.

NASTAR offer scientists who would like to accompany their experiments into space a rundown on the physiological stresses they may encounter. Classroom lessons, physiological training, group exercises, and centrifuge simulations of the Virgin Galactic flight profile combine for a full two days of unique training. In particular, NASTAR trains scientists to focus on their experiments and not be distracted by that pretty view outside the window. NASTAR-trained Collicott says that in space he'd rather be a tourist than a scientist. "If I'm ever up there," he says, "I want to look out that window."

***Physics Today* article**

Physics Today, the monthly news publication of the *American Institute of Physics*, featured Professor Collicott's undergraduate students and their first experiment launch attempt with the *Armadillo Aerospace* company. The article in the October 2010 issue showed the global physical sciences community that our undergraduates in AAE418 are leading the way in the use of the emerging commercial sub-orbital space tourism industry for scientific research. SPEAR-1 (Students of Purdue Experimenting on Armadillo Rockets) flew on a low-altitude test flight but was destroyed.

SPEAR-2 flew won a development launch of a different vehicle in April 2011. Professor Collicott and students traveled to the new Spaceport America north of Las Cruces, NM for this launch, thanks to a thoughtful forward-looking grant from the NASA CRuSR program. As can happen in development flights, SPEAR-2 was also destroyed. AAE418 students in the fall of 2011 will build the SPEAR-3 experiment for further testing.

Dr. Shih named AIAA Fellow

Professor and Head of the School of Aeronautics and Astronautics Dr. Tom I-P. Shih was honored as Fellow of the American Institute of Aeronautics and Astronautics (AIAA) in April 2011. The distinction of Fellow is conferred by AIAA upon outstanding members of the Institute who have made notable and valuable contributions to the arts, sciences, or technology of aeronautics or astronautics.

AIAA is the world's largest technical society dedicated to the global aerospace profession. With more than 35,000 individual members worldwide, and 90 corporate members, AIAA brings together industry, academia, and government to advance engineering and science in aviation, space, and defense.

Presentation of the new Fellows and Honorary Fellows took place at the AIAA Aerospace Spotlight Awards Gala, Wednesday, May 11, 2011, at the Ronald Reagan Building and International Trade Center, in Washington, D.C.



The SPEAR-2 team at Spaceport America April 2, 2011.

***New York Times* article**

In February, 2011 the *New York Times* published a story about the emerging sub-orbital space tourism industry and the anticipated scientific uses of these vehicles. Professor Steven Collicott was one of several researchers in diverse fields who were consulted by the reporter and quoted in the article. Professor Collicott's role in leading the scientific community in the use of these vehicles is why he was sought out by the reporter. Professor Collicott notes that AAE Alum John Gedmark is the Executive Director of the Commercial Spaceflight Federation in Washington DC. John is responsible for the many great contacts and opportunities which our faculty and students enjoy in this new enterprise.





PURDUE SPACE

The School of Aeronautics and Astronautics hosted its 15th annual Purdue Space Day (PSD) on October 30, 2010 with Purdue alumnus **David Wolf** as guest VIP. Wolf earned a bachelor's degree in electrical engineering at Purdue in 1978. He also has a medical degree from Indiana University. While he was on campus, he also met with faculty and students from the School of Electrical and Computer Engineering. Wolf gave a public presentation the evening before PSD in Stewart Center's Fowler Hall and was introduced by dean of engineering Leah Jamieson.

Wolf served as chief of the Astronaut Office Extravehicular Activity for most of the Space Station assembly. He led a team that was responsible for space walks from the International Space Station and space shuttles. He has logged 168 days, 12 hours, 56 minutes in space over four separate missions. The longest was 128 days aboard the Russian Mir space station. He also has made seven space walks for a total 47 hours. Wolf's most recent mission, on the Space Shuttle Endeavor, launched July 15, 2009.

Space Day provided over 600 students in grades 3-8 the opportunity to learn about science, technology, engineering and math (STEM) by participating in three age-appropriate activity sessions throughout the day. Wolf addressed the students at the start of Space Day and then participated in activities throughout the day.

Wolf was brought to campus by the College of Engineering, Indiana Space Grant Consortium and the School of Aeronautics and Astronautics.



David Wolf started the day by giving a presentation at the Elliott Hall of Music



Purdue Pete was on hand to welcome the students at the start of PSD (with thanks to Steve Filie)



David Wolf interacted with the 3-8 grade students throughout the day

DAY 2010



The 3-8 grade students are put into 21 space themed groups for the day. AAE grad students Amanda Knutson, Amanda Haapala and Mar Vaquero with their poster



David Wolf with PSD Executive Board (L-R) Jenny DePauw, Jonathan Yuan, Jeremy Lakoskey, Allie Battocletti, David Wolf, David Cronin, Sarah St. Clair, Ben Weiss, Sirisha Bandala. (Not pictured, Ernesto Camarena and Ann Broughton)



Lana M. Couch

**BSAE'63;
DEA'94;
OAE'99**

When Lana M. Couch passed away on April 22, 2007, her husband of 42 years, Richard H. Couch of Mathews, VA, wanted to ensure her memory lived on in the place that she credited with her professional start in life – Purdue University. Lana was always a strong supporter of Purdue University and the School of Aeronautics & Astronautics.

To honor Lana, Dick Couch has created a \$1.5 million provision to endow **The Lana Murphy Couch Professorship of Aeronautics and Astronautics**. This endowment will ensure that the tradition of attracting top faculty continues and allows them to maintain cutting edge research in aeronautics and space technologies.

As a student at Purdue, Lana was interested in experimental research using wind tunnels to generate data on airplanes and rockets. Prof. Cargino was very helpful throughout her four years and Prof. Gustafson taught the first course she had on boundary layer flow. She went on to concentrate her research of fluid mechanics, in combination with heat transfer.

Lana graduated with a degree in aeronautical engineering in 1963 and worked for NASA, Langley Research Center in Hampton, Va. and NASA Headquarters in Washington, D.C. from 1963 through 2003. When she first graduated, she found herself very much in the minority in the engineering profession. When she came back to Purdue in 1990 to speak at a Society of Women Engineers banquet, she was amazed at the increase in the number of women engineers.

She started her career as a wind tunnel test engineer and advanced through a series of increasingly responsible technical and management positions to retire in 2003 as the Associate Director for Business Management at NASA Langley Research Center. She was a member of the Senior Executive Service and a Purdue University Distinguished Engineering Alumnus.

Lana was a Fellow of the American Institute for Aeronautics and Astronautics, and a member of the American Society of Mechanical Engineers. She was the holder of several U. S. and international patents for improvements to wind tunnel design and was the author of many technical papers. She was also the recipient of numerous technical and management awards for her contributions to NASA and to aeronautical sciences including the NASA Exceptional Service Medal, the NASA Exceptional Achievement Medal and the NASA Equal Employment Opportunity Medal.

Radiological and Environmental Management Indemnification (REM)

The School of Aeronautics received department indemnification by Purdue's REM in December 2010 to re-certify for safety compliance. REM walked through with Jennifer LaGuire, Dave Reagan, Terri Moore, and Phil Qualio.

REM was very impressed with the level of environmental, health and safety issues and AAE appreciates everyone's help and cooperation on this accomplishment.



Reach for the Skies

Students from Prof. Stephen Heister's AAE 439 Rocket Propulsion class at their rocket launch on October 24th, 2010.



Round-Up of the 46th Annual AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit in the Best Paper Awards - July 25-28, 2010 in Nashville, TN

Prof. Charles Merkle and **Prof. John Sullivan**, with AAE alum **John Tapee**, and current AAE grad student **Dheeraj Kapilavai**, and two Gulf Stream Aerospace Corporation employees, won Best Paper in the Air Breathing Section for their work entitled "Experimental Testing and Numerical Simulations of Shrouded Plug Nozzle Flowfields."

AAE Assistant Research Professor, **Timothée Pourpoint**, along with 2 other authors, wrote "An Analysis of the Hydrogen Sorption Kinetics of TiCrMn" to win Best Paper in the Energy Section.

Taking the Hybrid Rockets Student Paper Award was the collaboration of Purdue AAE alums, **John Tsohas** and **Brad Appel**, along with current AAE master's students, **Andrew Rettenmaier** and **Michael Walker**, and Purdue AAE Professor **Stephen Heister** for their paper entitled "Development and Launch of the Purdue Hybrid Rocket Technology Demonstrator."

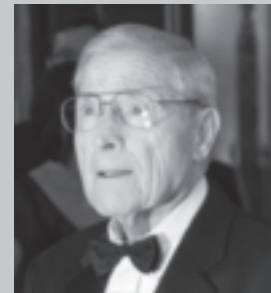
Former Purdue AAE master's student, **Adam Butt**, won Best Paper in the Liquid Rocket section with a paper titled "NASA ARES I Launch Vehicle Roll and Reaction Control Systems Design Status" written with 2 other co-authors.

AIAA/AAS Astrodynamics Specialist Conference Toronto, Ontario, Canada, August 2-5, 2010

Prof. Kathleen Howell with PhD Martin Ozimek and Daniel Grebow received a Best Paper Award at the 2010 AIAA/AAS Astrodynamics Specialist Conference for their technical paper entitled "Solar Sails and Lunar South Pole Coverage."

Congratulations to Dr. Richard W. Taylor BSME'42, HDR'73, OAE'99 *Recipient of the 2010 Philip J. Klass Award for Lifetime Achievement*

Dr. Richard W. Taylor is a former Boeing aircraft designer, test pilot, and technology leader, who made extraordinary aviation contributions in the 45 years he worked for the Boeing Company. He developed the B-47 LABS or "Toss Bombing" techniques for delivering nuclear weapons; he led the design of two-crew flight decks and two-engine jet transport aircraft; and he evaluated engine safety for the 767 Extended Twin Operations (ETOPS) in the 1980s. Dick has published multiple papers shaping FAA Advisory Circulars, and at 89, he continues to fly his Aerostar and participates in volunteer and professional activities.



The Philip J. Klass Award for Lifetime Achievement was presented to Dick at AVIATION WEEK'S 53rd Annual Laureate Award on March 17, 2010 at the Andrew Mellon Auditorium, Washington, DC. These Awards were conceived more than 50 years ago to recognize the extraordinary achievements of individuals and teams in aerospace, aviation and defense. Dick was presented with the School of Aeronautics and Astronautics Honorary Doctorate Award in 1973 when he was Vice President and General Manager of Aeronautical and Information Systems Division, The Boeing Company. He was a recipient of the Outstanding Aerospace Engineer Award in 1999. Dick is a true giant in the field who changed the course of aviation history and Purdue is incredibly honored to have him as an alumnus.



Congratulations to our 2010-2011

graduates

*During the 2010-2011
school year the School
of Aeronautics and
Astronautics awarded
160 BSAAE degrees,
106 MS degrees, and
15 Ph.D. degrees.*

Ph.D. degrees

AUGUST 2010

Ebenezer
Gnanamanickam
Maksud Ismailov
Thomas Juliano
Shih-Chien Lo
Randolph Smith

DECEMBER 2010

Erik Dambach
Joseph Gangestad
Md Enamul Kabir
Kevin Kloster
Farhana Pervin
Oleg Sindiy

MAY 2011

Dung Du
Hwun Park
Hee Seok Roh
Shae Williams

August 2010

BS

Donald Goepper
Sang Jin Kim
Nicholas K. Oschman
Nicholas G. Piercy

MS

Stephan Bluestone
Chase Cummings
Oscar Guzman
Kyle Herwig
Mark James
Aditya Joshi
Annelise Lenz
Tyler Lulich
Darshan Meda
Justin Millhouse
Shalini Mohanty
Joseph Moore
Yuta Morioka
Zubin Olikara
Sarag Saikia
Deepti Singh
Ross Spoonire

December 2010

BS

Gihun Bae
Nicholas T. Boling
Katherine M. Bonenberger
Alex G. Chalk
Alvin E Chang
Amanda F. Chastain
Jung Hoon Choi
Alexander T. Cole
David C. Cronin
Duane F. D'Mello
Andrea J. Ebert
Jeremy C. Edwards
Kevin Fernandes
Jason R. Gabl
John C. Geerer
Grant V. Gertz
Neil A. Gole
Alison J. Gong
Wesley A. Graves
Matthew L. Hansche
Matthew W. Hoffman
Andrew W. Hoft
Ryan D. Huth
Paht Juangphanich
Kyung Sang Kim
Mark P. Krause
Elijah B. Krawciw
Patrick J. La Petina
Travis J. Lee
Rebecca R. Matusiak
John H. Milne

Jeremy A. Moon
Daniel J. O'Brien
Christian R. Owen
Brian M. Palmere
Robert C. Parenti
Rajesh Y. Parikh
Nicholas R. Parsons
Peter M. Psaras
David W. Replogle
Joseph J. Rogan
Andrew J. Sievers
Phillip T. Stout
James A. Tancred
Mitchell T. Townsend
Hans R. Trapp
Charles D. Wagner
Richard G. Weis
Jonathan Y. Yuan

MS

Kurt Aikens
Gonzalo Barrera
Dennis Berridge
Sean Bhise
Shreyas Bidadi
Levi Brown
Leela rama rao
Cherukuri
Amanda Chou
Ian Coker
Paul Creekmore
Brian Day
Delorme Yann

Christopher Fugger
Peter Gilbert
Amanda Haapala
Ana Kerlo
Kelly Leffel
Hannah
Longworth-Mills
Adam Loverro
Karl Madon
Tim Manship
Jason McDowell
Takayuki Nishiie
Jaime Ocampo
Tyler Porter
Vishak Ramaiah
Sai Madhav Ravula
Roger Rovekamp
Gerardo Salazar
Sukruth Satheesh
Mehernaz Savai
Rashmi Shah
Cody Short
Charles Smialek
Laura Steen
Arlene Sudduth
Chee Peng Teng
Mili Vishwakarma
Michael Walker
Brandon Wampler
Christopher Ward
Brittany Wickizer
Shunqing Yang
Xiangang Zhang





May 2010

BS

Farah Adilah Abdullah
 Stephen R. Adams
 Joseph R. Appel
 Nicole A. Arockiam
 Adam A. Ata
 Justin S. Axsom
 Sirisha Bandla
 Allissa C. Battocletti
 Alexandra R. Baucro
 Landon M. Baur
 Todd D. Beeby
 Nickolai D. Belakovski
 Nayanapriya Bohidar
 Kevin H. Bonanne
 Morgan R. Buchanan
 Kwan Leong Chan
 Ashley R. Cole
 Drew D. Crenwelge
 Garrett S. Curtis
 Andrew L. Curtiss
 Sarah Jo De Fini
 Matthew D. Dienhart
 Jared N. Dietrich
 Anthony P. D'Mello
 Julie A. Douglas
 Jeremy M. Dunsing
 Paul U. Duselis
 Adam J. Edmonds
 Thomas W. Feldman
 Alex C. Fickes

Thomas P. Finn
 Frank A. Fortunato
 Aaron J. Foster
 Paul C. Frakes
 Zherui Guo
 Matthew E. Haas
 Konrad S. Habina
 Tyler D. Hall
 Philip L. Halsmer
 Galen K. Harden
 Brian P. Hartel
 Stephen D. Haskins
 Austin P. Hasse
 Evan R. Helmeid
 Michael A. Hill
 Shaun A. Hunt
 Jeffrey R. Intagliata
 Katherine E. Irgens
 Leonard R. Jackson
 Jonathan A.
 Janiszewski
 William R. Johnson
 Graham A. Johnson
 Dean R. Jones
 Daniel C. Kolenz
 Ryan M. Kraus
 Alex C. Kreul
 Dasheng Lim
 Jon Thomas
 Linsenmann
 Timothy F. Luckey

Kimberlee Madden
 Anthony E. Malito
 Laura F. Managan
 David J. Mann
 Raheel A. Mazhary
 Michael F. McCarthy
 Courtney C. McManus
 Zackary L. Means
 Ricardo Mosqueda
 Christopher J. Mueller
 Christopher J. Mueller
 Brendan C. Mueller
 Alexander W. Park
 Keyurkumar D. Patel
 Alan J. Pomp
 Ashley E. Prather
 Zachary S. Richardson
 Jillian A. Roberts
 Peter J. Ronning
 Alexander M. Roth
 Aamod G. Samuel
 Megan L. Sanders
 David P. Schafer
 Trieste L. Signorino
 Pamela J. Slaughter
 Clayborn S. Slonaker
 Dustin N. Souza
 Nicholas G. Stallings
 Elle T. Stephan
 Erik W. Susemichel
 Li Tan
 Thomas S. Tarlton

Sonia A. Teran
 Dustin E. Truesdell
 Dhananjay B. Vasa
 Chintan R. Visharia
 Kathryn A. Vollmayer
 Mizuki Wada
 Benjamin M. Weiss
 Brendon M. White
 Eduardo R. Wiputra
 Danielle N. Woehrl
 Kristin V. Wood
 Elizabeth A. Woodcock
 Allen Da-Chun Wu
 David R. Wyant
 Michael J. Yankel
 Keely D. Yankie

MS

Hyeoncheol Baik
 Chad Bland
 Michael Bociaga
 Jen-I Cheng
 Christopher Dapkus
 Curtis Ewbank
 Adham Fakhry
 Maria Gavilan Alfonso
 James Goppert
 Ryan Goyings
 Mark Guiles
 Daniel Haas
 Maher Hamdan

Jason Huck
 Derrick Jensen
 Alan Kim
 Mintae Kim
 Morgaine Kim
 Fred Kuipers
 Marat Kulakhmetov
 Frank Laipert
 Shian Lee
 Mengchen Liang
 Gerald Lo
 Ajay Madhav
 Andrew Mauer
 Brad McNally
 Andrew Mizener
 Stephanie Mousseau
 Boon Hong Ng
 Scott Perl
 Jeremy Petersen
 Ethan Puchaty
 Sai Ravula
 Timothy Rebold
 David Reese
 Matthew Robichaud
 Blake Rogers
 Steven Rogers
 Brett Sanborn
 Nilesh Shah
 Jeffrey Stuart
 Philip VanSeeters
 Allen Yan
 Jack Yang

CONGRATULATIONS TO ALL OF OUR GRADUATES

STUDENT *awards*

Herbert F. Rogers Award

Courtney McManus

Warren G. Koerner Scholarship

Alex Byers, Jonathan Chrzanowski, Shourya Jain, Joseph Kubinski, Benjamin Paredes, Samantha Rieger, Kenneth Roush, Aamod Samuel, Andrew Savage, Sarah St Clair, Matthew Sunday, Collin York, Megan Youngs

Graduate School Excellence in Teaching Award

Shae Williams

David O. and Linda Schimmel Swain Scholarship

Robert McCabe, Nicholas Sierra, Alexis Turner, Itanza Nichae Wright

George & Patricia Palmer Scholarship

Raymond Strychalski

Purdue Forever Fellowships

Katya Casper, Alfred Lynam, Tatsuya Kotegawa

The Marc Christopher Weaver Memorial Scholarship

Sarah Arnac, Rebecca Johanning, Eric Meier

Indiana Space Grant Consortium Fellowship

Matthew Wierman

Orrin Arthur Austin Memorial Scholarship

Alex Jordan

John and Patricia Rich Scholarship

Nicholas Kowalczyk, Alex Lucky, Shawn Olsavsky, David Replogle, Parthsarathi Trivedi, Logan White

David L. Filmer Scholarship

Pamela Slaughter

Arthur S. Remson Memorial Scholarship

Corey Davis, Paul Frakes

Andrew Kasowski Scholarship

Name withheld by request

Zonta International Amelia Earhart Fellowship

Diane Craig Davis, Amanda Knutson and Farhana Pervin

Peter Mueller Memorial Scholarship

Name withheld by request

Andrea Chavez Scholarship

Jessica Powell

Inaugural INCOSE James E. Long Memorial Post Doctoral Fellowship

Dr. Datu Buyung Agusdinata

Boeing Scholars

Galen Harden, Evan Helmeid, Mark Lefebvre, Laura Managan, Nicholas Stallings, Zachary Stratton

Bisland Dissertation Fellowship

Alfred Lynam

Chappelle Fellowship

Christopher Spreen and Todsadol Rungswang

2010-11 NASA GSRP Fellowship

Alinda Aligawesa

Best Paper Award at the 6th IEEE International Conference on System-of-Systems Engineering

Don Fry. PhD advisor, Associate Professor Dan DeLaurentis, was a co-author on the paper

CS & E Fellowship

Natasha Bosanac

2010 Summer Research Grant

Aurelie Heritier, Navin Davendralingam, Lucia Irrgang, Shae Williams

The Donald C. and Marion E. Currier Scholarship

Kenneth R. Roush

AAE Meritorious Senior Student

Alexandra Baucco

SGT Merit Award 2011

Jonathan Young

SGT Pledge Key Award

Jase Deffibaugh

SGT Great Lakes Regional Undergraduate Award

Galen Harden



(L-R) Prof. Steven Son, Prof. Timothée Pourpoint, David Kittell, Matthew Wierman, Cody Short, Jimmy Chiu, Prof. Martin Corless, and Prof. Tom Shih

AAE Research Symposium

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. Awards are given to recognize excellence in technical presentation skills.

First place - Cody Short

"Lagrangian Coherent Structures in the Restricted Three-Body Problem"

Second place - David Kittell

"Further Development of an Aluminum and Ice Rocket Propellant"

Third place - Matthew Wierman

"Measurement of Combustion Response to Transverse Modes at High Pressure"

Best Abstract - Jimmy Chiu

"Development of an Improved Vehicle Rollover Prediction Algorithm"

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 **Galen Harden**.

Brett Sanborn in World Competition: a 1st place and a 5th place

AAE graduate student, **Brett Sanborn**, was a member of the August 2010 U.S. model plane national team. He took part in the FA1 World F1D Aeromodelling Championship 2010, Belgrade, Serbia where his team took team 1st place. Brett went on to earn 5th place in the personal competition.

<http://www.modelar.org.rs/>



2011 AGI University Grant Competition



Michael Bociaga won First place in the STK Expert Category: Land/Sea/Air of the 2011 AGI University Grant Competition. The judging committee commends entrants for their attention to detail and creativity in project subject matter and stated on Mike's entry: *"This entry addressed the very challenging problem of optimizing a UAV collection problem when the assets themselves are variable. By taking advantage of the easy integration of STK and MATLAB, Michael demonstrated the ability to perform a detailed examination of a complex trade space in order to converge on a mission-specific airframe design."*



Purdue Grand Prix 2011

AAE PhD student **Jaime A. Ocampo** was the crew chief for the 2nd placed Society of Hispanic Professional Engineers (SHPE) for the 2011 Purdue Grand Prix. The crew chief position is in charge of the kart and leads the crew members getting the kart ready for the race, taking care of repairs and making sure that everything is working well.

The driver tells the crew chief what he feels is good and bad and the crew chief organizes the car such that the problems are minimized. During the race, he keeps communication with the driver and gives him an outside perspective, telling him where his competitors are, where the accidents are.

Known as "The Greatest Spectacle in College Racing," the Grand Prix race consists of 33 drivers and teams that participate in the 160-lap or 50 mile race each spring. The team received three trophies: 2nd place, pole position, and most laps leading (89/160).

Purdue Stands Out at AIAA Region III Student Technical Paper Competition

May 2010 AAE graduates, **Katherine Brumbaugh** and **Chris Spreen** collaborated with **Professor James Longuski** following his AAE 450 Spring 2010 'Senior Spacecraft Design class' – Project Kronos. They took second place in the Undergraduate Division of its 2010 AIAA Regional Student Conference Technical Paper Competition in August 2010 with their paper 'Exploring Titan with an Orbiter, Airship and Lake Lander: A Feasibility Study.'



Katherine Brumbaugh



Chris Spreen

Chandra Sekhar Martha, a graduate student studying under **Professors Blaisdell** and **Lyrintzis**, took 1st place in the Region III Graduate Division. Chandra advanced on to Orlando, Florida for the International Competition to be held in conjunction with the Aerospace Sciences Meeting.

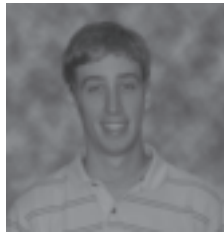


Chandra Sekhar Martha

STUDENT *awards*

Magoon Award Winners

(not pictured)
Matthew
Kube-McDowell



*Neal
Allgood*



*Christopher
Patterson*



*Rashmi
Shah*



*Rohan
Sood*



*Shae
Williams*

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



AAE 251 Spring 2010 Launch Vehicle 1st Place Team "Awesome"

Morgan Lashaw, Desheng Lim, Stephen Lyman, Kirk Maatman, Christina Malinowski, Robert Marini (not pictured), Wayne Masteller with ATK representative David McGrath



AAE 251 Tactical Cargo Transport 1st Place Team 12 "Impala"

Michael Thompson, Seth Trey, Parthsarathi Trivedi, Zach Wallace, Leah Wise, Alhafidz Yahya pictured with ATK representative David McGrath



Spacecraft Mission Design AAE Class 251 Fall 2010 1st Place Team - Team15 "Fifteen Aerospace"

Bruno Prentice, Eric Yu, Kaizad Raimalwala, Maitry Patel, Pritesh Patel pictured with Dave McGrath ATK representative.



AAE 251 Fall 2010 Aircraft Vehicle Design 1st Place Team - Team 6 "The Ninjet"

Stephanie Firehammer, Eric Flores, Eric Foster, Krista Garrett, Brad Gilmer, Ki Go

*The School of Aeronautics and Astronautics at Purdue University
congratulates all our students for their achievements*

**NASA Sponsored Two
Purdue AAE Students to
attend the 61st International
Astronautical Congress (IAC)**

From the six graduate students chosen from across the U.S. by NASA to attend the 61st International Astronautical Congress (IAC), two of these student ambassadors were from the School of Aeronautics and Astronautics.

Diane Craig Davis and **Geoff Wawrzyniak** attended the Congress which was held September 27-October 1, 2010 in Prague, Czech Republic. Both Diane and Geoff presented papers at the Congress as part of the Astrodynamics Symposium and participated in a number of events including a meeting between students and senior agency representatives from the different worldwide space agencies who were attending the IAC in Prague.



Diane Craig Davis



Geoff Wawrzyniak

**Space Flight and Exploration
Speaker Series**

Geoff Wawrzyniak met numerous influential people both at the IAC conference and at the OSSISOLAR kick-off in Chantilly, VA, in fall 2010 and had the idea for form a series of talks called "**Space Flight and Exploration Speaker Series.**"

Geoff invited a number of speakers to come to Purdue to talk about multiple aspects of space flight. Topics that were pertinent to this series include the following: astrodynamics, operations, systems engineering, policy, technology, mission design, mission planning, mission architecture, mission management, and private space flight.

Sponsored by the Indiana Space Grant Consortium, David McKinley from ai-solutions and Mark Adler from JPL, NASA came to Purdue in the spring semester and met with enthusiastic students and faculty.

The intention is for this Speaker Series to continue in the future.



Purdue Team takes part in the **University Student Launch Initiative (USLI)**

The Purdue Ballistic Rocketeers Blue Ribbon rocket took eight months of work to be ready to take part in NASA's University Student Launch Initiative rocket competition at NASA Marshall in Huntsville in April 2011.

The goal was to lift a scientific payload on the 12'6" diameter rocket that would measure pressure, temperature, solar irradiance, humidity, ultraviolet radiation and capture images during descent.

The first-year Purdue team was mentored by Prof. Victor Barlow and was in competition with 44 teams. After dealing with some technical problems on the launch pad, the Blue Ribbon roared off the pad to an impressive altitude of 5167 ft putting the team in third place for altitude and first among the rookie teams.

Purdue's USLI team is a part of Student Organization Purdue SEDS

and the team members were:

- David Fox - Team Leader
- Dan Kolenz
- Mark Lefebvre
- Kaizad Raimalwala
- Devin Kees
- Alexander Krob
- Steven Jacque
- Michael Quann

For more information visit purdueusli.org.

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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News About You

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:

Purdue University
School of Aeronautics & Astronautics
Neil Armstrong Hall of Engineering
701 W. Stadium Ave.
West Lafayette, IN 47907-2045



AeroGRAM

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Editor – **Ann Broughton**

Photos – **Lisa M. Crain**

Jennifer LaGuire

Design and Layout –

Dawn Minns, Uppercase Design

Please send inquiries to:

Director of Development

Purdue University
School of Aeronautics & Astronautics
Neil Armstrong Hall of Engineering
701 W. Stadium Ave.
West Lafayette, IN 47907-2045

PHONE: (765) 494-9124

FAX: (765) 494-0307

E-MAIL: aae-alumni@ecn.purdue.edu

WEBSITE:

<https://engineering.purdue.edu/AAE>

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