

PURDUE
UNIVERSITY

Fall 2012

AeroGRAM

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

Covering the 2011-2012 academic year



LOOKING TO THE

FUTURE



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It is an honor and a privilege to serve at one of our nation's finest aeronautical and astronautical engineering programs. In this *AeroGram*, it is a pleasure to share with you some

of the accomplishments of our students, faculty, staff, and alumni during the 2011-12 year.

Our faculty members are doing outstanding research and making an impact in a wide range of areas in aerospace engineering, including laminar-turbulent transition in hypersonic flows, petascale computing in aerodynamics, rocket propulsion, acoustics metamaterials, composite structures, impact science, interface mechanics, next-generation air-traffic control, control of multi-vehicle systems, system of systems as well as earth remote sensing, spacecraft trajectory design, and mission planning of interplanetary flights. With the support of the Missile Defense Agency, a center of excellence in integrated systems in aerospace was formed in Spring 2012 under the leadership of Dr. Dan DeLaurentis. Also, with the support of AFRL, Boeing, and Rolls-Royce, an industry consortium on thermal management of aircraft is being formed by faculty members from AAE and the School of Mechanical Engineering with the kickoff meeting held on May 2, 2012. In addition to the excellence in research, our faculty members are dedicated to ensuring that our students receive the very best education in the classroom, in the labs, and in providing opportunities for our students to engage in design-build-fly and design-build-test projects.

In 2011-12, with 26 full-time equivalent faculty members, our research expenditure was \$9.97 million, a 15.3% increase over last year, and we graduated 21 Ph.D. students, 98 M.S. students (mostly with thesis option), and 157 B.S. students. Enrollment at both the undergraduate and graduate levels remains strong with 546 sophomores, juniors, and seniors; 252 M.S. students; and 117 Ph.D. students. The number of our graduate students is the largest in our school's history. Both our faculty and our students are outstanding as evidenced by the many recognitions and awards received.

The ultimate measure of any university is the accomplishments of its alumni. In this *AeroGram*, we are proud to highlight some of our alumni's accomplishments. During

this past year, we honored 10 distinguished alumni with the Outstanding Aerospace Engineer Award on Oct. 21, 2011 and honored Doug Bowers, Janice Voss, and Denny Warner with our college's Distinguished Engineer Award on February 24, 2012.

Dr. France Córdova completed her term as Purdue's President and retired on July 15, 2012. Our School thanks her for her leadership, guidance, and support. Governor Mitch Daniels will be Purdue's next President, and he will start in January 2013, after completing his second term as Governor of Indiana. During the interim, Provost Tim Sands will serve as the Acting President.

On faculty news, Dr. Tasos Lyrintzis resigned in Dec. 2011 to become distinguished professor and chair of the Department of Aerospace Engineering at Embry-Riddle Aeronautical University in Daytona Beach. With Dr. Lyrintzis departing, Dr. Wayne Chen became the Associate Head of the Graduate Program. In 2011-12, Dr. Alina Alexeenko was promoted to associate professor with tenure, and Dr. Bill Anderson was promoted to full professor. In 2011-12, we were delighted to welcome two assistant professors, Dr. Sally Bane and Dr. Mike Sangid. On July 2, 2012, we welcomed two more assistant professors, Dr. Mike Grant and Dr. Haifeng Wang.

We are extremely saddened to lose two people who are very dear to our hearts during this past year. Professor Emeritus Lawrence (Larry) Cargnino passed away on January 14, 2012 at the age of 99. He was the last remaining member of the original group of faculty members who formed our School in 1945. Details on Professor Cargnino and his accomplishments can be found on page 17. Dr. Janice E. Voss lost her battle with cancer on February 7, 2012 at the age of 55. She was Purdue's first female astronaut and a trailblazer in every endeavor she undertook. Janice was honored with the Distinguished Engineer Award posthumously with her parents, Dr. James and Louise Voss, accepting the award. Details on Janice Voss can be found on page 4.

At this time, I want to express our deepest appreciation to our alumni and friends for your strong support of our school and our endeavors. We welcome you back to campus and hope to see you soon.

With very best wishes and regards for the coming year,

Prominent AAE Alumni Serve on Committee to Assess NASA's Aeronautics Flight Research Capabilities

“Recapturing NASA’s Aeronautics Flight Research Capabilities”

A report from the National Research Council Recapturing NASA's Aeronautics Flight Research Capabilities published in March 2012 cited two distinguished AAE alumni who served on the committee.

Neil. A. Armstrong BSAE'55, DEA'67, HDR'70, OAE'99 EDO Corporation (retired) and John B. Hayhurst BSAE'69, DEA'89, HDR'98, OAE'99, Boeing Company (retired) served on the committee headed up by the Aeronautics and Space Engineering Board (ASEB).

The ASEB provides an independent, authoritative forum for space engineering and aeronautics research within the National Research Council.

The study was sponsored by NASA. The National Academy of Sciences, National Academy of Engineering, Institute of Medicine, and National Research Council make up the National Academies. They are private, nonprofit institutions that provide science, technology, and health policy advice under a congressional charter. The Research Council is the principal operating agency of the National Academy of Sciences and the National Academy of Engineering.

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March 15, 2012



Neil. A. Armstrong



John B. Hayhurst

Honoring NASA's Pioneering Astronauts



NASA Administrator Charles Bolden (far right) with (L-R) astronauts Buzz Aldrin, John Glenn, Neil Armstrong, Mark Kelly and Michael Collins
Photo courtesy of NASA/Paul Alers

Leaders of Congress honored astronauts **John Glenn, Neil Armstrong, Buzz Aldrin** and **Michael Collins** on November 16, 2011 with a Congressional Gold Medal. The ceremony took place in the Capitol Rotunda. The Gold Medal is Congress' highest expression of national appreciation for distinguished achievements and contributions and was first given to George Washington in 1776.

Administrator Charles Bolden also recognized the hundreds of thousands of dedicated NASA employees and industry partners who contributed to the incredible success of the Mercury, Gemini and Apollo programs and all that has followed, and all that is yet to come.

All four astronauts have also received the NASA Distinguished Service Medal and the Presidential Medal of Freedom, awarded with Distinction, as well as NASA's Ambassador of Exploration Award.

1956 -2012

Dr. Janice Elaine Voss B.S. E.Sc'75, OAE'99; DEA'12

Astronaut **Janice Voss**, a veteran of five spaceflights and a former science director for a NASA exoplanet-hunting spacecraft, died after a battle with cancer on February 7, 2012. She was 55.

Janice was Purdue's first female astronaut and she had donated her personal papers documenting her spaceflight career to Purdue Libraries' division of archives and special collections in 2009. She was quoted as saying:

“Knowing that someone else got from here to there brightened many of my days at Purdue,” she said referring to the university’s earlier astronaut alums. “Maybe my papers will help someone else feel that they aren’t that different from me. If I can do it, then so can they.”

Janice came to Purdue in 1972 when our school was known as the School of Aeronautics, Astronautics and Engineering Sciences. She was a freshman at 16 when she tackled one of the most difficult undergraduate engineering curricula at that time. She not only recorded a perfect 6.0 grade average but in 1975, completed a five year program in 3 ½ years at age 19.

During this time as an undergraduate at Purdue, she also completed five rotations as a co-op student at NASA Johnson Space Center. She worked on computer simulations in the engineering and development directorate in the years leading up to the start of the shuttle-era. Specifically, in the fall of 1973, at age 17, Janice co-wrote a digital computer model of the Space Shuttle's engines. The original thinking was to put on and take off jet engines to the Orbiter, to change it from a space craft to an airplane. Her work was a feasibility study to examine the possibility of ferrying the Space Shuttle by strapping



air-breathing engines to it and flying it across country from California to Cape Canaveral.

Her third work rotation during the summer of 1974 saw her working in the Control and Simulation Branch where she learned how to organize and complete simulation and flight control systems. She was programmer for an analog simulation of the response characteristics of the flight control system for the elevons on the Space Shuttle Orbiter. During her final rotation in August 1975, nearly six years before the launch of the first Space Shuttle, her assignment was writing four test digital computer programs to check the hardware interfaces for a Space Shuttle Flight test simulation. She was still only 18 years of age.

Following the end of her co-op rotation, she reported that her experience as a co-op student made her schoolwork much more meaningful and gave her confidence in her ability to handle herself in a professional environment.

Janice had been planning on becoming an astronaut for many years, and while she was still an undergrad had written letters to other astronauts and sought their advice on the subject. At that time, the astronaut corps was a totally male domain but times were changing and Janice was determined that she was an excellent candidate to break through the barrier.

Chosen by NASA for the astronaut corps in January 1990, she served as

mission specialist on five space shuttle missions, including the only repeat flight in the shuttle program's 30-year history. She flew with the first commercial laboratory, rendezvoused with Russia's Mir space station and helped create the most complete digital topographic map of the Earth.

Janice returned to the Purdue campus on many occasions and was a perfect role model for students of all ages. She was awarded the *Outstanding Aerospace Engineer Award* from our school in 1999 and she was guest astronaut at *Purdue Space Day* in November 2000. Here, she gave a presentation to 3rd - 8th grade students about her record-breaking fifth mission in space STS-99 which had taken place earlier that same year. Her presentation included a comprehensive study of life in the space shuttle, and a more detailed explanation of the purpose and procedure of the mission. The lighter moments included shots of Janice and a fellow crew-member swing-dancing in the close confines of the space shuttle. Janice won many awards during her life and was a multiple recipient of NASA's Space Flight Medal. Her final honor from Purdue University was the *Distinguished Engineering Alumnus* award, which recognizes engineers whose achievements are truly outstanding. At a reception held on February 24, 2012, the DEA award was proudly and graciously received by Janice's parents, James and Louise Voss. The citation reads *"In recognition of her pioneering and record-setting achievements in the U.S space program and her commitment to engineering and science education."*

The School of Aeronautics and Astronautics is proud to recognize Janice as an accomplished engineer and scientist who went on to become the first woman from Purdue selected to be an astronaut. We have current members of faculty and staff who clearly remember her as the exceptional student and person she was. She was an outstanding role model for students of all ages and we salute her hard work and dedication to her profession. Her accomplishments have long become a source of pride to our school.

Distinguished Engineering Alumni (DEA) 2012

The School of Aeronautics and Astronautics is proud to honor three AAE alumni who received the College of Engineering Distinguished Engineering Alumni Award on February 24, 2012.



(L-R) Doug Bowers, Mrs. Louise Voss, Denny Warner, Dr. James Voss

Douglas L. Bowers BSAAE'72

Director, Propulsion Directorate
U.S. Air Force Research Laboratory

In recognition of his extraordinary technical, policy and managerial leadership accomplishments with the U.S. Air Force propulsion and air vehicle efforts

Dennis E. Warner BSAAE'73, MSME'76

President and CEO
Aero Engine Controls North America

In recognition of his technical and managerial leadership for numerous important engine programs for both defense and commercial applications

Janice E. Voss BS Engineering Science'75

(received posthumously)

Payloads Lead, Astronaut Office
NASA Johnson Space Center and
Astronaut

In recognition of her pioneering and record-setting achievements in the U.S. space program and her commitment to engineering and science education



The award for Janice Voss was presented posthumously to her parents who attended the ceremony along with family members. Following the luncheon, a memorial reception was given for members of the Voss family.

The College of Engineering has over 82,000 living alumni. The distinction of DEA has been bestowed upon 479 of these outstanding individuals. The School of Aeronautics and Astronautics was proud to honor our most recent DEA's at a reception held following the ceremony.

AAE Alumna Pilot Lt. Ashley Ruic Flying First All-Female-Crewed Combat



ARABIAN SEA (Jan. 25, 2012) Air Control Officer Lt. Nydia Williams, left, Radar Operator Lt. J.G. Ashley Ellison, Plane Commander Lt. Cmdr. Tara Refo, Pilot Lt. Ashley Ruic, and Mission Commander Lt. Cmdr. Brandy Jackson, all assigned to Carrier Airborne Early Warning Squadron (VAW) 125, pose for a photo before flying the first all-female-crewed combat mission in an E-2C Hawkeye aboard the Nimitz-class aircraft carrier USS Carl Vinson (CVN 70). Carl Vinson and Carrier Air Wing (CVW) 17 are deployed to the U.S. 5th Fleet area of responsibility.

(U.S. Navy photo by Mass Communication Specialist 2nd Class James R. Evans/Released)

Tom Maxwell BSAAE'69; OAE'09; DEA'11

Retired from GE Aviation

General Manager, Military Propulsion Engineering, GE Aviation

Tom Maxwell retired after 43 years from GE Aviation on May 11, 2012. Tom grew up in Pennsylvania in the height of the space race. Sputnik had launched in 1957, and in the 10 years after that, he said everyone with any aptitude for math was being counseled to go into engineering. Aeronautical was a natural choice and the whole nation rallied behind the initiative of the Space Race.

During his time at Purdue, he was a member of two honor societies, Sigma Gamma Tau and Tau Beta Pi. Tom graduated from Purdue in 1969 with a bachelor's degree in aeronautical engineering and joined GE Aircraft Engines in Evendale, Ohio.

The School of Aeronautics and Astronautics recognized Tom's professional achievements and he was presented with the Outstanding Aerospace Engineer Award in 2009.

The College of Engineering at Purdue recognizes special accomplishments and achievements that are truly outstanding by awarding the Distinguished Engineering Alumnus Award. Tom was the recipient of this award in 2011 in recognition for his technical and managerial leadership of numerous aircraft engine programs.

Tom is also a member of our School's Industrial Advisory Council which serves an important role within the School of Aeronautics and Astronautics. The success of our programs depends on strong support from industry and this council



Pictured at his retirement party, Dr. Tom Shih, Rita Baines and Pam Ritter present Tom with a Purdue golf bag

serves as a link between industry and the university.

Tom is also a founding member of the School's Steering Advisory Council which was formed in 2009. This council advises and helps our school in exploring and creating major opportunities in the aerospace world that are timely and important at the national level where our alumni can take a leadership role.

Tom has continuously taken time out of his busy schedule to serve on both of these councils and we thank him for his continued support and guidance. We wish him well in his retirement and congratulate him on his long and productive career.

Third generation Marine and AAE graduate First Lt. William J. Fredericks BSAE'06 serves in Helmand province



First Lt. William J. Fredericks, an artillery officer who was deployed to Afghanistan with Kilo Battery, 2nd Battalion, 14th Marine Regiment, prepares to head out on a foot patrol in Helmand province.
Courtesy Photo

The story of a rocket scientist who answered the call to serve his country as a third generation Marine.

First Lt. William J. Fredericks graduated from Purdue University in 2006 with a degree in aeronautical engineering and works as an aerospace engineer at NASA Langley Research Center in Hampton, Va.

Fredericks' father and grandfather both served as Marines, with Fredericks' grandfather, Wesley Fredericks, a World War II veteran who fought in five island campaigns in the Pacific theater as a combat engineer with 1st Marine Division. Senior William Fredericks served on active duty for four years as an aviation supply officer and then spent 10 more years as a drilling reserve officer. He is now a retired major who flies for US Airways.

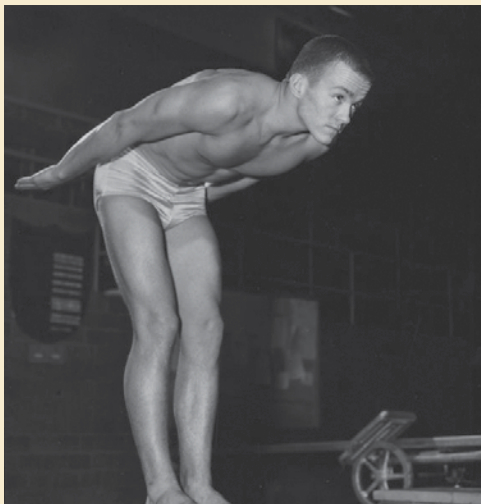
The family service continued; as a reservist, Fredericks belongs to Hotel Battery, 3rd Battalion, 14th Marine Regiment, a M777 155mm Howitzer battery based in Richmond, Va. Their sister battalion needed more lieutenants for their deployment, and Fredericks answered that call as an artillery officer with Kilo Battery, 2nd Battalion, 14th Marine Regiment, a High-Mobility Artillery Rocket System battery operating in Regional Command Southwest in Afghanistan.

The senior Fredericks signed his son's commissioning papers and administered the oath of office, a moment he considers the greatest honor of his life. His wife held the Bible for their son as he repeated the oath, swearing to support and defend his country. The 2008 commissioning was followed by the retired major handing down to his son his Mameluke sword, the ceremonial sword carried exclusively by Marine officers. He arrived in Afghanistan in mid-January 2011 and returned home to pick up where he left off at NASA summer 2011.

Walter Eversman BSAE'59, OAE'08

Walt Eversman, Curators' Professor of mechanical and aerospace engineering at Missouri University of Science and Technology, BSAE'59, OAE'08 was inducted into the Purdue Intercollegiate Hall of Fame in April 2012. He was a three-year letterwinner as a swimmer from 1956 to 1959 for head coach Dick Papenguth.

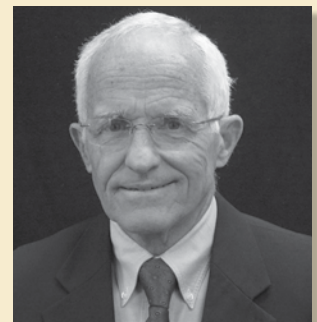
Eversman received the Big Ten Medal of Honor for earned All-America honors in the backstroke in 1957 and served as team captain for the 1957-58 season.



He graduated with highest honors (5.63 on a 6.0 scale). Eversman has spent most of his adult life in academia, earning his master's and doctorate degrees in aeronautics and astronautics at Stanford University and teaching at Wichita State University (1964-74), University of Canterbury in New Zealand (1974-78) and University of Missouri-Rolla (1978-present). He was named a fellow of the American Institute of Aeronautics and Astronautics (AIAA) in May 2011.

Eversman remains active athletically by running marathons - including Boston, New York and Berlin - and cycling and satisfies his competitive nature by skippering an International Lightning class sailboat in local races.

Walt and 7 other former athletes joined 118 former athletes, coaches and administrators who have been previously inducted into the Hall of Fame since 1994, when the selection process was initiated.



Scientific American



Dr. Damon Landau BSAAE'01; MSAAE'03; PhD'06 and **Nathan Strange**, a current doctoral student under Distance Learning, were published in the December 2011 issue of Scientific American. Both studied under **Dr. James Longuski**.

By adapting ideas from robotic planetary exploration, the human space program could get astronauts to asteroids and Mars cheaply and quickly.

Damon Landau is an outer-planet mission analyst at the NASA Jet Propulsion Laboratory (JPL). He helped to design the trajectory for NASA's recently launched Juno mission to Jupiter and worked on the agency's survey of near-Earth asteroids that astronauts might visit.

Nathan Strange is a JPL Mission Architect. He was on the navigation team for the Cassini - Huygens mission to Saturn and collaborated on the design of the gravity-assist tour of Saturn's moons. He has also worked on technical blueprints for future human missions.

SCIENTIFIC AMERICAN™

William H. Gerstenmaier BSAAE'77; OAE'03; DEA'07

Purdue alumnus William H. Gerstenmaier, BSAAE'77; OAE'03; DEA'07 has been appointed as associate administrator for the Human Exploration and Operations (HEO) Mission Directorate.

The organization combines the talents, skills and experiences of Space Operations and Exploration Systems mission directorates and focuses on International Space Station operations and human exploration beyond low Earth orbit. It more fully integrates the operation of NASA's in-space assets and current capabilities with planning for the agency's future, including the size and type of the work force, facilities and contracts.

The directorate also will manage commercial crew and cargo developmental programs; construction of the Orion Multi-Purpose Crew Vehicle, a spacecraft designed to travel beyond low Earth orbit; development of a new heavy lift rocket, known as the Space Launch System; and other programs within the directorates.

Gerstenmaier was honored by the AIAA in November 2011 with the **Von Karman Lectureship in Astronautics**. The award is given annually to someone who has performed notably and distinguished themselves technically in the field of astronautics. Gerstenmaier was recognized for his 30 years of accomplishment in human spaceflight, culminating in the leadership of the Space Shuttle and International Space Station Programs.

Gerstenmaier received a bachelor's degree in aeronautical engineering from Purdue University in 1977 and a master's degree in mechanical engineering from the University of Toledo, Ohio, in 1981. In 1993, he completed course work at Purdue for a doctorate in dynamics and control, with a minor in propulsion. Gerstenmaier previously served as the associate administrator for Space Operations.

SpaceX Makes History

Space Exploration Technologies (SpaceX) made history on Friday, May 25, 2012 when its Dragon Spacecraft became the first commercial spacecraft to attach to the International Space Station. Previously only four governments – the United States, Russia, Japan and the European Space Agency – had achieved this challenging technical feat.

The vehicle was grappled by station's robotic arm at 9:56 a.m. Eastern. It was pulled in Dragon's passive common berthing mechanism and successfully attached to the orbiting laboratory.

Bill Gerstenmaier associate administrator for the Human Exploration and Operations (HEO) Mission Directorate said "The SpaceX and NASA teams have demonstrated what can be accomplished with sound engineering principles. We often marvel at the hardware, systems, and operations. However, the real marvel is the work of individual engineers working as a team to accomplish great missions such as the recent SpaceX cargo demonstration mission. Congratulations to the SpaceX and NASA teams on their historic accomplishment."

The capsule returned triumphantly home and parachuted into the Pacific Ocean on May 31, 2012.





(L-R) Gordon Bohs, Mike Birck, the wife of Harry Olds, Bob Sattler, and Olin Martin

AAE Alumni Bob Sattler BSAE'48 Recognized at Lambert Field

Purdue athletics welcomed baseball alumni back to campus to celebrate the final weekend series in the history of Lambert Field on Saturday May 12, 2012. AAE alumnus **Bob Sattler** BSAE'48 (2nd from right) represented six decades of Purdue baseball and was recognized during game two of the Michigan series. The homestand represents the final games at Purdue's home field since 1965. Alexander Field, the program's new stadium, will be formally finished summer 2012.



Commercial Flight Federation Sirisha Bandla

Sirisha Bandla BSAAE'11 has been appointed to serve as Assistant Director at the Commercial Spaceflight Federation.

Before joining the Commercial Spaceflight Federation, she worked as an aerospace engineer designing mechanical components for advanced aircraft at L-3 Communications in Texas.

Sirisha served as Team Leader for the NASA-supported Zero Gravity Flight Program in which she flew onboard the Space Adventures Zero-G aircraft and managed and led a group of ten engineers who designed, fabricated, and flew a microgravity science payload.

Sirisha also participated in Purdue Space Day on the executive board and she also participated in an engineering co-op program in which she spent several semesters working as a mechanical engineer at ATA Engineering.



AAE alumnus featured in Boeing 747-8 video

Purdue alumnus **David Loffing** BSAAE'02; MSAAE'04, is featured in a Boeing video about the new Boeing 747-8 and his role in its wing development. In the video, David explains the design that resulted in the best fuel efficiency for any large jetliner. Loffing was asked to take the

design of the 747 wing, which was developed in the 1960's, and bring it into the 21st century.

This video is part of a new series and website that features Boeing employees talking about technology breakthroughs in aerospace.

http://www.boeing.com/stories/videos/vid_04_747-8.html

Class Notes

N.J. "Bud" Goldstone BSAE'48; AIC Professional Associate - retired; Apollo Engineering, *The Los Angeles Watts Towers*; published by Getty Museum & Conservation Institute; *"Secrets of Watts Towers"*; SPACES Archives.

Dr. Marty A. Ferman BSAE'57 has published his latest book, *"A Wing Design Method for Aerospace Students and Home Builders."* In this book, Dr. Ferman has developed a wing design method which can be used by Aerospace students in senior design class or for home builders of aircraft. This method was evolved by Dr. Ferman during his 56 years in the aerospace industry and in academia.

A. Dwight Abbott BSAE'58, MS M'65, OAE'11 retired as general manager of systems engineering from The Aerospace Corporation and now resides in Palos Verdes Estates, CA, with his wife, Janet. In retirement, he has served on the Palos Verdes Estates city council and as mayor. He was recognized by the School of Aeronautics and Astronautics as an *Outstanding Aerospace Engineer* 2011.

Clifton Trice BSAE'68 Program Manager, Commercial Support Team, Boeing Aircraft, Saint Louis, MO.

Tom Maxwell BSAAE'69; OAE'09; DEA'11 – General Manager, Military Propulsion Engineering, GE Aviation – Retired May 11, 2012 (see page 6).

Michael J. Corso BSAAE'71, OAE'11 Ft. Myers, FL, was included among Florida Trend's 2012 Legal Elite for 2012. Michael is a partner at Henderson, Franklin, Starnes and Holt law firm. He was recognized by the School of Aeronautics and Astronautics as an *Outstanding Aerospace Engineer* 2011 and is a member of the Industrial Advisory Committee.

Dennis Morse MSAAE'79 Software Engineer, Site Reliability Engineering, Google, Mountain View, CA.

Ken Sanger BSAAE'81 Director 787 Program, The Boeing Company. Recently assigned responsibility for 787 Mid Body fuselage system development and integration for all airplane derivatives, performed by Italy, Japan, and South Carolina site partners.

Dr. David B. Spencer MSAAE'85, associate professor of aerospace engineering at The Pennsylvania State University, has been elected to the grade of Fellow in the American Astronautical Society (AAS). The AAS has been designating Fellows of the Society since its founding 57 years ago, and has elected 438 distinguished men and women for this honor to date.

Nicholas Ferraiolo BSAAE'85 Lead Engineer, Boeing Commercial Airplanes, Seattle WA. Nick was named an Associate Technical Fellow of the Boeing Company in January 2011 primarily for achievements in and understanding of the aerodynamic integration of engines and airframe.

Christopher Azzano BSAAE'87 Commander, 412th Operations Group, USAF, Air Force Materiel Command, Edwards Air Force Base, CA. The 412th Operations Group is responsible for testing every aircraft in the USAF inventory, including all fighter, tanker, transport, bomber, and remotely piloted aircraft. The 412th is the largest, most diverse flying organization in the USAF, and is comprised of over 2500 military, government civilians, and contractor personnel executing over 300 Department of Defense programs. The commander of the 412th is also an active test pilot flying F-16s and other high-performance aircraft.

Holly Hulse BSAAE'87 General Manager, Industrial Steel Wires, Bekaert Corp. Marietta GA.

Jerry Brown BSAAE'88, Carmel, IN, is a Regional Sales Manager for RFL Electronics in Boonton, NJ, makers of high speed communications equipment. He works with electric utility companies in 18 states and central Canada to implement communication network and protective relaying devices that monitor and protect transmission power line infrastructure and substation equipment. When he's not traveling, he enjoys riding his Harley and marching with the Purdue Alumni Band at homecoming.

Craig E. Cook BSAAE'88 Edmonds, WA, was awarded Boeing's annual Special Invention Award, highlighting the best of Boeing Invention. Craig is the senior design engineer and authorized representative for the FAA.

Mike Holtz BSAAE'92 VP Manufacturing Integration Projects, Goodrich Corporation, Independence, OH.

Greg Wood BSAAE'92 Commander, 17th Test Squadron, US Air Force, Schriever AFB, CO. Took command of the 17th Test Squadron in June 2011. The squadron performs operational test and evaluation of hardware and capabilities for the Air Force's space mission area.

Dr. David Doman MSAAE'93 Principal Aerospace Engineer at the Air Force Research Laboratory - Fellow American Institute of Aeronautics and Astronautics (AIAA) see page 29.

Michael Moses MSAAE'95; OAE'11 was announced as VP Operations for Virgin Galactic on October 13, 2011. He will oversee the planning and execution of all operations for the company's commercial suborbital spaceflight program at Spaceport America in New Mexico. He was recognized by the School of Aeronautics and Astronautics as an *Outstanding Aerospace Engineer* 2011.

Dr. John Schmisser Ph.D.'97 Program Manager for the Air Force Office of Scientific Research - Fellow American Institute of Aeronautics and Astronautics (AIAA) see page 29.

Bryan Campbell Ph.D.'99 Principal Engineer, Aerojet, Sacramento, CA.

Casey Kirchner BSAAE'01 Project Engineer, Barber-Nichols, Inc. Arvada CO. Casey received a NASA Space Flight Awareness award at the roll-out of STS-135 and landing of STS-134, for work as a design engineer at Stennis Space Center, MS, on the A-3 test stand for altitude testing of the J-2X rocket engine. She left NASA in July 2011 to join Barber-Nichols, Inc. in Arvada, CO as a Project Engineer for aerospace turbomachinery.



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/AE/Alumni/Update/AlumniRecords>

Darcey Kuhn BSAAE'01 Program Manager, Spaceflight, Inc.

Michael Perotti BSAAE'02 Safety Engineer, NASA.

James Pinyerd BSAAE'03 Intellectual Property Attorney Ice Miller LLP, Indianapolis, IN. James earned a law degree following graduation from Purdue and started practicing law. His focus has been on Intellectual Property law, particularly patent law. During this time, he has had the opportunity to work with large aerospace start-ups and one of the largest aerospace companies in the world.

Adam Rietz BSAAE'04 Aero engineer, ICON Aircraft, Tehachapi CA.

William J. Fredericks BSAAE '06, Williamsburg, VA, works for NASA Langley Research Center in Langley, VA. William is also a Marine Corps officer and has served in Afghanistan (see page 7).

Phil Wagenbach BSAAE'07 Captain United States Air Force.

Matt Sharkey BSAAE'09 Process Engineer, PCC Airfoils, Cleveland, OH.

Bhawesh Kumar Ph.D.'10 Senior Engineer, Dow Chemicals.

Tied the Knot

Bridget A. Sherer BSAAE '06 and Kenneth LeBay were married on May 21, 2011 in Indianapolis, IN.

Wes Dafler BSAAE'03 and Melanie C. Geiger were married on June 18, 2011 in Elburn, IL.

Jonathan Braun BSAAE'06, MSAE'08 and Emily Brown were married on October 7, 2011 in Indianapolis, IN.



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.

Births

Alex Fleck BSAAE'02 and his wife **Kacie (Burton) Fleck** BSAAE'01, Leonard, MD welcomed their third child, Nicholas Andrew July 24, 2011.

Michael C. Mattox BSAAE'90 and Cynthia (Lau) Mattock, Newburgh, IN, welcomed their son, Andrew Paul on May 18, 2010.

Thomas P. Shurtz a baby boy August 29, 2011. 6 lbs. 15 oz.

Brandon Terry (current grad student – faculty advisor Dr. Steven Son) and his wife DeLenna Terry welcomed their daughter Taylor Maud Terry on April 16, 2012. She was 8 lb. 15 oz.

Adam Naramore BSAAE'06 Systems Engineering Lead, ATK Missile Products Propulsion & Controls Division, Elkton MD and his wife Elspeth welcomed Jackson Allen Naramore on August 6, 2011. 8 lbs. 12 oz, and 20 inches long.

In Memoriam

Raymond Knight BSAE'46, Columbus, OH, October 2, 2011

Jim Jones BSAE'49, Hampton, VA, October 16, 2011

Richard Myers Young BSAE'49, Pebble Beach, CA, October 16, 2011

Richard M. Young BSAE'50 Pebble Beach, CA, October 16, 2011

Charles P. Hagberg BSAE'57 Redmond, WA, October 31, 2011

Gilbert H. Urick Jr. BSAE'57 Shell Knob, MO, September 16, 2011

James F. Hall BSAAE'60, Ocala, FL, October 12, 2011

Carl D. Neidhold, Millersville, MD, December 15, 2010

L. Eugene Richardson BSAE'65, Renton, WA, October 30, 2011

Charles W. McGuirt Ph.D.'68, Camden, SC, November 23, 2011

David S. Wright BSAAE'79, Gulfport, FL, December 6, 2011

John Griffith BSAE'48, Penn Valley, CA, October 21, 2011

Richard Blomquist BSAE'49, Bellvue, WA, August 30, 2011

Robert Schnabel BSAE'55, Rockville, MD, July 8, 2011

Donald Johnson BSAE'57, Rio Rancho, NM, August 10, 2011

Allan Norton BSAE'58, Apopka, FL, June 4, 2011

Richard Wackrow BSAE'58, Stuart, FL, November 15, 2011

Robert Wiley BSAE'65; MSAE'66, La Quinta, CA, August 11, 2011

Donald Laird BSAAE'72, New Palestine, IN, May 11, 2011

Brian Barnet BSAAE'01, Salem, IN, November 19, 2010

Nicolas Clones BSAE'52, Fenton, MO, June 11, 2011

Frederick Norton BSAE'54, Sandy, UT, August 14, 2011

Walter English BSAE'57, Indianapolis, IN, July 15, 2011

Wallace Nelson BSAE'58, Fullerton, CA, Jan 30, 2011

Donald Goetz BSAE'59, Stevensville, MI, July 5, 2011

Wardell E. Hinderks BSAE'47, Olathe, KS, April 5, 2011

Richard C. Sogge BSAE'47, Cypress, TX, May 7, 2011

Donald J. Nellis BSAE'48, Pinehurst, NC, Mar 20, 2011

Harold W. Wigley BSAE'50, Carlsbad, CA, May 12, 2011

Richard W. Pendleton BSAE'57, Henderson, NV, March 30, 2011

Peter Novak BSAE'61, Sand Pedro, CA, October 13, 2011

Michael D. Kaser BSAE'69, Covington, OH, Jan 7, 2011

Joseph P. Hess Jr. BSAAE'80, MSAE'81, Malvern, PA, June 20, 2011

Robert T. Boll BSAE'50, Mill Creek, WA, November 23, 2010

Vern L. Decker BSAE'54; MSAE'57, Manchester, TN, March 20, 2011

Norman H. Golden BSAE'47, Clearwater, FL, December 3, 2010

AAE 2011-2012 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, 2011 – June 30, 2012 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,

This has been quite an exciting year! I have had the honor of meeting several of you already and have heard some extraordinary stories of how Purdue and the AAE school have transformed your lives. You all should be extremely proud to be able to say that you are a member of the Purdue alumni, as our reputation continues to be well-known and is so strong in many areas. Whether you are an engineer or holding a leadership position in engineering, or whether you became a doctor, a lawyer, a software designer, or even a real estate owner, you have one common thread - you received a solid education as a Purdue AAE engineer, which allowed you to become who you are today.

As a graduate of Purdue myself, I was taken back to those good old days on campus, when hearing the stories that you told me about your life here. Many of us remember that horrible blizzard in 1979 and some of us can even remember walking to the Purdue Airport for classes. No matter if you graduated in 1943 or in 2012, one thing that was constant during my visits was seeing and hearing the commitment that you have to this school. Your gifts have made a tremendous impact on what our school can offer to our students and faculty. In some cases, it means knowing that a student now has the chance to complete their degree because of a needed scholarship, or it might mean a chance for a group of students to travel to see their experiments launch and succeed.

We want to continue to be the global leader in aerospace engineering education, and with your continued help and support, we will maintain that distinguished leadership role. I know that you share with me this passion for maintaining this reputation, so I look forward to working with each of you this coming year to seek ways in which we can make your dreams come true in your quest to achieve this goal.

Many thanks and Go Boilers!

Rita Baines



Rita Baines
Director of Development
(765) 494-9124
rbaines@purdue.edu

David O. and Linda Schimmel Swain Scholarship 2011-2012



Pictured are the David O. and Linda Schimmel Swain Scholarship recipients for 2011-2012.

(L-R) Alexis Turner, Itanza Wright, Dr. David Swain, Mrs. Linda Schimmel Swain, Jani Dominguez, Nicholas Sierra

David and Linda were on campus at the end of August 2011 when Dr. Swain gave a talk in Prof. Williams's seminar class.

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**.

Donations 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 well over 100 gifts to both of these endowments with many letters of support and thanks to George.

For more details, please contact Director of Development, Rita Baines at (765) 494-9124 or rbaines@purdue.edu



Pratt and Whitney Rocketdyne, Inc

A check for undergraduate and graduate scholarships was presented on behalf of Pratt and Whitney Rocketdyne, by Dr. Munir M. Sindir, Engineering Technical Disciplines and a member of the Steering Advisory Committee (SAC) to Dr. Tom Shih, professor and head of School of Aeronautics and Astronautics.

The School of Aeronautics and Astronautics is grateful to generous alumni, friends of the School, and industrial partners that provide support for scholarships and student support.

(L-R) Head of School Dr. Tom Shih, Dr. Munir Sindir and AAE Director of Development Rita Baines



Naples President's Council ALUMNI EVENT

Hosted by Debra and Patrick Haley

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

The weekend is filled with a vast array of activities to choose from culminating with the appreciation dinner for President's Council and John Purdue Club members.

Taking place in conjunction with the Mollenkopf-Keyes weekend are the popular 'Back-To-Class' sessions, where members attend class with some of Purdue's top faculty and learn about the exciting things happening on campus.

Debra Haley BSAE'78; OAE'05; DEA'08 and her husband Patrick graciously welcomed AAE alumni and friends to their home for an evening to catch up with old friends and to make new ones.

PURDUE

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U.S. NEWS & WORLD REPORT RANKS PURDUE'S GRADUATE PROGRAMS AMONG NATION'S BEST

Purdue University's programs remain among the best in the nation in *U.S. News & World Report's* rankings of the top graduate schools released on March 13, 2012.

Purdue's College of Engineering tied with Cornell University at No. 10. Last year, the college's graduate program was ranked 11th. Aeronautics and astronautics graduate program ranked 6th and the undergraduate program ranked 4th in the country.

Farewell to President France Córdova

The Purdue University community, as well as local and area officials celebrated the conclusion of the presidency of France Córdova during a series of events during May and June. Córdova, the 11th president in the university's 143-year history, retired this summer after five years as Purdue's president.

Córdova became Purdue's 11th president and took office in July 2007, after having served as chancellor of University of California, Riverside, since 2002. She previously served at the University of California at Santa Barbara, where she had been vice chancellor for research and a professor of physics. Prior to that, she was the first woman and youngest person to hold the position of NASA chief scientist, working on projects that included the Hubble Space Telescope.

She is the first woman to lead the institution and has overseen a

strategic plan that emphasizes student success, research deliverables and global engagement.

During her presidency, she led Purdue to record levels of research funding, reputational rankings, and student retention rates; championed diversity among students, staff and University leadership; and promoted student success, faculty excellence, and programmatic innovation. Under her leadership, Purdue has raised \$1 billion in private philanthropy and expanded its role as a top research institution on the global stage.



A bronze bust of President France A. Córdova was unveiled May 11, 2012 in the Purdue Memorial Union's Great Hall. The rendering, created by artist John Hebenstreit of Cincinnati and cast by Sincerus Bronze Art Studio of Indianapolis, joins 10 busts of past Purdue presidents in the Union.

FUTURE IMPORTANT DATES

2012-2013



August 10, 2012	Purdue Day at the State Fair
August 20, 2012	Fall classes start
September 15, 2012	Band Day – Purdue vs. Eastern Michigan
September 27-29, 2012	Alumni Weekend
September 28, 2012	Industrial Advisory Council Meeting
September 28, 2012	Outstanding Aerospace Engineer Award Banquet – Four Points by Sheraton, West Lafayette, IN.
September 29, 2012	Family Day – Purdue vs. Marshall
October 5-6, 2012	President's Council Annual Weekend
October 6, 2012	Purdue vs. Michigan
October 8-9, 2012	Fall break
October 10, 2012	Charles Rolls and Henry Royce Purdue Memorial Lecture – Dr. John Tracy
October 13, 2012	Homecoming – Purdue vs. Wisconsin
October 20, 2012	Purdue Space Day for grades 3-8 with astronaut alumni Drew Feustel, David Wolf, and Scott Tingle
November 3, 2012	Military Appreciation Day – Purdue vs. Penn State
November 24, 2012	Old Oaken Bucket Game – Purdue vs. Indiana
January 7, 2013	Spring classes begin
February 22, 2013	Distinguished Engineers Award (DEA)
March 11, 2013	Spring Break
April 27, 2013	Classes end



New Purdue President

to be the university's next president.

Daniels will start in January at the conclusion of his second term as governor. He will be Purdue's 12th president, succeeding France A. Córdoba, who will step down July 15.

Daniels praised Purdue as an invaluable asset for Indiana and the country and as an educational institution globally renowned for producing discoveries and graduates in high demand. He said his first priority would be to learn from the faculty and earn their trust and collaboration to help further Purdue's

research and education missions.

Daniels, Indiana's 49th governor, was elected in 2004 and re-elected in 2008 with the largest number of votes ever recorded by any candidate for public office in state history. Chief among his accomplishments are turning a state budget deficit into a surplus, launching Indiana into the top ranks of business-friendly states, and reforming and improving the performance of government across the board.

Daniels has held a variety of top-level positions in business and politics. He worked 11 years at Eli Lilly and Co., including service as president of the company's North American Pharmaceutical Operations. Previously, he was CEO of the Hudson Institute, then a contract research organization known for its analyses of the central role of technology in human progress, among other issues. He also served as

an adviser to President Ronald Reagan, director of the Office of Management and Budget for President George W. Bush, and chief of staff for Indiana Sen. Richard Lugar. Daniels was widely viewed in 2011 as a viable candidate for the U.S. presidency before choosing not to run.

He is the author of two books, "Keeping the Republic: Saving America by Trusting Americans" and "Notes from the Road," a chronicle of his Indiana travels as a first-time political candidate.

Daniels earned a bachelor's degree with honors from the Woodrow Wilson School of Public and International Affairs at Princeton University in 1971 and a law degree from Georgetown University in 1979. He is the recipient of eight honorary degrees, including Butler University, Rose-Hulman Institute of Technology and Wabash College.



Industrial Advisory Council 2011-2012

The Industrial Advisory Council (IAC) serves an important role in the School of Aeronautics & Astronautics. The success of our programs depends on strong support from industry and the Industrial Advisory Council serves as a link between industry and the university. The IAC meets twice a year in the fall and spring and reviews a large variety of topics related to our current operations and future goals.

The 2011-2012 members of the IAC are shown to the right. We sincerely appreciate the efforts of the members of the IAC to take time from their busy schedules to assist us in our programs, and look forward to working with them in the future.

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

Vice President for Strategic Programs; Emergent Space Technologies

Mr. Bradley Duane Belcher (BSAAE'82)

Chief Experimental Engineer • Joint Strike Fighter F136 Engine • Rolls-Royce Corporation

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

Professor; Department of Mechanical and Aerospace Engineering; University of Miami

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. 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)

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 Corp.

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. Gary E. Mitchell (BSAE'60)

Retired - Vice President • Boeing Integrated Defense System

Mr. Gary E. Payton (MSAAE'72)

Distinguished Visiting Professor in the Erdle Chair in Engineering Sciences; U.S. Air Force Academy

Ms. Erika J. Pearson (BSAAE'93)

Business Director/Deputy VP Asia Pacific Sales • Boeing Company

Mr. James P. Renna (BSAAE'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, US Department of Defense Liaison for Purdue

Mr. Charles Robert Saff (BSAAE'71)

Boeing Technical Fellow • 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

Professor Emeritus Lawrence (Larry) T. Cargnino 1912-2012



Lawrence T. "Larry" Cargnino, professor emeritus of the School of Aeronautics and Astronautics at Purdue for 39 years, passed away Saturday, January 14, 2012 in West Lafayette at the age of 99. He was the last remaining member of the original group of faculty who formed the School of Aeronautics in 1945.

He was born in Virden, IL on December 27, 1912 and graduated from Girard High School in 1931 and from Illinois State University in 1941. During that year he

took an assignment with the Army Air Corp. as an instructor at Chanute Field, Rantoul, IL and later at Seymour Johnson Field in Goldsboro, NC.

Following his graduation from the Pratt & Whitney Engineering Officers Engine School in 1942, he worked at Ford's aircraft plant in Willow Run, MI where the B-24 bomber aircraft were built and later with Boeing aircraft plant in Seattle, WA, where the B-29 bomber aircraft were built until August 1945. He married Frances E. O'Reilly in 1944 in Pellston, MI. Surviving along with his wife are four daughters, eight grandchildren and 5 great grandchildren.

Professor Cargnino joined the Purdue School of Aeronautics as an instructor in September 1945 shortly after the school was formed on July 1, 1945. He received an M.S. degree in 1948 from Purdue and was promoted to assistant professor the following year and to associate professor in 1960.

In his early days at Purdue he was primarily involved in developing a new program in air transportation. Meanwhile he expanded and developed his area in propulsion which had been extended to turbo jet, turbo prop and rocket type propulsion. He was the major co-author of a college text in the field of aerospace propulsion widely used during the 1950's—1960's.

In 1964, he developed the **Cooperative Engineering Education Program** between major Aerospace companies and the School of Aeronautical and Engineering Sciences. The successful Co-Op program continues to this day.

In 1995 during his retirement he was co-author of a book titled: **"One Small Step - a History of the First 50 Years of the School of Aeronautics and Astronautics at Purdue."** He was a past member of American Institute of Aeronautics & Astronautics. During his tenure at Purdue he was the faculty sponsor of the Purdue Glider Club from 1945-65. He developed a 30 minute weekly program on WBAA titled: "This Week in Aviation" given by students in the school under his guidance.

As one of the original founders of the School of Aeronautics and Astronautics, Professor Cargnino was instrumental in setting the rigorous standards and educational programs which have resulted in the high esteem currently enjoyed by the School's faculty and students, and his efforts resulted in many alumni who went on to become leaders in the aerospace industry.

The contributions that he made regarding curriculum innovation, counseling and guidance, student lives, career development and placement, alumni relations, and most importantly, the quality of the undergraduate education and the reputation of the department, were one of the key factors of enabling Purdue to become one of the top aero schools in the country. He impacted the lives of thousands of students during his tenure at Purdue and, following his death, there were many tributes to him which were passed on to Frances and his family. Many alumni commented on his wise guidance and counseling, his teaching about patience and flexibility and how he kept students on a steady path towards the end goal – a degree in Aeronautical and Astronautical engineering. Professor Cargnino is truly missed by his many colleagues and students.

THE LAWRENCE T. CARGNINO COOPERATIVE SCHOLARSHIP

In recognition of Prof. Cargnino's many contributions and tireless dedication, The LAWRENCE T. CARGNINO COOPERATIVE SCHOLARSHIP, has been created in his honor by his wife Francis and their family and friends.

The undergraduate scholarship is designed for in-state students enrolled in the School of Aeronautics and Astronautics Cooperative Program in the College of Engineering.

We are seeking your assistance to help honor him by contributing to this endowment. Please consider making a gift that will benefit this undergraduate scholarship.

Alumni support is the key for a successful effort to honor his lasting legacy and the profound impact he had on Purdue's campus.

Your participation is essential to our success in helping Purdue School of Aeronautics and Astronautics continue to be a leader in the world. Please take this opportunity to be generous and demonstrate your loyalty and commitment!

If you would like to have further information, please contact Rita Baines, DIRECTOR OF DEVELOPMENT at the School of Aeronautics and Astronautics (765) 494-9124
rbaines@purdue.edu

The Lawrence T. Cargnino Cooperative Scholarship

Allocation Code #018143 Appeal Code #14512

Name: _____

Address: _____

City: _____ State: _____ ZIP: _____

School: _____ Year of Grad: _____

Spouse name: _____

Check enclosed (payable to Purdue Foundation)

Bill my credit card

I authorize \$ _____ to be charged to my VISA MasterCard Discover American Express

Account Number: _____ Expiration Date: _____ Security Code: _____

Print Name as it appears on card: _____

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Signature: _____ Date: _____

I will obtain the appropriate matching gift form and send it to the Purdue Foundation
(Remember, matching gifts increase your giving power)

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Please mail this form and your payment to:

Purdue University
School of Aeronautics and Astronautics
Attn. Rita Baines
Neil Armstrong Hall of Engineering, Room 3307
701 W. Stadium Avenue,
West Lafayette, IN 47907-2045

Please call if you have any questions
P: (765) 494-9124 or
email rbaines@purdue.edu

Purdue thanks you for your support!

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 MSAE degrees via distance learning.

The distance courses from Purdue's School of Aeronautics and Astronautics is 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/>

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Engineering Professional Education

Congratulations to Lisa Crain and Lynly Horine



Lisa Crain, undergraduate secretary in AAE received the 2012 Mortar Board Rose Award. Lisa was nominated by AAE student organization AAESAC.

This award honor's a member of the clerical or service staff at Purdue who always goes above and beyond the call of duty and Lisa was cited for her dedication to Scholarship, Leadership and Service.



Lynly Horine, account assistant in the ARMS business office for AAE and Materials Engineering was awarded the Eleanor O. Kaplan Award. This university-wide award recognizes individuals who demonstrate outstanding customer service, make significant contributions to their area through individual leadership, show creative or innovative methods of serving their customers, and provide significant contributions to improving customer service.

Congratulations to Lisa and Lynly on their significant accomplishments.

New staff members for AAE

The School of Aeronautics and Astronautics welcomed two new staff members during the year.

Vickie Schlene is the new receptionist. She has previously worked for the University in Information Technology. Vickie is married and has 2 boys, one still in high school and another in college.



Staci Dudley joins the school as AAE events coordinator and development. She worked for over ten years for Proctor & Gamble and has two sons.



We welcome them both. They look forward to meeting you on your next visit to campus.

Congratulations to Jenn and Ben LaGuire

Jenn LaGuire, husband Ben and big brother Brayden welcomed Milaya Alyasia Lynn LaGuire on March 26, 2012. Milaya was 8 lbs. 15 oz. and was 20 3/4" long. Jenn is the Administrative Assistant to the head of School Dr. Tom Shih.





High Powered Rockets



Satellite Launch



Team work in the Satellite Launch

Space Day



PSD Group Leader Julie DePauw listens intently to a young PSD student



With thanks to Purdue Pete who was on hand to welcome the students at the start of PSD



EPICS team with the trebuchet



Apollo 13 Team

The School of Aeronautics and Astronautics hosted its 16th annual Purdue Space Day (PSD) on November 5, 2011 with Purdue alumnus Gary Payton as guest VIP. Payton earned a master's degree in aeronautical and astronautical engineering at Purdue in 1972. He graduated from pilot training at Craig AFB, AL. in 1973. Payton gave a public presentation the evening before PSD to a very receptive audience.

Payton flew on STS-51C Discovery (January 24-27, 1985) which launched from and returned to land at the Kennedy Space Center, Florida. STS-51C was the first dedicated Space Shuttle Department of Defense mission. At the conclusion of the mission, Payton had traveled over 1.2 million miles in 48 Earth orbits, and logged more than 73 hours in space. He recently retired as Deputy Under Secretary of the Air Force for Space Programs.

Purdue 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. Payton addressed the students at the start of Space Day and then participated in activities throughout the day.

Purdue Space Day was supported by the Indiana Space Grant Consortium and the School of Aeronautics and Astronautics.



Col. Payton helps with Solar Cars

2011



(Left) Lockheed Martin instructor pilot Stormy Boudreaux highlights capabilities of the F-35 Lightning II integrated multifunction display to Gen. Bruce Carlson, Air Force Materiel Command commander. U.S. Air Force photo/Al Bright

Stormy Boudreaux, Former SR-71 and U-2 Pilot

Dr. Dan DeLaurentis and the **Aero/Astro Student Advisory Council** (AAESAC) presented former SR-71 and U-2 pilot Stormy Boudreaux to a packed audience in Armstrong Hall of Engineering on November 10, 2011. A native of New Orleans, LA, Stormy Boudreaux earned a Bachelor of Science in Biology and Education from Tulane University and a Master of Science in Aeronautics from Embry Riddle.

He served 24 years in US Air Force as Command Pilot, Standards and Evaluation Pilot and Functional Test Pilot, flew F-4, T-38, T-33, U-2 and SR-71 with over 6,000 hours. He is one of only twelve pilots who have flown operational sorties in both U-2 and SR-71 aircraft. With 680 hours combat time, combat veteran of Vietnam, Lebanon, Granada and Desert Storm operations. He retired from USAF in 1992, after commanding the U-2 detachment at Howard AB, Panama.

In 1995, he began work with Lockheed Martin's "Skunk Works," primarily on U-2 program, where he was part of 3-man team that designed, integrated and then tested the "glass cockpit" for the U-2 and was the "chair" of the U-2 Cockpit Working Group. In 2003, he transitioned to Lockheed Martin Fort Worth on the F-35 Lightning II program. He is currently a member of Lockheed Martin's Simulator and System Integration Laboratory Pilot-Vehicle-Interface Team, which has responsibility for the design of the F-35 cockpit. Since the design is nearly solid, his current primary position is Test Director and F-35 Instructor Pilot in the Partner Manned Tactical Simulation, teaching the F-35 Block 3 capabilities to US, Partner nation, and Foreign Military Sales pilots.

This presentation was made possible by the Lockheed Martin Corporation.

William E. Boeing Distinguished Lecture 2012

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 2012 lecture "**Creating Transformational Military Technology**" took place on February 28, 2012 and featured **Lt. General Patrick J. O'Reilly**, Director, Missile Defense Agency (MDA), Office of the Secretary of Defense, Pentagon, Washington, D.C.

During his visit, Lt. Gen O'Reilly met with Dr. Dan DeLaurentis and was given a presentation by his team who are working with the MDA to explore future Ballistic Missile Defense Architectures. DeLaurentis is leading the project and working with

Dr. Saurabh Bagchi, an associate professor in the School of Electrical and Computer Engineering. The research is founded 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.

During his visit, Lt. Gen. O'Reilly also met Dr. Stephen Heister, Dr. Bill Anderson and Dr. Tim Pourpoint at the Zucrow lab and took a tour of the Aerospace Sciences lab by Dr. Steven Schneider.

Head of school Dr. Tom Shih introduced Lt. Gen. O'Reilly at the start of the lecture which was broadcast live via webcast on the College of Engineering web page.



Lt. General Patrick J. O'Reilly
Photos courtesy of Brian Pomeroy



(L-R) Dr. Tom Shih, Michael Munizzi, Lt. Gen. O'Reilly, Matt Steiner, Dr. Dan DeLaurentis

Find us on Facebook

The School of Aeronautics and Astronautics enjoys utilizing **Facebook** and we now have over 1300 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!



Find us on
Facebook

Steering Advisory Council 2011-2012

Purdue's School of Aeronautics and Astronautics is extremely honored and grateful to have such distinguished individuals serving on our Steering Advisory Council (SAC). In 2011-12, three new members joined us: Ms. Natalie Crawford of Rand, Dr. Al Romig of Lockheed Martin, and Dr. Sigmar Wittig of Karlsruhe. Also, Dr. Paul Adam agreed to join us as a guest. The SAC advises and helps AAE in exploring and creating major opportunities in the aerospace arena that are timely and important at the national level - where Purdue's AAE can take a leadership role. The 2011-2012 members of the SAC are shown below. We sincerely appreciate the efforts of the members of the SAC to take time from their busy schedules to assist us in our programs, and look forward to working with them in the future.



Spring 2012 Meeting

Back row (L-R) Tom Shih, Dennis Warner, Darryl Davis and Alton Romig
Sitting (L-R) Douglas Bowers, Munir Sindir, Sigmar Wittig, and Matt Szolwinski

Paul R. Adams

Senior Vice President of Engineering & Technology • Pratt & Whitney
Guest Member

Douglas L. Bowers (BSAAE'72)

Director, Propulsion Directorate • United States Air Force Research Laboratory
U.S. Department of Defense Liaison for Purdue

Natalie W. Crawford

Senior Fellow • *RAND Corporation*

Darryl W. Davis (BSAAE'78)

President • Phantom Works • *Boeing Integrated Defense Systems*

Mr. William H. Gerstenmaier (BSAAE'77)

Associate Administrator, Human Exploration and Operations • *NASA*

Thomas L. Maxwell (BSAAE'69)

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

Alton D. Romig, Jr.

Vice President and General Manager • Advanced Development Programs • *Lockheed Martin Aeronautics Company*

Munir Sindir

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

Matt Szolwinski (BSAAE'93, MSAAE'95, Ph.D.'98)

Manager • *GENx Systems Engineering Manager – New Product Introduction*

Tom Vice (BS'86)

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

Dennis Warner (BSAAE'73, MSME'76)

President and CEO • *Rolls-Royce North American Inc.* • *Aero Engine Control, North America*

Sigmar Wittig

Professor • *Karlsruhe Institute of Technology*

Member of the Board of Presidents • *the Technical University System of the State of Niedersachsen - Association of Universities of Hannover, Braunschweig, and Clausthal*



Front row (L-R) Dr. Tom Shih, Dr. Al Novick, Professor Emeritus Terry Weisshaar, Professor Emeritus Larry Cargino, Professor Emeritus George Palmer, Professor Emeritus Gus Gustafson

Middle row (L-R) Stephen Kress, Jane Quirk, Michael Corso, Robert Flemming, Gary Mitchell, Wayne Tygert, Mike Moses, A. Dwight Abbott, Bob Strickler, Gary Payton, Brad Belcher, Frank Bauer

Back row (L-R) Jamie Renna, Richard Rivir, Paul Shattuck, Anthony Thornton, Andrew King, G. Wayne Hawk,



Outstanding AEROSPACE ENGINEER AWARD 2011

Ten graduates of the School of Aeronautics and Astronautics were honored with the School's highest honor at the 13th annual Outstanding Aerospace Engineer Award on October 21, 2011 at the University Plaza Hotel, West 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.



Master of Ceremonies Jeff Stuart and Rashmi Shah



Mike and Beth Moses with Dr. Stephen Heister and Dr. Steven Collicott and guests

The 2011 recipients were:



A. DWIGHT ABBOTT
General Manager,
Systems Engineering
The Aerospace Corporation
(Retired)



GARY E. MITCHELL
Vice President Europe Operations (Retired),
The Boeing Company



MICHAEL J. CORSO
Board Certified Civil Trial Lawyer,
Board Certified Business
Litigation Lawyer



MICHAEL P. MOSES
Vice President of Operations,
Virgin Galactic



ROBERT J. FLEMMING
Technical Fellow,
Research and Engineering Department,
Sikorsky Aircraft Corporation



JANE M. QUIRK
Missile Defense Agency,
System Engineering Directorate,
Aegis Ballistic Missile Defense,
and Acquisition and Contract
Management Directorate,
Department of Defense



G. WAYNE HAWK
Chairman and CEO (Retired),
Acme Electric Corporation



PAUL L. SHATTUCK
Director & Chief Engineer,
Directed Energy Systems,
*Lockheed Martin Space Systems
Company, Strategic & Missile
Defense Systems*



STEPHEN S. KRESS
Director of Advanced Air
and Missile Defense, *Lockheed
Martin Missiles
and Fire Control (LMMFC)*



WAYNE S. TYGERT
Director of Flight Sciences,
BCA Engineering,
Boeing Commercial Airplanes



Ariane Chepko and Kimberly Mrozek



(L-R) Amanda Knuston, Ben Ashman, Rashmi Shah, Katya Casper, Tom Pavlak, Katie Tetzloff, Isaac Tetzloff



Mary and Professor Emeritus Terry Weisshaar with Professor Emeritus George Palmer

PURDUE
UNIVERSITY



14TH 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
2012 Outstanding Aerospace Engineer Awards**

Friday, September 28, 2012

RECEPTION AT 6:30 P.M.

DINNER AT 7:30 P.M.

Four Points By Sheraton

(PREVIOUSLY UNIVERSITY PLAZA HOTEL)

1600 CUMBERLAND AVENUE
WEST LAFAYETTE, IN 47906

Adult Meal \$40

Student Meal \$30

Seating is limited. Reservations must be received by August 31, 2012.

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

RECIPIENTS OF THE

2012 Outstanding Aerospace Engineer Awards

Carl S. Gran BSAAE'74; MSAAE'74; PH.D.'78

Thomas E. Haueter BSAAE'74

Erika J. Pearson BSAAE'93

Robert Sattler BSAE'48

Terry Saunder MSAAE'91

William Torgerson BSAAE'83

John Walsh BSAAE'82

Glenn Weissinger BSAAE'77

14TH ANNUAL

Outstanding Aerospace Engineer Awards Friday, September 28, 2012

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 Foundation

**Sorry no phone
reservations accepted.
Email staci@purdue.edu**

Seating is limited.

**Reservations must
be made by
August 31, 2012.**

____ 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 request – please specify _____

AAE Faculty Roster

Aerodynamics

- A. Alexeenko**
Associate Professor;
Ph.D., Penn State, 2003
- S. Bane**
Assistant Professor;
Ph.D. Caltech, 2010
- G. A. Blaisdell**
Associate Professor;
Ph.D., Stanford, 1991
- S. H. Collicott**
Professor; Ph.D., Stanford, 1991
- M. C. Jischke**
President Emeritus; Ph.D.,
Massachusetts Institute of
Technology, 1968
- A. S. Lyrintzis**
Adjunct Professor;
Ph.D., Cornell, 1988
- S. P. Schneider**
Professor; Ph.D., Caltech, 1989
- T. I-P. Shih**
Professor and AAE Head; Ph.D.,
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, 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 Emeritus; 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
- K. C. Howell**
Hsu Lo Professor of Aeronautical
and Astronautical Engineering;
Ph.D., Stanford, 1983
- J. M. Longuski**
Professor, Ph.D., Michigan, 1979
- B. G. Marchand**
Adjunct Associate Professor,
Ph.D. Purdue, 2007
- H. J. Melosh** (*By Courtesy*)
Distinguished Professor EAS/Physics,
Ph.D. Caltech 1972

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, 2004
- D. Sun**
Assistant Professor; Ph.D., University
of California at Berkeley, 2008

Propulsion

- W. E. Anderson**
Professor; Director of Global
Engineering Program: Ph.D., The
Pennsylvania State University, 1996
- J. P. Gore** (*By Courtesy*)
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
- N. Key** (*By Courtesy*)
Assistant Professor of Mechanical
Engineering; Ph.D., Purdue, 2007

- R. Lucht** (*By Courtesy*)
Ralph and Bettye Bailey Professor of
Combustion in Mechanical Engineering;
Ph.D., Purdue 1981
- A. S. Novick**
Honorary Industry Professor;
Ph.D., Purdue, 1972
- T. L. Pourpoint**
Research Associate Professor,
Ph.D., Purdue, 2005
- L. Qiao**
Assistant Professor; Ph.D.,
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., Illinois, 1993

Structures & Materials

- W. Chen** (*Joint appointment
with Materials Engineering*)
Professor and Associate Head; Ph.D.,
California Institute of Technology, 1995
- W. A. Crossley**
Professor; Ph.D., Arizona State, 1995
- J. F. Doyle**
Professor; Ph.D., Illinois, 1977
- 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
- M. Sangid**
Assistant Professor; Ph.D.
Illinois, 2010
- 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 Emeritus;
Ph.D., Stanford, 1971

AIAA Top Honors 2012

Fellow of the American Institute of Aeronautics and Astronautics (AIAA)

AAE Professor **Dr. John Sullivan** and AAE alumni **Dr. David B. Doman** and **Dr. John Schmisser** have been honored as Fellow of the American Institute of Aeronautics and Astronautics (AIAA).

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.



Dr. David Doman graduated Magna Cum Laude from WVU with a BSAE in 1991, an MS in Aeronautics and Astronautics from Purdue in 1993, and a Ph.D. from Virginia Tech in 1998. Dr. Doman is currently a Principal Aerospace Engineer at the Air Force Research Laboratory and serves as the Director of the Control Science

Center of Excellence. Dr. Doman has been the author or co-author of 140 papers, technical reports, and articles. He has also been awarded 3 U.S. patents. He served as an Associate Editor for the Journal of Guidance, Control and Dynamics for 9 years and he is serving as the Secretary and Chair-Elect of the AIAA Guidance, Navigation, and Control Technical Committee.



Dr. John Schmisser received his Ph.D. from the School of Aeronautics and Astronautics in 1997, performing his graduate research under the guidance of **Professors Schneider and Collicott**. Since 2001 he has been the Program Manager for the Air Force Office of Scientific Research aerothermodynamics and Turbulence

portfolio, where he is responsible for the strategic development, execution and reporting of Air Force sponsored research in high-speed flows. He is currently the Chair of the AIAA Fluid Dynamics Technical Committee.



AAE professor **Dr. John Sullivan** received his Sc.D. in Aeronautical Engineering from the Massachusetts Institute of Technology in 1973 and has been a professor at the School of Aeronautics and Astronautics since 1975.

AIAA National Awards 2012

Prof. Steven Schneider and **Prof. John Sullivan** have received national awards from the American Institute of Aeronautics and Astronautics (AIAA).



Prof. Sullivan is also Director of the Center for Advanced Manufacturing and he has been selected to receive the AIAA Aerodynamic Measurement Technology Award for 2012. His award citation reads:

"In recognition of outstanding contributions to pressure- and temperature-sensitive paint-technology development for aerodynamic measurements."

Sullivan's work focuses primarily on experimental aerodynamics laser instrumentation, luminescent sensors for temperature and pressure measurements.



Prof. Schneider has been selected to receive the AIAA Ground Testing Award for 2012 and was cited for: ***"exceptional technical contributions and leadership in the advancement and utilization of quiet hypersonic ground test facilities: fostering scientific progress and supporting national technical priorities."***

Schneider's work focuses on hypersonic and supersonic laminar-turbulent transition. His research includes the development of the Boeing/AFOSR Mach-6 Quiet Tunnel and associate instrumentation.

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.

Welcome New AAE Faculty 2012-2013

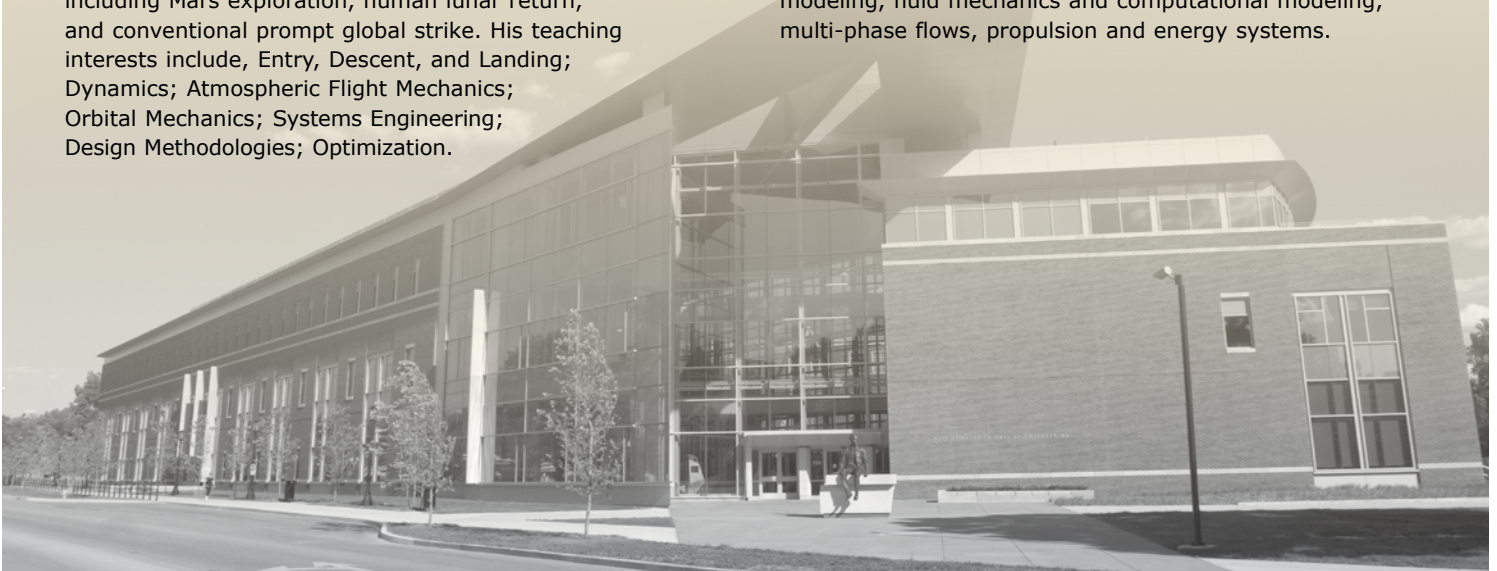
The School of Aeronautics and Astronautics welcomes two new members of faculty.

Dr. Michael Grant received a B.S. degree in Aeronautical and Astronautical Engineering with a minor in Math from Purdue University in 2005, and his M.S. and Ph.D. degrees in Aerospace Engineering from Georgia Institute of Technology in 2008 and 2012, respectively.

Dr. Grant has had extensive experience in systems engineering, guidance and flight design. The focus of his research is entry, descent, and landing of human and robotic systems at Earth and Mars. His research and experience has encompassed a variety of missions, including Mars exploration, human lunar return, and conventional prompt global strike. His teaching interests include, Entry, Descent, and Landing; Dynamics; Atmospheric Flight Mechanics; Orbital Mechanics; Systems Engineering; Design Methodologies; Optimization.

Dr. Heifeng Wang received a B.S. degree from the University of Science and Technology of China in 2000, and his M.S. and Ph.D. degrees in Mechanical Engineering from Cornell University in 2008 and 2010, respectively.

His areas of research are turbulence and combustion modeling, fluid mechanics and computational modeling, multi-phase flows, propulsion and energy systems. He is the principal developer of HPDF — a high-performance parallel PDF particle code for turbulent combustion. His main research interests include turbulence and combustion modeling, fluid mechanics and computational modeling, multi-phase flows, propulsion and energy systems.



Faculty Awards Convocation

Dr. James Doyle and Dr. Kathleen Howell were recognized for 35 years and 30 years of service respectively at the Faculty Awards Convocation held on April 26.



Dr. James Doyle



Dr. Kathleen Howell





Dr. Dan DeLaurentis

October 2011

2011 International Postgraduate Academic Forum

Associate Professor Dan DeLaurentis and Ph.D. students Don Fry and Jacob Haderlie (advisor Dr. Bill Crossley) were invited by Beihang University in Beijing, China to present at the 2011 International Postgraduate Academic Forum in October, 2011. During the week-long forum, Don and Jacob each presented their ongoing doctoral research as guest lecturers for a large group of Beihang graduate students and faculty. Additionally, Dr. DeLaurentis presented an overview of the past and current research his team has done in the area of System-of-Systems.

November 2011

Seeds for Success Award

Dr. DeLaurentis was presented with the 'Seeds for Success' Award at the Excellence in Research Awards dinner on November 1, 2011. These awards are given to principal investigators and co-principal investigators of projects that are each worth \$1 million or more in grants.

February 2012

Gold Boeing Performance Award

AAE System of Systems Laboratory led by Associate Professor Daniel DeLaurentis has received a 2011 Boeing Performance Excellence Award. The Boeing Company issues the award annually to recognize suppliers who have achieved superior performance. The Lab maintained a Gold composite performance rating for each month of the 12-month performance period, from Oct. 1, 2010, to Sept. 30, 2011. Grad students Shashank Tamaskar and Kartavya Neema contributed to the outstanding work on the project and the group conducted research and supplied new metrics for system complexity as part of Boeing's team performing under the DARPA META program.

March 2012

German-American Frontiers of Engineering Symposium - Potsdam, Germany

Dr. DeLaurentis was an invited participant of the German-American Frontiers of Engineering Symposium in March 2012. GAFOE aims to bring together outstanding, early-career German and American engineers from industry, universities, and other research institutions to introduce their areas of engineering research and technical work, which could eventually lead to collaborative networks of engineers from both countries. The total number of participants, including organizers, speakers, and other participants, numbers approximately 60, with 30 engineers from each country with participation by invitation only.

May 2012

MDA Certificate of Appreciation

Lt. Col. Reid Vander Schaaf (U.S. Army), Program Manager Enhanced C2BMC, visited Purdue on 1 May; He met with Dr. Dan DeLaurentis and his team who are working with the MDA to explore future Ballistic Missile Defense Architectures.

Lt. Col. Vander Schaaf also presented Certificates of Appreciation from the MDA to the team in recognition of their work to date as well as on the high quality briefing they gave to the director of the MDA Lt. Gen. O'Reilly when he visited Purdue in February. While on campus in February, Lt. Gen. O'Reilly also presented the 2012 William E. Boeing Distinguished Lecture.



*From bottom (L-R)
Dr. Saurabh Bagchi (ECE);
Dr. DeLaurentis; Dr. Tom Shih;
Jevin Sweval; Dr. Stephen Heister;
LTC Reid Vander Schaaf (MDA);
Paul Wood; Don Fry; Muharrem Mane;
Kevin Bonanne; Mack Pasqual;
David Braun (ITaP); Kris Ezra;
Ali Khalid; Ron Chow; Jacob Haderlie*

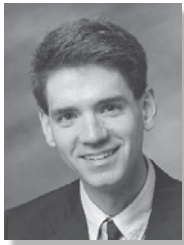


Dr. Alina Alexeenko

April 2012

Dr. Alina Alexeenko has been promoted from Assistant Professor to Associate Professor with tenure.

Dr. Alexeenko was recognized at the Purdue faculty convocation in April 2012 for winning the National Science Foundation's most prestigious honor for outstanding young researchers in 2011. The NSF issues about 400 Faculty Early Career Development awards annually. Dr. Alexeenko received her Ph.D. from Pennsylvania State University in 2003.



Dr. Bill Crossley

April 2012

Bruhn Best Teacher Award

This year's student voting for the School's Bruhn Best Teacher Award has resulted in the selection of Dr. Bill Crossley for this award.

A rank order listing of the first five finishers in this ballot are listed below. (Profs Howell and Heister were not eligible, having won the award during the last 2 years.)

Top five (in order)

- Professor Crossley
- Professor Longuski
- Professor Marais
- Professor Blaisdell
- Professor Alexeenko



Dr. Martin Corless

October 2011

The C.T. Sun Research Award

Congratulations to Dr. Martin Corless who was the recipient of the C.T. Sun Research Award. This prestigious 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.

Corless is a member of AAE's Dynamics and Control group Corless has made landmark contributions in developing results and practical computational procedures for the analysis and robust control of nonlinear/uncertain systems and with the application of these results to a variety of problems occurring in spacecraft attitude control, spacecraft guidance, robotics, vehicle dynamics, engines, tensegrity structures, chemical plants, machining, ecology and communication networks. He has also made major contributions in the areas of adaptive control and the analysis and control of singularly perturbed systems.

Corless was also the winner of the W. A. Gustafson Undergraduate Teaching Award in 2003 and 2009.



Head of School and Professor Tom Shih presents Dr. Corless with the C.T. Sun Research Award



Dr. Art Frazho

May 2012

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 Dr. Art Frazho for this honor. Coming in 2nd was Dr. Kathleen Howell and 3rd was Dr. Stephen Heister.



Dr. James Garrison

November 2011

National Academies Keck Futures Initiative (NAKFI)

Dr. Jim Garrison was an invited participant of the National Academies Keck Futures Initiative, Ecosystem Services conference. NAKFI is a program of the National Academy of Sciences (NAS), the National Academy of Engineering (NAE), and the Institute of Medicine (IOM) with support from the W.M. Keck Foundation. Launched in 2003, NAKFI has been catalyzing interdisciplinary research at the intersection of science, engineering and medicine, and enhancing education among researchers, funding organizations, and universities.



Dr. Timothée Pourpoint

April 2012

Dr. Timothée Pourpoint has been promoted from Research Assistant Professor to Research Associate Professor. He received his Ph.D. from Purdue University in 2005.

His areas of interest include Aerospace propulsion systems, Rocket engine combustors, Liquid propellant injection systems, Hypergolic propellants, and High pressure and hydrogen storage systems.



Dr. Vikas Tomar

March 2012

Dr. Vikas Tomar was appointed as Young Oberwolfach Fellow, at the Mechanics of Materials Workshop, The Mathematisches Forschungsinstitut Oberwolfach, Germany.

Former AAE Head Dr. Henry T. Yang Appointed to The President's Committee on the National Medal of Science

January 2012

Former head of the School of Aeronautics and Astronautics Dr. Henry T. Yang, chancellor of the University of California at Santa Barbara (UCSB), was appointed by President Obama to the President's Committee on the National Medal of Science. Dr. Yang, an AIAA Fellow, was previously appointed to the committee by then-President George W. Bush.

Prior to becoming chancellor of UCSB, Yang was the Neil Armstrong Distinguished Professor of Aeronautics and Astronautics and dean of the Engineering Department, at Purdue.

Dr. Yang's long experience at Purdue University, leading the aerospace engineering department and later as the dean of engineering, make him well qualified to sit on this prestigious board. He will be responsible for selecting the recipients of one of the nation's highest scientific honors. This appointment further demonstrates the important role that aerospace engineers and scientists play in our nation's technical achievements and advancements.

Yang is a member of the National Academy of Engineering, chair of the Association of Pacific Rim Universities, a member of the Kavli Foundation Board, and chair of the Thirty Meter Telescope Project. In addition to being an AIAA Fellow, he is a Fellow of the American Society of Mechanical Engineers, and the American Society for Engineering Education. His past honors include the ASEE Benjamin Garver Lamme Award, and the 2008 AIAA Structures, Structural Dynamics, and Materials Award. He received an Honorary Doctorate from West Virginia University in May 2011 where he was commencement speaker. 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.



Purdue Professor holds a prominent role in NASA Technology Roadmap

Professor Jay Melosh (AAE by Courtesy) has been cited as an architect of an important publication. He was a member of the Steering Committee for NASA Space Technology Roadmaps. The report – *"Restoring NASA's Technological Edge and Paving the Way for a New Era in Space,"* comes under the auspices of The National Research Council of the National Academies.

Melosh served on the Steering Committee, wrote portions of the final report and worked with the other members of the committee to reach what turned out to be a difficult consensus on the final recommendations and priority listings. He also worked with the Human Factors sub-panel as one of his particular interests in the final technology review.





Dr. Bill Anderson

April 2012

Congratulations to Dr. Bill Anderson who was promoted to full professor

Project Morpheus - The Big Ten Network's "Impact the World" program was shown on Jan 24th and provided coverage of Dr. Anderson's rocket project with NASA.

Pictured above from left are graduate students Michael Bedard, Emerald McKinney, Thomas Feldman and Andrew Rettenmaier. The work is part of the NASA-funded Project Morpheus, which includes research to develop new technologies for future trips to the moon, Mars or asteroids. Also working on the project are Isaac Statnekov and undergraduates David Hailey and Ryan Tatro (*Purdue University photo/Mark Simons*)

May 2012 - Purdue LIVE

America's Space Gene: Where Do We Go and How Do We Get There?

Dr. Bill Anderson was a panel member at Purdue LIVE at the Adler Planetarium in Chicago on Wednesday, May 2.

Formerly known as Purdue on the Road - a new series of events featuring thought provoking discussion and Boilermaker fellowship took place spring 2012. Purdue alumnus astronaut Jerry Ross was also a panel member along with Professor of



History Randy Roberts. Moira Gunn, professor ME at Purdue, Founder & Host of Tech Nation and BioTech Nation was moderator.



Dr. Steven Collicott

February 2012

Dr. Steven Collicott was a guest of children's show The Friday Zone in February 2012. He recorded the 'space exploration' episode in the Bloomington studio and took with him

some videos, experiment hardware from successful flight tests, and simple drinking-straw type of demonstrations of "capillarity," or the physics of capillary action (wicking) of liquids.

The experiments and demonstrations came from his AAE 418 class activities which focus on the NASA Reduced Gravity Student Flight Opportunity Program. This program is also known as the Zero G class and the airplane is affectionately known as the "vomit-comet."

Dr. Collicott and the School of Aeronautics and Astronautics have been involved in the NASA Reduced Gravity Student Flight Opportunity Program since the program began in the fall of 1996. He specializes in research and engineering on low gravity fluids topics and he advised the first few teams of students as an extra-curricular educational activity. Collicott then created an upper-level undergraduate course for students to design zero-gravity flight experiments specifically for the NASA program which then became part of the curriculum. In all, it is a team-based, hands-on multidisciplinary experience.

Purdue AAE students lead the nation in successes in this NASA competition, with the thirtieth AAE team led by Corey Pearce, taking part in flight testing.



June 2012 - AAE 418 Zero-Gravity Flight Experiment Team

- Corey Pearce (lead)
- Nolan Murray (flyer)
- Kelley Jones
- Monica Fernandez
- Erich Lohmann
- Dan Jones
- Sarah St Clair
- Stephanie Johnston (flyer)
- Alex Green (ground crew)
- Dana Halline
- Nick Edwards
- Matthew Faller
- Joe Kubinski (alternate)
- Not pictured**
- Brian Lutomski
- Devin Kees
- Jordan Towles-Moore

Dr. Collicott and three students from his AAE418 class attended Spaceport America's vertical launch complex in southern New Mexico the weekend of December 2, 2011 and were on-hand to oversee their experiment on the launch with Armadillo Aerospace STIG-A rocket.

The Purdue SPEAR-3 experiment was designed, built, tested, integrated, and performed by the team which included Michael Croak, Saverio Rotella and exchange student from Malaysia Yi Syuen Li. AAE 418 team members who did not travel were: Shao Teng Chong, Yuankai Wang and Rozaine Wijekularatne. The experiment studied a liquid and gas flow process that is

sensitive to the gravity and acceleration levels encountered during spaceflight.

Designed and built by Armadillo to test major components of the future vehicle that will fly Space Adventures customers, the rocket exceeded its projected altitude by reaching 137,500 ft. when it launched on December 4.



Photo after the flight, (L-R): Collicott, Li (holding the experiment), Croak, Rotella.

Aero Social Night

Pictured with Dr. Tom Shih at the Aero Social Night in April 2012 are students from the first course he taught at Purdue – AAE 333

Derek Berg, Dan Engle, Alex Byers, Joe Kubinski, and Tara Yeager



Dr. Datu Buyung Agusdinata Post-Doctoral Fellow



Wins Inaugural James E. Long Memorial Post Doctoral Fellowship

The INCOSE Washington Metro Area established the James E. Long Memorial Post-Doctoral Fellowship in December 2010. Intended to honor the memory of longtime member James E. Long, the award is proposed to Inspire and recognize innovative post doctorate level research that has the potential to produce major improvements in advancing the practice of systems engineering and systems thinking. This award carries a \$5,000 grant to post-doctoral researchers along with a plaque and recognition at the annual INCOSE Symposium.

Global Policy Research Institute (GPRI)

A multi-disciplinary research team led by Dr. Datu Buyung Agusdinata has received a 2012 incentive award from the Global Policy Research Institute (GPRI). The team will develop a prototype computational tool to inform policy design to mitigate drought impacts in East Africa, which represents some of the most pressing technological, humanitarian, and political challenges of our time.

To tackle such a complex problem, Dr. Agusdinata will apply Systems Engineering approaches developed within the System-of-Systems Lab led by Dr. Dan DeLaurentis. The project also receives a match-support from the Purdue Global Engineering Program led by Dr. William Anderson.

Dr. Agusdinata is currently a Postdoctoral Fellow at the AAE System-of-Systems Laboratory. His research interest is in System-of-Systems Methodology, Sustainable Energy and Transport System, Risk and Uncertainty Analysis, Multi-Criteria Decision Analysis, Life Cycle Assessment, Renewable Energy.

Dr. Wayne Chen

Associate Head of the Graduate Program



Dr. Wayne Chen was appointed to serve as Associate Head of the Graduate Program effective from January 2, 2012. Dr. Marc Williams continues in his role as Associate Head for the Undergraduate Program.

He is a Professor of Aeronautics and Astronautics and Materials Engineering and is considered as one of the world's top researcher in the development of experimental methods for the interrogation of dynamic behavior of materials.

His methods are being used at numerous laboratories, including the Sandia National Laboratories, the National Institute of Standard and Technology, and the U.S. Army Research Laboratory.

Dr. Chen is a Fellow of the American Society of Mechanical Engineers (ASME) and an Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA). He was named University Faculty Scholar at Purdue in 2005 and currently serves as a member of the United States National Committee on Theoretical and Applied Mechanics, the top mechanics committee in the US. He was the recipient of the C.T. Sun Research Award from the School of Aeronautics and Astronautics at Purdue in 2008.

The school thanks the departing Associate Head, Dr. Tasos Lyrintzis for his many years of dedicated service and wishes him well in his new position of the Chair of the Department of Aerospace Engineering at Embry-Riddle University in Florida.



Dr. Anastasios S. Lyrintzis

Dr. Tasos Lyrintzis, Associate Head of our school and Director of our school's graduate program, was appointed the Chair of the Department of Aerospace Engineering at Embry-Riddle University in Florida from Jan. 2012.

Dr. Lyrintzis has served our school, college, and university in the most exemplary manner. He is a caring teacher, an outstanding researcher, and a wonderful colleague and we wish him well in his new life.

Professor C. T. Sun

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.

This award was presented to Professor Sun at the 53rd AIAA Structures, Structural Dynamics, and Materials Conference Awards luncheon which took place April 25, 2012. AIAA postponed giving the award from last year until Professor Sun was able to receive it in person.

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."



Dr. Karen Marais

Dr. Karen Marais 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.

Congratulations to our graduates 2011-2012

During the 2011-2012 school year
the School of Aeronautics and Astronautics
awarded 157 BSAE degrees, 98 MS degrees,
and 21 Ph.D. degrees.

Dennis Chu and Jason Iafigliola

Ph.D. degrees

MAY 2012

Devendra Dubey
Joshua Dustin
Aurelie Heritier
Tatsuya Kotegawa
Alfred Lynam
Andrew J. Ritchey
Matthew P. Snyder
Adam A. Trebs

DECEMBER 2011

Sricharan
Ayyalasomayajula
Jit-Tat Chen
Jung-San Chen
Sruti Chigullapalli
Matthew Conway
Navindran
Davendralingam
Steven Lamberson
Randolph Lillard
Changjin Yoon

AUGUST 2011

Lee Coduti
Diane Craig
Yun Ge
Geoffrey Wawrzyniak

August 2011

BS

Noor Emir Anuar
Jane I. Kinney

MS

Jason Bank
Yin Lam Dick Chow
James Davis
Kristopher Ezra
Karl Fetzer
Alexander Finch
Matthew Hinkelman
Ji Hye Hong
Jayme Howsman
Nithin Kolencherry
Hongsuk Lee
Garrett Mann
Wesley McDonald
Magdalena Muller
Anthony Robertson
Stanford Rosen
Lauren Sharp
Souleymane Sow
Shashank Tamaskar
Saad Tanvir
Payuna Uday
Christopher Zaseck

December 2011

BS

Aaron L. Cheung
Hyun Choi
Brian K. Clegg
Paul E Davis
Rajat Dua
Jason C. Eggiman
Alexander F. Faust
Bradley M. Gilmer
David W. Ginsburg
David M. Hailey
Matthew E. Hill
Daniel W. Ho
Steven W. Jacque
Dustin M. Johnson
Jason J. Kemmerling
Nicholas H. Kendall
Justin T. Krull
Joel J. Lau
Boon Him Lim
Christopher G. Luken
Stephen M. Lundry
David H. Lynch
Bradley D. Mauser
Robert S. Mc Cabe
Katherine M. Morley
Daniel J. Murzyn
Tyler J. O'Diam

Devon D. Parkos
Robert E. Pribish
Thomas R. Rainey
Michael D. Reuter
David N. Roe
Erika L. Schmitmeyer
Zachary T. Schuette
Pranit P. Shah
Ryan C. Shelley
Robert E. Shepard
Shoko Sonoda
Benjamin W. Stirgwolt
Vincent P. Storelli
Logan S. Waddell
Craig J. Wikert
Wenyao Xie
Askar Yessirkepov

MS

Ulvi Acikoz
Neal Allgood
Daniel Anderson
David Benson
Martin Bode
Anne Bossi
Christabelle Bosson
Aaron Burgart
Loic Chappaz

Joseph Dussling
Peter Edelman
Jacob Fuka
Jennifer Fuka
Douglas Gitomer
Matthew Gordon
Nicholas Heinz
Asha Hosangadi
Brent Kam-Young
Joshua Keener
Hayne Kim
Mark Koch
Alexander LaComb
Arin Lastufka
Laura Letterman
Matthew Louis
Rohit Mahakali
Kaela Martin
Andrea Mazzurco
Raakesh Pankanti
Niraj Patel
Rukshan Perera
Robin Pinson
Kevin Quach
Rizwan Qureshi
Wayne Schlei
Natalie Smith
Shuo-hsien Wang
Maichel Zander



Prof. Kathleen Howell and Rozaine Wijekularatne



Jenny DePauw and Dana Halline



Professor Skip Grandt and Zaid Alami

CONGRATULATIONS TO ALL OF OUR GRADUATES

May 2012

BS

Zaid M. Alami
 Michael A.
 Ashenbrener
 Mounia Belmouss
 Dewayne D. Bishop
 Sean F. Bogaert
 Alonzo P. Borchert
 Benjamin P. Bowman
 Shaun P. Brennan
 Jeremy J. Bushey
 Alex H. Byers
 Enoch A. Byers
 Michael G. Catalfamo
 Shao Teng Chong
 Jonathan M.
 Chrzanowski
 Dennis H. Chu
 Benjamin J. Claus
 Roberto A. Colon
 Ashley N. Davis
 Jennifer M. De Pauw
 Charles A. Doctor
 Scott K. Duncan
 Javier Esquivel
 Lance C. Favior
 Matthew B. Faller
 Geoffrey W. Fishinging
 David C. Fox
 Rosalie M. Geeck
 Walter F. Glowicki
 Alexander H. Green

Andrew M. Hacha
 Dana M. Halline
 Timothy C. Harris
 Lauren A. Henning
 Brandon L. Herren
 Catherine E. Herrerger
 Mark W. Homan
 Kyle G. Hoos
 Jason M. Iafigliola
 Shourya Jain
 Ajay S. Jakate
 Nipuna J. Jayakody
 Rebecca J. Johanning
 Benjamin G. John
 Stephanie S. Johnston
 Daniel A. Jones
 Alex J. Jordan
 Lance T. Kamiyama
 Devin J. Kees
 Linden J. Kelley
 Jacob L. Kerford
 Chad M. Kiel
 Peter J. Klintstiver
 Robert A. Krob
 Joseph H. Kubinski'
 Lisa M. Kurtzhals
 Morgan A. Lashaw
 Daniel E. Lastukhin
 Benjamin F. Lee
 Mark A. Lefebvre
 Daniel E. Lejeune
 Tanest Lertkajornkitti

Alec R. Lewis
 Erich A. Lohmann
 Joubert Lucas
 Alex D. Lucky
 Joel M. Lugo
 Brian T. Lutomski
 Kirk A. Maatman, II
 Sara M. Mc Nally
 Thomas J. Mifsud
 Charles A. Miller
 Kevin R. Muha
 Eric M. Mundy
 Shashank Munjal
 Nolan P. Murray
 Richard L. O'Connor
 Patrick J. O'Rear
 Michael A. Parmentier
 Marilyn M. Perry
 Jesus Pozo-Visus
 Andrew C. Pratt
 Craig S. Price
 Lawrence A. Quinto
 Fernando Ramirez
 Leah F. Rankin
 Lawrence E. Raoux
 Samantha M. Rieger
 John C. Roesslein
 Saverio J. Rotella
 Cassandra M. Sands
 Nandagopal
 Sathyamoorthy
 Stuart P. Seador

Aditya Srinivasan
 Daniel M. Steinbaugh
 Christopher A. Stewart
 Zachary T. Stratton
 Matthew M. Sunday
 John K. Tegah
 Jordan M. Towles-Moore
 Parthasarathi Trivedi
 Shyam Veerasankar
 Zachary J. Wallace
 Yuankai Wang
 Collin M. Weir
 Rozaine S. Wijekularatne
 Lee A. Wiwi
 Mohd Alhafidz Yahya
 Tara K. Yeager
 Jonathan S. Young
 Melissa S. Young
 Hunter R. Zillmer

MS

Peter Alvarado
 Gihun Bae
 Joseph Buckley
 Mohit Chaturvedi
 Matthew Cherry
 Timothy Cox
 Daniel Fadgen
 Andrew Faust
 David Feeney
 Isa Fritz
 S. Gomatam
 Ramachandran

Adam Harden
 Christopher Huberty
 Michael Iwanicki
 Nicholas Jensen
 Kevin Johnson
 Kyle Kennedy
 Jonathan Kirkegaard
 Oleksandr Kravchenko
 Hangjie Liao
 Michael Muetherthies
 Bogdan Pavlov
 Jose Paz Soldan Guerra
 Mark Pfeil
 Lucie Poulet
 Frank Prior
 Peter Psaras
 Andrew Rettenmaier
 Jeffrey Rodriguez
 Yair Solomon
 Hwan Song
 Christopher Spreen
 Isaac Statnekov
 Allen Thomas
 Charles Tytler
 Juan Carlos Vergara
 Arenas
 C. Wanko Tchatchouang
 Alexander Whiteman

STUDENT *awards*

AAE General Scholarship

Nicholas Eisenhauer,
Justin Guastaferrero, Yu Huang,
David Kun, Joel Lau, Sai Mun
Kenneth Loo, Eric Maglio,
Shashank Munjal, Parth Shah,
Allison Shultz, Zachary Stratton,
Jesse Thomson, Saagar Unadkat,
Christian Vuong, Hao Wang

AIAA 2011 Liquid Propulsion Award

Thomas Feldman

AIAA David and Catherine Thompson Space Technology Scholarship

Sarah Arnac

AIAA Foundation Scholarship Junior Award

Kaizad Raimalwala

AIAA Martin Summerfield Graduate Award in Propellants and Combustion

Brian Pomeroy

Andrea Chavez Scholarship

Jessica Powell

Andrew Kasowski Scholarship

Michael Ashenbrenner
and Kilian Cooley

Arthur S. Remson Memorial Scholarship

Timothy Machin

ASME IMECE 2011 Micro & Nano Technology Society-Wide Forum - Second Prize in poster competition

Sruti Chigullapalli

Bilsland Dissertation Fellowship

Ming Gan

Boeing Undergraduate Scholars

Ryan Kobert, Jean Ruggiero,
Drew Sommer, Nicholas
Spoentgen, Andrew Strongrich

CETA Excellence in Teaching Award

Masaki Kakoi, Logan Larson

David L. Filmer Scholarship

Parthsarathi Trivedi

David O. and Linda Schimmel Swain Scholarship

Nicholas Sierra, Alexis Turner,
Itanza Wright, Jani Dominguez

George & Patricia Palmer Scholarship

Roy Fisher, Devon Parkos,
Raymond Strychalski

IAA/AAS Conference on the Dynamics and Control of Space Systems, Portugal 2012 – Best Paper

Mar Vaquero

John and Patricia Rich Scholarship

Andrew Cox, Roshan Jobanputra,
Alex Lucky, Eric Meier, Shawn
Olsavsky, Bennett Olson, Craig Price,
Kaizad Raimalwala, Parthsarathi
Trivedi, Logan White

Herbert F. Rogers Award

Jenny DePauw

Magoon Excellence in Teaching Award

Loic Chappaz, Logan Larson,
Sang-Hyun Shin, Saad Tanvir,
Winnie Wei

The Marc Christopher Weaver Memorial Scholarship

Randy Eckman, Rebecca Johanning

NASA Space Technology Research (NSTRF) Fellowship

Matt Wierman, Jeff Stuart

National Science Foundation Fellowship

Heather Wiest

National Science Foundation Honorable Mention

Jesus O. Mares

Orrin Arthur Austin Memorial Scholarship

Timothy Machin

Outstanding Service Award

Katya Casper

Peter Mueller Memorial Scholarship

Seth Trey

Pratt & Whitney Rocketdyne Scholarship

Corey Davis, Nicoletta Fala

PGSG Graduate Student Excellence Award 2012

Rashmi Shah

Purdue Forever Fellowships

Jonathan Goodsell and Isaac Tetzloff

Sandia Excellence in Science and Engineering Research Fellowship

Marat Kulakhmetov

School of Languages and Cultures 2012 Excellence in Teaching Award

Mar Vaquero

Warren G. Koerner Scholarship

Geoffrey Bianchini, Nicholas Correll,
Mark Danielson, Javier Esquivel,
Jonathan Hughes, Shyngys Karimov,
Dongwook Kim, Nicholas Makarowski,
Brandon Pucio, Mark Rasmussen,
Michael Sparapany, Christopher
Trickle, Rajat Dua

William & Sally Dunton Scholarship

Corbin Krenk

Zonta International Amelia Earhart Fellowship

Amanda Chou, Amanda Haapala,
Mar Vaquero

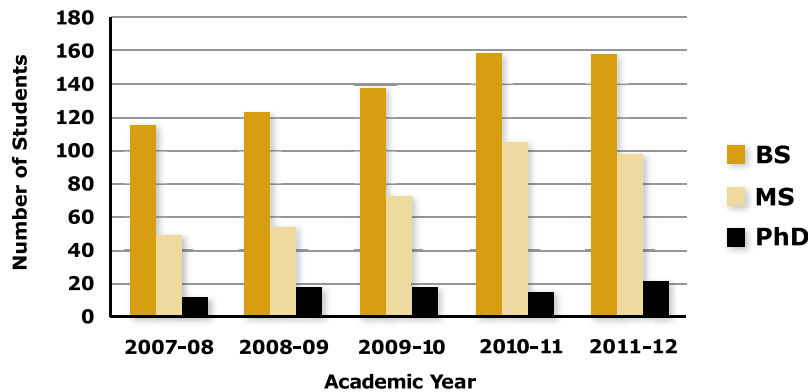
Ph.D. student, **Matt Hudspeth** won the first-place in the International Student Paper Competition at the SEM XII International Congress & Exposition on Experimental @ Applied Mechanics, June 11-14, 2012, Costa Mesa, CA. Dr. Weinong Chen is Matt's advisor.

SGT AAE Outstanding Senior

Each year the Aeronautics Honorary Society, Sigma Gamma Tau, sponsors the AAE Outstanding Senior Award. The nominees are selected by the faculty, and the recipient is selected by a student vote. Congratulations to **Lauren Henning**.

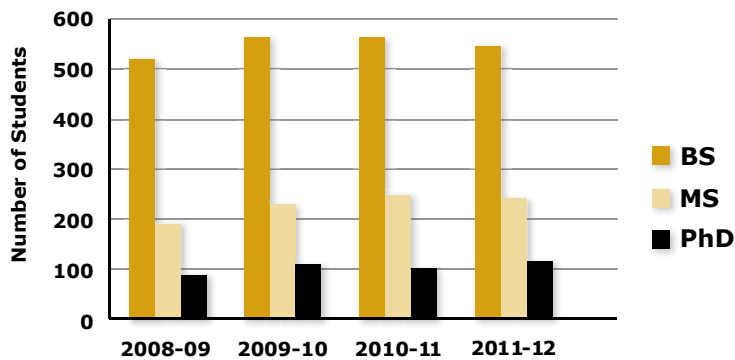


AAE Graduates



Enrollment at the undergraduate level continues to be strong and stable. In Fall 2011, there were 546 sophomores, juniors, and seniors. At the graduate level, the enrollment has steadily increased. In Fall 2011-12, there were 369 graduate students with 252 M.S. and 117 Ph.D., and this is the highest enrollment in the school's history.

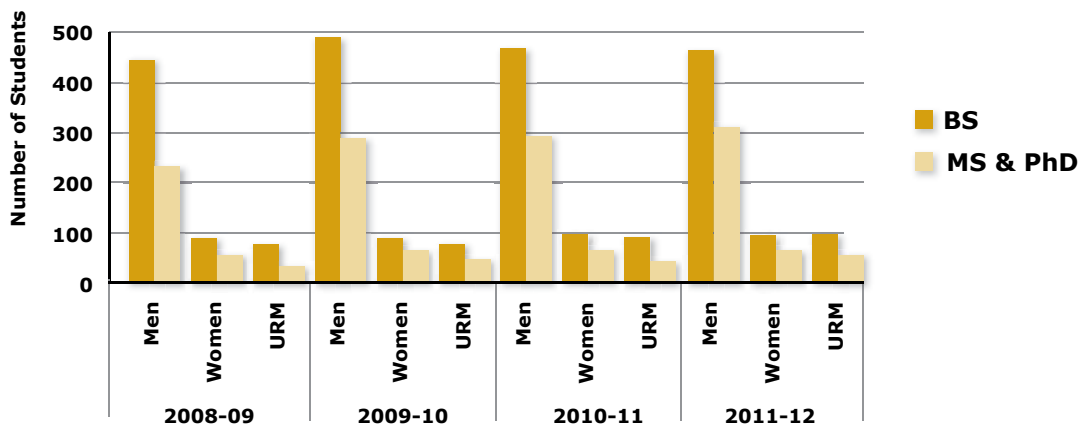
AAE Undergraduate & Graduate Enrollment



On the makeup of the students, it is as follows. At the undergraduate level, 15.6% are female, 7.0% are under represented minority (URM), and 14.5% are international. At the graduate level, 14.6% are female, 3.3% are URM, and 35.5% are international.

The number of students graduating with B.S., M.S., and Ph.D. are steadily increasing. In 2011-12, we graduated 157 B.S. students, 98 M.S. students, and 21 Ph.D. students. Of the M.S. student almost all are thesis option.

Student Diversity and Underepresented Minorities



STUDENT *awards*

Purdue Forever Fellowship 2012

Congratulations to **Jonathan Goodsell** and **Isaac Tetzloff** who have been named as the 2012 recipients for The Purdue Forever Fellowship.

The Purdue Forever Fellowship was established through a generous endowment for C.D. McAllister (BSEE'20), Jean McAllister Elrod (BSSCI'51) and Robert H. Elrod (BSSCI'51). This endowment provides supplemental support for exceptional PhD students in the School of Aeronautics and Astronautics. The selection of recipients is based on academic achievement, potential for future professional achievement and creativity in research.



Jonathan Goodsell



Isaac Tetzloff

National Defense Science and Engineering Graduate (NDSEG) Fellowship

Congratulations to AAE grad student **Brandon Terry** who has been awarded The National Defense Science and Engineering Graduate (NDSEG) Fellowship. Professor Steven Son is Brandon's advisor.

On the very day that Brandon received the notification of the NDSEG Fellowship, Brandon's wife DeLenna Terry gave birth to their first baby, a daughter, Taylor Maud Terry. Taylor was born on Monday April 16, 2012 at 8:50pm. She was 8 lbs. 15 oz. and was 22 inches long. Brandon and DeLenna moved to Purdue from Utah in order for him to pursue his Ph.D. in the School of Aeronautics and Astronautics and to be able to concentrate on propulsion research at Zucrow Laboratories.

The NDSEG Fellowship is sponsored by the Air Force Office of Scientific Research (AFOSR), the Army Research Office (ARO), the High Performance Computing Modernization Program (HPCM), and the Office of Naval Research (ONR), under the direction of the Director of Defense Research and Engineering (DDR&E).

Congratulations to DeLenna and Brandon.



Research Symposium Series Awards 2012

The *Research Symposium Series* is a department-sponsored forum for graduate students and advanced-level undergraduates to present their research to a general audience.

Congratulations to:

- **1st place presentation** - Mar Vaquero – faculty advisor Prof. Kathleen Howell
- **2nd place presentation** - Steven Shark – faculty advisor Prof. Steven Son
- **3rd place presentation** - Loic Chappaz – faculty advisor Prof. Kathleen Howell
- **Best abstract** - Lucie Poulet – faculty advisor Prof. Carey Mitchell

Zonta International 2012

The Zonta International Amelia Earhart Fellowships were established in 1938 in honor of Amelia Earhart, famed pilot and Zonta club member. The Fellowships are granted annually to women pursuing graduate Ph.D./doctoral degrees in aerospace-related sciences and aerospace-related engineering. The Fellowship of US\$10,000, awarded to 35 Fellows around the globe each year, may be used at any university or college offering accredited post-graduate courses and degrees.

The School of Aeronautics and Astronautics is delighted that three doctoral students have been awarded this Prestigious Fellowship for 2012.



Amanda Chou is a current Ph.D. student in working with Professor Steven Schneider as her advisor. Her research involves the transition in the field of hypersonics. The study of receptivity is the way in which disturbances in the freestream enter the boundary layer and is not well understood at supersonic and hypersonic speeds. Her experimental work involves using the Boeing /Air Force Office of Scientific Research Mach-6 Quiet Tunnel, which is the only hypersonic facility in the world that had optical

access and low noise levels comparable to flight. Amanda's research involves generating a controlled disturbance on instabilities in the boundary layer of a seven-degree half-angle cone and flared cone. The results of her experiments will then be used to refine computational models and assist with hypersonic aircraft design.



Amanda Haapaala is a Ph.D. student working under the guidance of Dr. Kathleen Howell and is developing new trajectory design tools for use in multi-body gravitational environments. In many cases, trajectory design in multi-body regimes is implemented through a trial-and-error process. This process is time-consuming and yields only a subset of the available solutions that meet mission goals. The focus of her research is on producing trajectory design tools that allow the user to combine trajectory segments from various

dynamical models to facilitate the rapid design of long-term trajectory itineraries for spacecraft that transition between various dynamical regimes. Emphasis will be placed on trajectory design in a visual environment to provide an interactive design process that allows the user to generate solutions rapidly. Development of such a tool will not only decrease the time required for trajectory design, but will also reveal the broad range of available solutions and provide increased mission flexibility. Amanda also volunteers as a group leader for Purdue Space Day and Introduce a Girl to Engineering Day.



Mar Vaquero Vaquero is a current Ph.D. student in Astrodynamics and Space Applications with Dr. Kathleen Howell as her advisor. Her field of study is dynamical systems theory for designing spacecraft orbits. The primary challenge is to design a spacecraft trajectory that uses minimum propellant and meets all scientific requirements. She has already proven that it is possible to design trajectories that use minimum fuel and time when shifting from one location in space to another. Her current work focuses on

extending these techniques to three-dimensional analysis primarily involving resonant orbits with Earth, Moon and even Mars. Mar's theoretical analysis incorporates optimization techniques to produce the best possible orbital exchange in terms of fuel consumption and time. Her goal is to extend spacecraft missions by enabling new paths that require no fuel usage. One important aspect of her research is to reproduce, predict and explain the motion of certain celestial bodies such as comets and asteroids. Mar tutors and mentors students in engineering and Spanish and she participates in a wide variety of community service activities.



Mar Vaquero

Best Student Paper at IAA/AAS Conference

Mar Vaquero has received an award for the Best Student Paper in Mission Design and Optimization at the IAA/AAS Conference on the Dynamics and Control of Space Systems, in Porto, Portugal, held March 19-21, 2012.

Mar's paper is entitled "*Design of Transfer Trajectories Between Resonant Orbits in the Restricted Three-Body Problem with Application to the Earth-Moon System.*"

School of Languages and Cultures 2012 Excellence in Teaching Award winner

Mar has been an instructor of Spanish since she started at grad school at Purdue and has been awarded the School of Languages and Cultures 2012 Excellence in Teaching Award.

The diploma states "*In recognition of a sustained record of excellence in teaching and other significant contributions to our students.*" Over 70 instructors from all languages were considered for the award.

Mar is a current Ph.D. student in Astrodynamics and Space Applications with Professor Kathleen Howell as her advisor.

STUDENT *awards*

Students for the Exploration and Development of Space SPRING SPACE FORUM 2012



(L-R) Dr. Garrett Reisman (SpaceX), Rick Hoskin (ATK), Mike Moses (Virgin Galactic), Chris Ferguson (Boeing), Bill Gerstenmaier (NASA), Dolly Singh (SpaceX).

ATK Aerospace Systems, Boeing, Lockheed Martin, NASA, SpaceX and Virgin Galactic were on Purdue's campus on March 29, 2012 to discuss the future of human spaceflight and exploration.

The one-day forum was sponsored by the Purdue University Chapter of Students for the Exploration and Development of Space and the School of Aeronautics and Astronautics.

Purdue SEDS invited a panel of experts from the private and government sectors of the nation's leading commercial aerospace companies to campus for their annual Spring Space Forum. The speakers discussed their plans for human spaceflight and exploration in a forum setting, with panel members from Space Frontier Foundation, Boeing, and faculty and students from AAE. The aim was to get a better understanding of options for human exploration of space.

William Gerstenmaier BSAAE'77; OAE'03; DEA'07 Associate Administrator, Human Exploration and Operations Mission Directorate, is instrumental in making this event possible and SEDS and the School of Aeronautics and Astronautics are extremely grateful to him.

SEDS is an international student organization with the goals of furthering space exploration and educating the public about the history of space travel, as well as its future.

Speakers

Michael Moses
Vice President of Operations
Virgin Galactic

Michael Hawes
Human Space Flight Programs Director
Lockheed Martin Space Systems Company

Rick Hoskin
Director, Advanced Launch System
ATK Aerospace Systems

Chris Ferguson
Crew and Missions Operations Director
Boeing (retired shuttle astronaut)

Garrett Reisman
Senior Mission Assurance Engineer
SpaceX (retired shuttle astronaut)

Panel Members

Will Watson
Executive Director
Space Frontier Foundation

Tim Reith
Shuttle Orbiter Integration Manager
and Deputy Chief Engineer
Boeing

Professor Bill Anderson
*Purdue University School of
Aeronautics and Astronautics*

More information on the forum,
can be found at <https://engineering.purdue.edu/AAE/Academics/StudentOrgs/seds/ssf.html>



Panel Members
(L-R) William Watson (Space Frontier Foundation), Tim Reith (Boeing), and Dr. Bill Anderson (AAE faculty)

6th IEEE International Conference on System-of-Systems Engineering

Ph.D. student **Don Fry** won the Best Paper Award at the *6th IEEE International Conference on System-of-Systems Engineering*, held June 27-30, 2011 in Albuquerque, NM. His paper "Measuring Net-Centricity" was judged the best based on the quality and content of the paper as well as on the presentation Don made at the conference. Don's Ph.D. advisor, **Associate Professor Dan DeLaurentis**, was a co-author on the paper.



Don Fry

2011 International Postgraduate Academic Forum

Ph.D. students **Don Fry** and **Jacob Haderlie** (advisor **Dr. Bill Crossley**) and **Dr. Dan DeLaurentis** were invited by Beihang University in Beijing, China to present at the 2011 International Postgraduate Academic Forum in October, 2011. During the week-long forum, Don and Jacob each presented their ongoing doctoral research as guest lecturers for a large group of Beihang graduate students and faculty. Additionally, Dr. DeLaurentis presented an overview of the past and current research his team has done in the area of System-of-Systems.



Jacob Haderlie



Ph.D. candidate Yi Cao selected as a recipient of a research stipend as part of the Graduate Research Award Program on Public-Sector Aviation Issues

Ph.D. candidate Yi Cao has been selected as a recipient of a research stipend as part of the Graduate Research Award Program on Public-Sector Aviation Issues. The award is sponsored by the Federal Aviation Administration (FAA) and administered by Airport Cooperative Research Program (ACRP) of the Transportation Research Board/National Academies. The award is being presented for successful completion during the upcoming academic year of his research paper on Benefit and Tradeoff Analysis of Continuous Descent Approach in Normal Traffic Conditions. Yi's Ph.D. advisor is Assistant Professor Dr. Dengfeng Sun.

Nominee for Chorafas Foundation Award **Venkat Ayyaswamy**

Venkat Ayyaswamy has been awarded the Ph.D. Dissertation Award and is now the AAE nominee for the Chorafas Foundation Awards. Venkat's faculty advisor is Dr. Alina Alexeenko.

The Chorafas foundation meets in August 2012 and winners are notified in late September.

Venkat Ayyaswamy



STUDENT *awards*



AAE Junior Jim Behmer named as Drum Major

AAE junior Jim Behmer will step into a senior leadership role as drum major for the 'All-American Marching Band' for the 2012-2013 year. Jim is from Elyria, Ohio and is from the alto saxophone section. In addition to leading the band during the 2012 football season, the drum majors will lead it through the streets of Dublin, Ireland, when the band participates in the 2013 St. Patrick's Day Parade. The drum majors were chosen through an extensive series of interviews and tryouts, culminating in a session where they worked directly with the band.



Tony Cofer - 5 Students Who.....

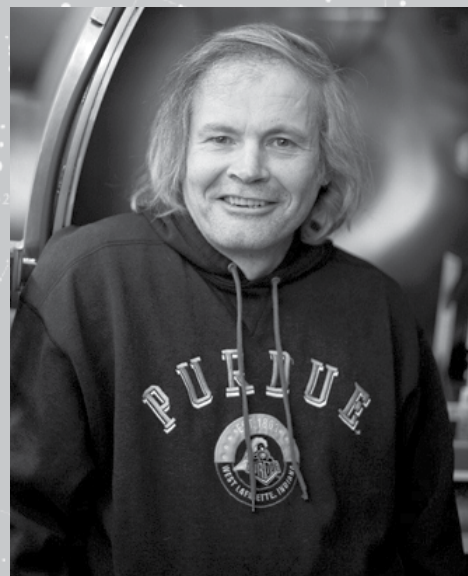
Purdue University highlights students who have a story to tell. Ph. D. student Tony Cofer was highlighted in early spring 2012.

He was a furniture maker for 19 years until the factory was bought out and people were getting laid off. He had the choice to find another factory or to go back to school. He got his master's degree and felt that if he didn't pursue his Ph.D. when he had the opportunity, he would regret it.

Growing up in Orlando, he followed the Gemini and Apollo missions and he was on the school playground when Skylab was launched. He has strong memories of watching the moon landing on a black-and-white TV when he was 7.

Research for his Ph.D. is in microthruster technology which is used to turn satellites. He studies the position and orientation of satellites through the use of microthrusters and the aerodynamics of the propellant inside them. He hopes to graduate in 2013.

The "5 Students Who ..." website also has links to past categories including "5 Students Who are Opportunity Makers," "5 Students Who are Spirit Makers," "5 Students who are Example Makers," "5 Students Who are Music Makers," "5 Students Who are Change Makers" and "5 Students Who are New Venture Makers."



2011 ASME International Mechanical Engineering Congress & Exposition Denver, CO

Tuesday, November 15, 2011

Best Poster Award Recipients:

Second Prize

Author: Sruti Chigullapalli

Title: Modeling of Microstructures Actuation
by the Knudsen Thermal Force

Affiliation: Purdue University

- 1) Sruti Chigullapalli - November 2011, Second Prize in poster competition at ASME IMECE 2011 Micro & Nano Technology Society-Wide Forum



Sruti Chigullapalli

http://nano.asme.org/Student_Spotlight.cfm

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



**ATK 251 Spring 2011
Aircraft Vehicle Design
1st Place - Team A2: Cirque Du Purdue**

Zachary Lapetina
Kenneth Loo
Henry Lorenzen
Joseph Morgan
Andrew Strongrich

Pictured with Dr. Karen Marais



**ATK Spring 2011
Spacecraft Mission Design
1st Place - Team Zombie
Apocalypse Human Rescue Proposal**

Jacob Del Ponte
Allison Shultz
Sydney Taylor
Chintan Visharia
Isaac Whipple

Pictured with Dr. Karen Marais



**ATK 251 Fall 2011
Aircraft Vehicle Design
1st Place - Team 17 - Emperor P251**

John Bartos
Michael Caselton
Alex Cho
Nicholas Crass
Nicholas Eisenhauer
Juanyong Wang

*Pictured with David McGrath Technical Director,
ATK Elkton LLC and Dr. Dan DeLaurentis*

ATK

AeroGRAM

School of Aeronautics & Astronautics

Purdue University

Neil Armstrong Hall of Engineering

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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 & 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:

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



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Editor – **Ann Broughton**
Photos – **Lisa M. Crain**
Jennifer LaGuire
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Dawn Minns, Uppercase Design

Please send inquiries to:
Rita Baines
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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