

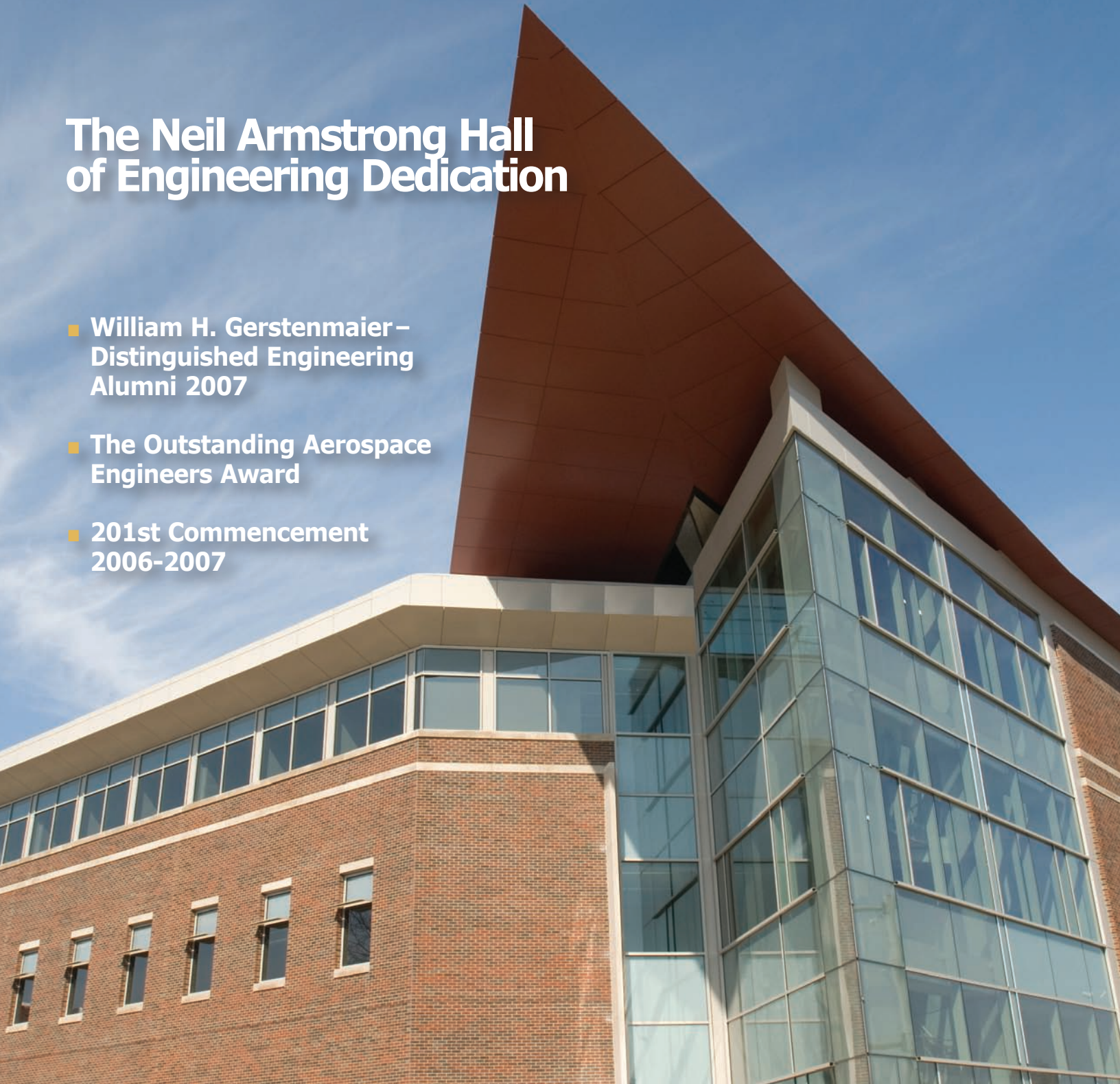
AeroGRAM

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

Covering the 2006-2007 academic year

The Neil Armstrong Hall of Engineering Dedication

- William H. Gerstenmaier –
Distinguished Engineering
Alumni 2007
- The Outstanding Aerospace
Engineers Award
- 201st Commencement
2006-2007



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On the Cover:
Armstrong Hall near completion.

Photo provided by Purdue Marketing Communications, Mark Simons

AAE Headlines

By the time you read this, the School will be in Armstrong Hall. We could not have done it without your support. Thank you very much. Those of you visiting campus will no doubt enjoy touring this world class facility. There will be a dedication on October 27 at 10:00 am.

The 2006-07 academic year was a great one for AAE faculty who conducted research totaling more than \$7.2 million in external expenditures. This represents approximate doubling of the expenditures over five years! Congratulations to the AAE faculty. We are also pleased that Bill Anderson was promoted to Associate Professor with tenure and the Li Qiao has joined us as assistant professor. Also, there were many faculty accomplishments acknowledged by Purdue and peers and colleagues around the world. A few of these are listed below.

- Dominick Andrisani received the School's Bruhn Teaching Award
- Bill Crossley received the Dean A.A. Potter Teaching Award from the College of Engineering
- Dan DeLaurentis received the Sorenson Best Paper Award from the Journal of Air Transportation
- Art Frazho received the School's Gustafson Teaching Award
- Skip Grandt was named Distinguished Visiting Professor at the US Air Force Academy for 2007-08. He also delivered the Keynote Lecture at the Second International Conference on Engineering Failure Analysis in Toronto, Canada
- NASA listed Inseok Hwang's "Multiple-Target Tracking and Identity Management (MTIM)" algorithm as Reportable
- Jim Longuski published "The Seven Secrets of How to Think Like a Rocket Scientist"
- Mario Rotea was recipient of the CT Sun School of Aeronautics and Astronautics Excellence in Research Award and named a Fellow of IEEE
- Tasos Lyrantzis received the College of Engineering Leadership Award
- John Sullivan was named to the NASA Advisory Council
- The ISI Web of Knowledge recognized CT Sun on the "Highly Cited Researcher List" in Materials Science
- Terry Weisshaar received the Department of Defense Outstanding Achievement Award

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

Student interest in the School remained strong with an undergraduate enrollment in Fall 2006 of 401 and a graduate enrollment of 211. A group of eleven students finished 3rd out of 49 teams in AIAA's Design/Build/Fly Competition.

We hope that many of you will take advantage of the newly minted AAE MS degree

with Purdue's Engineering Professional Education Program. The School graduated its 2nd EPE MS in May.

Highlights of the year included the 8th William E. Boeing Distinguished Lecture given by Dr. Michael Griffin, NASA Administrator. The School celebrated the 8th Outstanding Aerospace Engineers Celebration and the College named William H. Gerstenmaier a Distinguished Engineering Alumnus during National Engineers Week. These events along with Homecoming and Gala Week are wonderful times for you to return to campus.

As you probably know, Dr. Martin Jischke completed seven years as Purdue President. The School benefited greatly from his university leadership and strategic planning. Dr. France Córdova became Purdue's 11th President on July 16th. Córdova joins Purdue from the University of California, Riverside, where she served as chancellor since 2002. She previously was vice chancellor for research and a professor of physics at the University of California, Santa Barbara. Before that, she was the first woman and youngest person to hold the position of NASA chief scientist.

Dr. Leah Jamieson is completing her first year as Dean of the College. Her theme is "think impact." The faculty and student accomplishments described herein are but a few examples of the impact of the School.

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



Thomas N. Farris



Neil A. Armstrong presents Jischke with award

THE PURDUE UNIVERSITY COMMUNITY, as well as local and area officials celebrated the conclusion of the Campaign for Purdue and the presidency of Martin C. Jischke during a series of events during May and June. Jischke, the 10th president in the university's 138-year history, retired this summer after seven years as Purdue's president.

He has overseen a number of major projects during the last seven years, including a \$1.5 billion capital campaign and the construction of many new buildings and research facilities around campus. A campus reception was held on May 18 where the event gave the campus community and the public a chance to meet with the Jischkes.

On June 12, 2007 Purdue President Martin C. Jischke was awarded the university's first-ever Neil Armstrong Medal of Excellence by the Neil A. Armstrong BSAE'55; HDR'70 during a dinner for Purdue trustees and other university and government leaders. University leaders also announced progress on scholarships established in honor of Martin and Patty Jischke.

The Neil Armstrong Medal of Excellence was established earlier this year to recognize outstanding contributions to the student experience at Purdue. Recipients will be those who have made a significant impact on the university and its students through the development or improvement of academic programs, increased access or enhancements to the quality of student life. The Armstrong Medal will be given at the trustees' discretion, based on the recommendation of a seven-member committee to be appointed in the future by the university's president. The final committee recommendations will be subject to review and approval by Armstrong prior to being submitted to the president. In future years, the medal will be presented by Armstrong or his designee at the annual University Honors Convocation.

In addition to the Armstrong Medal, Jischke was presented with a Sagamore of the Wabash, the highest honor that the governor of Indiana bestows. It is traditionally awarded to those who have rendered a distinguished service to the state or to the governor. Among those who have received Sagamores have been astronauts, presidents, ambassadors, artists, musicians, politicians and others who have contributed to Hoosier heritage.



Dr. France Córdova 11th president of Purdue University

THE PURDUE BOARD OF TRUSTEES voted on May 7 unanimously to hire **Dr. France A. Córdova** as the 11th president of Purdue University.

Córdova's selection followed a seven-month search for a successor to Martin C. Jischke, who retired on July 31 after serving as Purdue president since Aug. 14, 2000. Córdova's start date at Purdue was August 1, 2007. The 14-member search committee included **Thomas N. Farris**, head of the School of Aeronautics and Astronautics.

Córdova is an internationally recognized astrophysicist who served as chancellor of University of California, Riverside since 2002, coming from the University of California at Santa Barbara where she had been vice chancellor for research and a professor of physics for six years. Before that, she was the youngest person to hold the position of NASA chief scientist, working on projects that included the Hubble Space Telescope.

Córdova said she and Purdue are on the same trajectory as she was inspired by Purdue alumnus Neil Armstrong walking on the moon in 1969. She has now come full circle - to Purdue, the cradle of astronauts and the place that played a major role in launching her quest. "The opportunity to lead one of America's great universities is a wonderful privilege for me. I have tremendous respect for the achievements of Purdue under Martin Jischke's leadership, and I look forward to working with the faculty, staff and students here." Córdova said at the announcement.

The oldest of 12 children, Córdova was born in Paris and spent a few years in Germany, where her father served as the Chief of Missions for CARE, a U.S. relief organization. An avid sports enthusiast, she said she also enjoys running, canoeing, hiking and cross-country skiing. Córdova and her husband, Christian J. Foster has two college-age children.



Dr. France Córdova at the announcement

The Neil A. Armstrong Hall of Engineering

Dedication

★ Team Learning Modules

A key feature of Armstrong Hall is the concept of Team Learning Modules, where students will experience the entire engineering life-cycle.

This concept addresses a common theme emanating from our alumni and industry advisors. Industry is demanding engineers who have traditional technical expertise along with design and build experience, often on industrial scale projects, and who can work in diverse teams.

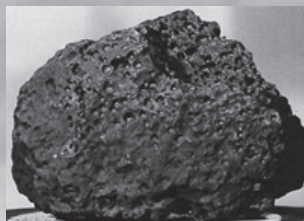
Further, the Team Learning Modules will showcase an exciting new kind of engineering education being piloted now. Instead of the traditional separation of lecture halls and laboratories, Team Learning Modules will be adaptable and link classrooms and other collaboration spaces with design and fabrication areas.

★ Lunar Sample Ceremony - Armstrong Hall

A presentation of lunar sample is scheduled for October 6 at the half time Ohio State game. Through the generosity of Martha Chaffee, former student in Purdue's radio and television program, a rock from the moon will be placed on display in the atrium of Armstrong Hall. Martha Chaffee is the wife of Roger Chaffee (BSAE, '1957) who was one of two Purdue alumni who perished during a simulated test for the Apollo I mission on January 27, 1967. She is acquiring the moon rock through NASA's Ambassadors of Exploration program.

The NASA program allows each astronaut, or his survivor – from NASA's Gemini, Apollo and Mercury programs – the right to donate to the educational

institution of his or her choice a piece of the 842 pounds of moon rocks and soil collected during six lunar missions.



A section of Moon rock

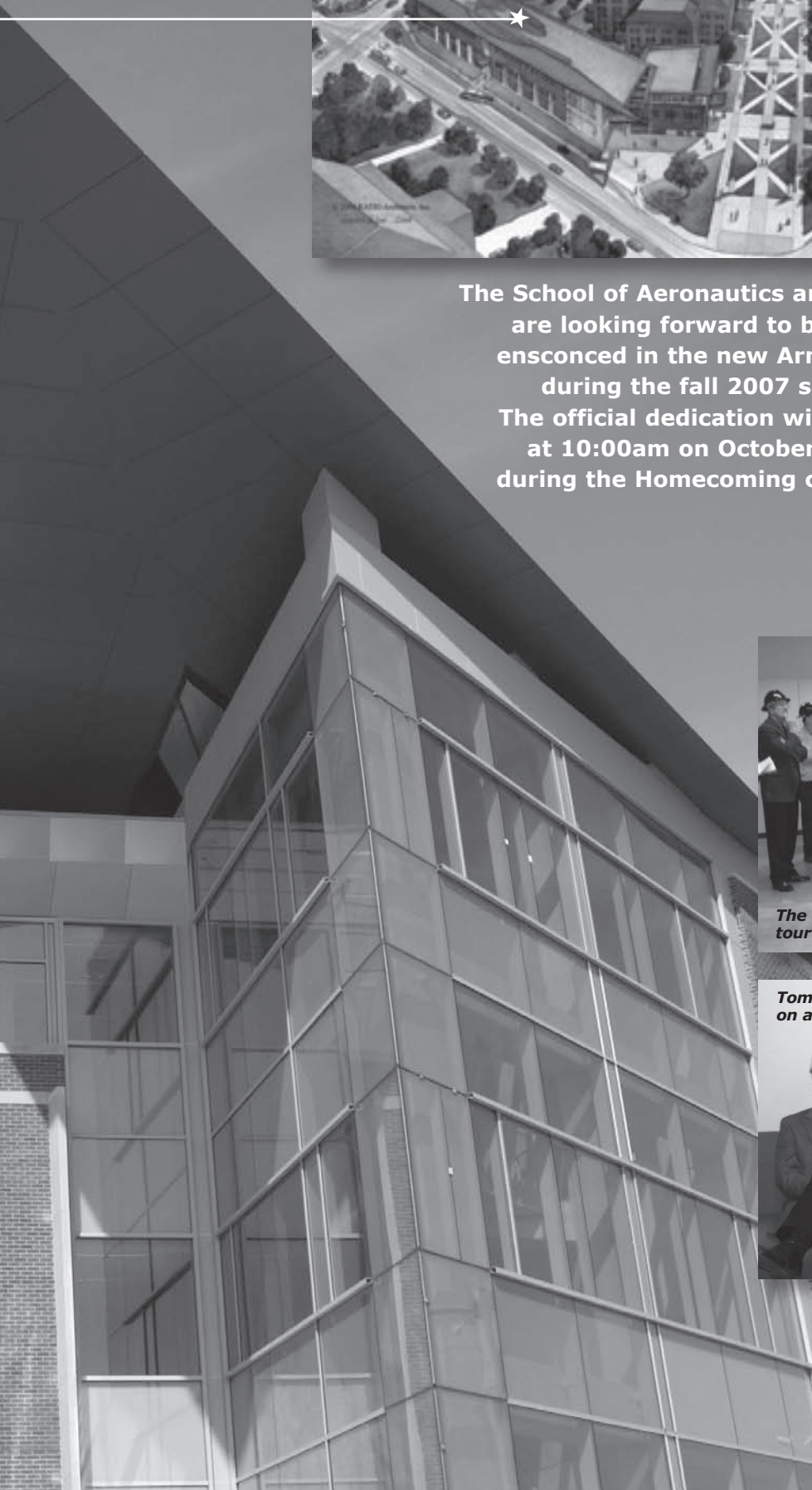
Armstrong Hall near completion

Photo provided by Purdue Marketing Communications, Mark Simons





The School of Aeronautics and Astronautics are looking forward to being firmly ensconced in the new Armstrong Hall during the fall 2007 semester. The official dedication will take place at 10:00am on October 27, 2007 during the Homecoming celebrations.



The Industrial Advisory Council had a "Hard Hat" tour of Armstrong Hall during their spring meeting



Tom Farris; Gus Gustafson and Marc Williams on a spring tour of Armstrong Hall

M4 Sciences Corp win chance to meet with venture capital firms



James Mann, chief executive officer and founder of M4 Sciences Corp., shows off the prototype of a high-precision device that he has developed.
(Purdue News Service photo/David Umberger)

An Indiana company formed from research developed at Purdue University has won the opportunity to make formal presentations for funding from venture capital firms in Silicon Valley. M4 Sciences Corp was picked from several businesses that participated in the Fund Raising Boot Camp last fall at Discovery Park's Burton D. Morgan Center for Entrepreneurship.

James Mann, BSAE'90; MS'94, co-founded M4 Sciences in February 2006 at the Purdue Research Park from Discovery Park research. M4 Sciences has developed a high-performance device that can be added to ultra precision machine tools. The device enables a new technology that utilizes vibration in the machining process, and the company is already using the device for production of nanostructured materials.

The company won the top \$30,000 prize in the Gold Division of the Burton D. Morgan Entrepreneurship Competition on Feb. 22. At that event, the company also received \$5,000 of in-kind services from Ice Miller, a legal and business services firm based in Indianapolis, and \$5,000 from the Indiana Economic Development Corp.

Discovery Park is Purdue's \$350 million hub for interdisciplinary research and is home to 10 primary centers focusing on everything from biosciences and manufacturing to oncological sciences and health-care engineering.

Launching to the Moon, Mars, and Beyond

The AAE Fall 2006 Colloquium Series

**Presented by Daniel L. Dumbacher,
Deputy Director, NASA Exploration Launch Projects
Office Marshall Space Flight Center**

Dan Dumbacher BSME'81 was back on campus on December 7, 2006 when he shared NASA's exploration goals and benefits, and talked about development of the next-generation space launch vehicles during the AAE Fall 2006 Colloquium Series.

Dumbacher is deputy director of the Exploration Launch Office at NASA's Marshall Space Flight Center in Huntsville, AL. Named to the position in September 2005, Mr. Dumbacher is responsible for assisting the director in the overall project management of NASA's new Crew Launch Vehicle, which will transport the Crew Exploration Vehicle into space and deliver uncrewed cargo payloads to space – key to the Vision for Space Exploration. The office is responsible for the overall integration of the launch vehicle system,

and development of a first stage derived from the current space shuttle booster and motor elements and a new upper stage powered by a J-2X main engine.

The U.S. Vision for Space Exploration, announced in 2004, calls on NASA to finish constructing the International Space Station, retire the Space Shuttle, and build the new spacecraft needed to return to the Moon and go on the Mars. In order to reach the Moon and Mars within the planned timeline and also within the allowable budget, NASA is building upon the best of proven space transportation systems. Journeys to the Moon and Mars will require a variety of vehicles, including the Ares I Crew Launch Vehicle, the Ares V Cargo Launch Vehicle, the Orion Crew Exploration Vehicle, and the Lunar Surface Access Module.



Dan Dumbacher with Dr. Dan DeLaurentis and Dr. John Sullivan

Boeing Lecture 2007



NASA'S DIRECTOR MICHAEL GRIFFIN was on campus on March 28, 2007 as the keynote speaker at the 8th William E. Boeing Distinguished Lecture. To express our gratitude to The Boeing

Company for its generosity over the years and to honor the memory of its founder, Purdue University established the William E. Boeing Distinguished Lecture Series, which is administered through the School of Aeronautics & Astronautics. Hosted annually, the first lecture took place on September 30, 1999. The lecture series features an internationally-known speaker from the aerospace or air transportation industry.

Speaking to a packed audience at the Eliza Fowler Hall, Griffin emphasized the history and importance of aerospace education and research.

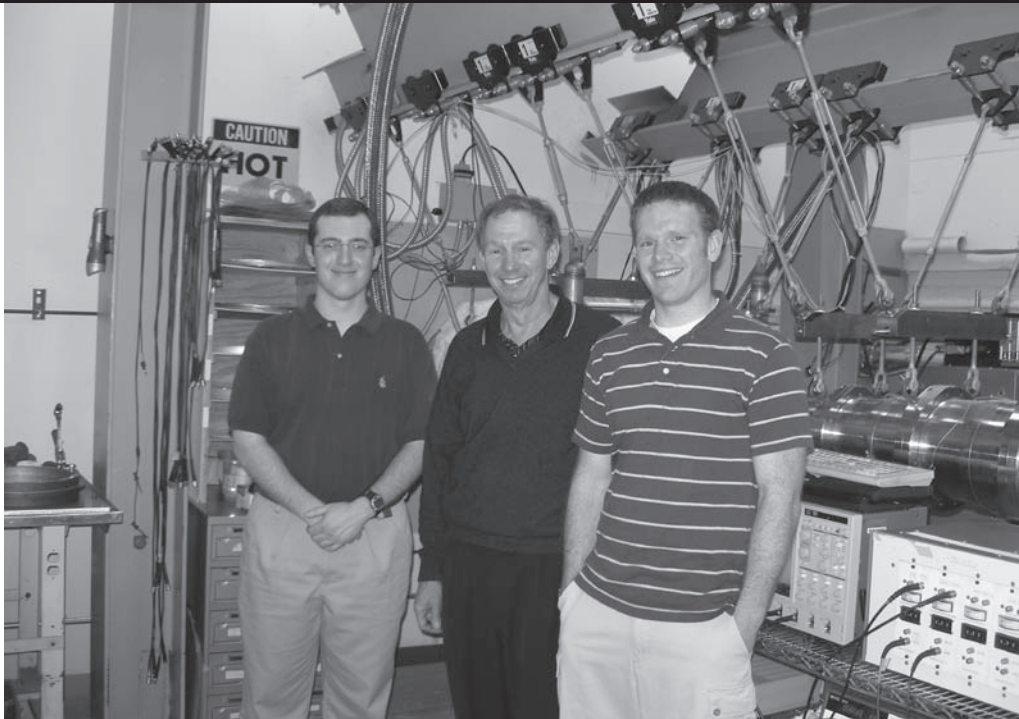
"It is a great honor for Purdue to have someone of Michael Griffin's stature come to the campus to talk with our students and faculty," said Thomas Farris, head of the Purdue School of Aeronautics and Astronautics. "Griffin's talk focused on the role of system engineering in modern society, with a focus on the development of the aerospace disciplines over the past century."

In addition to the lecture, Griffin visited several classes, viewed some student projects and gave his lecture before the event concluded with a reception at the Purdue Memorial Union.

Nominated by President George W. Bush and confirmed by the United States Senate, Michael Griffin began his duties as the 11th Administrator of the National Aeronautics and Space Administration on April 14, 2005. As Administrator, he leads the NASA team and manages its resources to advance the U.S. Vision for Space Exploration.

NASA visit to the Mach-6 Wind Tunnel

While on campus, the NASA Administrator stopped off at the Mach-6 wind tunnel.



(L-R) Tom Juliano, Mike Griffin and Matt Borg. (The photo was taken by Mike Griffin's wife Becky)

Harbaugh

Headlines Purdue Space Day 2006

More than 600 youngsters from three states attended Purdue Fall Space Day on November 11, 2006, where they met astronaut **Gregory Harbaugh BSAE '78** and participated in several space-related activities.

In addition to the students from 104 different schools and from the home-school program, 20 students from Science Bound also attended.

The Purdue Fall Space Day was created in 1996 as an educational outreach activity for students in grades 3 to 8. Participants learn about astronautics and space exploration through hands-on experiences that help to foster an interest in science and engineering. The program is also a professional development program for the students who lead and direct it. Now in its 12th year, the School of Aeronautics and Astronautics co-hosts the event and Purdue Space Day has now become an independent Student Organization.

The Purdue Space Day Advisory Board was created in September 2006; past directors make up the Advisory Board who advises on the growth and direction of the program. (See opposite page).

Harbaugh became an astronaut in 1988, and his flight experience includes several missions: STS-39 *Discovery*, STS-54 *Endeavour*, STS-71 *Atlantis*, and STS-82 *Discovery*. He interacted with attending students throughout Fall Space Day's various activities.





Back Row (L-R): Cindy Mahler; Mitch Epstein; Jen Watson-Perez; George Pollock;
Front Row (L-R): Gina Pieri; Erin Calderwood;
Breanne Wooten and Dorrie Byford
(Not pictured Nicholas Saddah)

Purdue Space Day Advisory Committee

Cindy Mahler (BSAAE'98)

The Boeing Company, NASA Systems,
ISS Systems Integration Engineer

Nicholas Saadah (BSAAE'01)

Johnson Space Center, Houston, TX.

Mitch Epstein (CPT'02)

Pan Am International Flight Academy,
Flight Instructor,

Gina Pieri (BSAAE'03)

Northrop Grumman Mission Systems,
Advanced Mission Dynamics Center

Jennifer Watson-Perez (BSAAE'03)

General Electrics Aviation - Joint Strike
Fighter Performance Engineering

George Pollock (BSAAE'05)

Doctoral Candidate - Purdue University
School of Aeronautics & Astronautics

Erin Calderwood (BSAAE'06)

- Director PFSD 2005
ODF Book Manager - United Space Alliance

Dorrie Byford - Director PFSD 2006 -
Undergraduate Student

Breanne Wooten - Director PFSD 2006

ATK - Alliant Techsystems - Systems Engineer

Greg Harbaugh with 2007 Co-Directors
(L-R) Breanne Wooten and Dorrie Byford



NEWS ABOUT *you*

Class Notes

Jim A. Kaminsky, BSAAE'68; Houston, TX. Associate Program Manager for The Boeing Company, Houston, TX.

Charles R. Coates BSAE'50; Pinedale, WY has now retired.

David H. Clegg BSAE'55; Williamsburg, VA, has retired from USAF and United Parcel Service.

Jim Denneny BSATE'57; retired in 2003 as Business Unit Director for Smiths Aerospace – Rockford Operations and now resides with his wife Nancy HE 1957 in the Puget Sound area. Jim held several senior engineering and business management posts in the fields of fluid, electro-mechanical and electronic systems. He completed post graduate studies in digital electronics, computer sciences and business.

James J. Geiger, BSAE'59; Overland Park, KS has now retired.

Dr. Leonard J. Srnka BSESE'68; Bellaire, TX is Chief Geoscientist with ExxonMobil Upstream Research Company in Houston, TX.

Edward W. Hildebeitel, BSAAE'70; Houston, TX. Engineering Director for Stewart & Stevenson, LLC.

Mark N. Brown, BSAAE'73; was named Chief Operating Officer with MTC Technologies, Inc. on August 14, 2006.

James A. Haas, BSAAE; 77, MS'78, Director of 787 Product Marketing Boeing Commercial Airplanes is responsible for coordinating Boeing's marketing efforts for the 787. He leads the team that demonstrates to airlines and other stakeholders how the 787 Dreamliner best satisfies their needs in terms of technical, operational, and economic issues.

Michael J. Corso BSAAE; '71, Fort Myers, FL, has been named to Florida Trend's Legal elite.

Gail A. Christman Jewell, BSAAE; '72, Houston, TX, retired September 2006 with more than 34 years with Exxon Mobile, Corp.

Terry R. Penney, BSA&ES; '73, Lakewood, CO. Technology Manager, Advances Transportation, for National Renewable Energy Laboratory, Golden, CO.

Chris Finnerty, BSAAE'77, Broadlands, VA. Program Manager for the VH-71 Presidential Helicopter Program for AgustaWestland Bell.

Richard W. Dean BSAAE'81; Springfield, VA, has been promoted to the rank of colonel and is deputy chief of staff, engineer for the 88th Regional Readiness Command at Fort Snelling, MN.

Marc G. Mannella, BSAAE'83; Rose Hill, KS. Director of Flight Operations with Hawker Beechcraft Corporation in Wichita, KS.

Scott W. Levinson, BSAAE'84; Herndon, VA. Chief Engineer with Scitor Corporation, Herndon, VA. Scott is a member of the Technical Staff, Presidential Commission on Intelligence Capabilities Regarding Weapons of Mass Destruction.

Kelvin Murray, BSAAE'84; Indianapolis, IN. Principal Consultant for NivleQ Technology Group LLC. Denver, CO.

Brian B. Polasek, BSAAE'85; White Bear Twp, MN. Project Engineer ACSS with North West Airlines, Minneapolis, MN.

Bryan D. Booze, BSAAE'86; Bloomington, IN. SAP Management Consultant with Intelligence Inc. in Cincinnati, OH.

Gregory J. McNew, BSAAE'88; Niceville, FL, was promoted to Lieutenant Colonel (USAF) in 2005. Assumed command of the 676th Armament Systems Squadron (ARSS) on 31 Jul 2006. Program Manager of the Joint Air-to-Surface Standoff Missile (JASSM) Baseline acquisition squadron.

Armando Capo, BSAAE'91; Carolina, Puerto Rico. Tech Transfer Technologist II with Boivail Laboratories International, SRL, Dorado, Puerto Rico.



(L-R) Nathan Wight, Director of Development School of Aeronautics and Astronautics; Arthur (Art) Strathman, BSAE'48; Phil Waid, BSAE'68; Byron Anderson, BSAE'48 and Engineering Student Ambassador Kyle Ryan, BSAAE'07

Presidents Council - Naples Weekend February 9-13, 2007

Purdue weekend in Naples, Florida, is an annual event that celebrates the generosity of the University's premier giving society, the President's Council. Through the generosity of President's Council members, the University is able to advance the goals of its strategic plan and *The Campaign for Purdue*. The annual weekend in Naples gives the University the opportunity to thank members and celebrate the success their generosity makes possible.

The weekend is also an opportunity for the President's Council Advisory Committee and the Campaign Steering Committee to meet and plan for the future.

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

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

Angela Ward, BSAAE'91;

Temperence, MI, has started her own business, Organized Solutions, a personal assistant service helping people in all area of home and life.

Brett M. Hoffstadt, BSAAE'93;

Media, PA. Project Specialist, V-22 Osprey with The Boeing Company, Ridley Park, PA. Chairman for the AIAA Greater Philadelphia Section. Brett is the proud father of Maya, 3 and Maximilian, born June 25th, 2006.

Jason D. Huycke, BSAAE'95;

Lafayette, IN. Engineering Team Lead with Caterpillar, Inc.

Brent W. Joray, BSAAE'96;

Burleson, TX. Structural Stress Analyst with Vought Aircraft, Dallas, TX. Brent has also worked in Seattle, Wichita, and DFW area and has worked on the 767, 747 Airborne Laser, 767 Tanker, F-35 Lightning II, Deepwater VUAV, 787. Brent and his wife have two daughters, Samantha & Abigail. He is also a volunteer firefighter for the City of Burleson.

Andreas Goetz, MSAAE'96;

Muenchen, System Engineer EADS Astrium Space Transportation.

Dr. Lisa R. Hill, Ph.D'97;

Torrance, CA. Chief Technologist and Program Manager, Emerging Technologies, Northrop Grumman Space Technology, Redondo Beach, CA.

James Leech, BSAAE'97;

Indianapolis, IN. Senior Project Engineer in the Engineering Services Division with AAR Aircraft Services, Indianapolis, IN. Previously had a long stint with ATA Airlines and a shorter time with Raytheon, both in Indianapolis.

John A. Moretti, BSAAE'97;

Hanover Park, IL. Systems Engineer for Northrop Grumman, Rolling Meadows, IL. John is the proud father of daughters Grace and Jessica.

Kim Armstrong MSAAE'03;

Memphis, TN. Regulatory Affairs Specialist for Medtronic, Memphis, TN.

Christina L. Davidescu Gordon;

BSAAE'03, Tucson, AZ. Doctoral student in applied mathematics at the University of Arizona, Tucson.

Rebecca Kacvinsky; BSAAE'03,

Madison AL. Engineer with Dynetics, Inc, Huntsville, AL.

Gerald Lo, BSAAE'03;

Works for Barry Controls Aerospace, in Burbank, CA. BCA designs and manufactures vibration and noise attenuation standard and critical mounts for Aircraft engines and APUs. He is a Project Engineer and working in the relatively new Helicopter Engineering dept, dealing mostly with Elastomeric Bearings and Dampers of Main and Tail Rotor blade to hub connections, for major customers like Bell Sikorsky, Boeing, etc.

Dr. Chul Y. Park, Ph.D.'03;

works for The Boeing Company, Everett, WA.

Jordan A. Taylor, BSAAE'03;

St. Louis, MO. Ph.D. candidate at Washington University.

Eric C. Blattner, BSAAE'04;

Melbourne, FL. Acquisitions Project officer for the USAF at Patrick AFB, FL.

Ryan Irwin, BSAAE'04;

Sherman Oaks, CA. Engine Performance Analyst for Pratt and Whitney, Rocketdyne, Canoga Park, CA.

Jeffrey Robinson, BSAAE'04;

Auburn, WA. Systems Engineer for the Airborne Laser program with The Boeing Company, Seattle, WA. He married in May 2006 to Holly R. Acres (Purdue BA, Psychology, 2005). Member of the American Institute of Aeronautics & Astronautics, the National Defense Industrial Association, and the Royal Aeronautical Society.

Justin D. Tucker, BSAAE'04;

West Haven, CT. Mass Properties Engineer, UTC, Sikorsky Aircraft Company, Stratford, CT.

Robert Anderson BSAAE'05;

Propulsion Engineer for Orbital Sciences, Chandler, AZ.

Brad G. Crosson, BSAAE'05;

Columbus AFB, is a 2nd Lieutenant, USAF and is undertaking Undergraduate Pilot Training.

Brenda Eichel, MSAAE'05;

Torrance, CA. Member of the Technical Staff with The Aerospace Corporation, El Segundo, CA.

Joel A. Falardeau, BSAAE'03,

MSAAE'06; Orland, FL. Aerospace Engineer with Reynolds, Smith and Hills, Merritt Island, FL.

Charles M. Rush III, BSAAE'06;

Tucson, AZ. Autopilot Engineer with Raytheon Missile Systems in Tucson, AZ.

Lionel Tan, BSAAE'06;

San Diego, CA. Design Engineer for Framemax, San Diego, CA.

Tied the Knot

Congratulations to the following happy couples

Tara L. Rishko, MSAAE'92,

and Brian P. Somerday, November 18, 2006.

Steven G. Blaske, BSAAE'04,

and Katherine T. Jennings, S'04, September 30, 2006.

Andrew Myer, BSAAE'04

and Brooke A. Halvorson S'04, October 14, 2006.

Family Additions

Congratulations to all new arrivals

Joseph R. Kline BSAAE'93

and Anne Murphy, daughter Adele Nora, April 30, 3007.

Gregory A. Piatt BSAAE'94

and Ellie Tao, LA'93, a daughter, September 30, 2006.

Marriner H. Merrill MS' 05

and Christine Tuner ME'05, a daughter, September 6, 2006.

In Memoriam

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

Lana M. Couch, BSAE'63,

DEA'99, OAE'99
Mathews, VA, April 22, 2007

Thomas F. Gelder, BSAE'46,

Rocky River, OH, August 10, 2006

Ralph L. Merrill, BSAE'47,

Long Beach, CA, August 26, 2006

George Stalk, BSAE'49,

Springfield, VA, September, 26, 2006

Cecil L. Moore, BSAE'54,

Victorville, CA November 13, 2006

William H. Gerstenmaier

DISTINGUISHED ENGINEERING ALUMNI 2007

NASA's Associate Administrator, **William H. Gerstenmaier (BSAAE'77; OAE'03)** was on campus February 23rd and received the College of Engineering's Distinguished Engineering Alumnus Award for 2007. This award, given out annually to an alumnus of each School within the College of Engineering, recognizes alumni who have significantly contributed to the advancement in their respective fields. Gerstenmaier is also working with University officials to place NASA artifacts in the Neil Armstrong Hall of Engineering's atrium.

As associate administrator for the Space Operations Mission Directorate at NASA Headquarters, Gerstenmaier directs NASA's human exploration of space and also has programmatic oversight for the International Space Station, Space Shuttle, Space Communications and Space Launch Vehicles.

Gerstenmaier began his NASA career in 1977 at the Glenn Research Center in Cleveland performing aeronautical research and was involved with wind tunnel tests on the Space Shuttle. In 1980, he joined the Space Shuttle program as propulsion flight controller, and in 1992 Gerstenmaier got his first managerial assignment for the Orbital Maneuvering Vehicle project at JSC.

While he was on campus, Gerstenmaier also visited Prof. Wayne Chen's AAE 204 class, and a reception with AAE faculty, staff and students in Grissom Hall.

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.



Bill Gerstenmaier and head of school Prof. Tom Farris



Bill Gerstenmaier and Professor Emeriti Gus Gustafson and George Palmer at a reception in Grissom Hall

AAE Alumni inducted to Purdue's ROTC Hall of Fame

Howard E. Bethel, Ph.D., PE COLONEL, U.S. AIR FORCE (RETIRED) BSAE'61

Six alumni were inducted into the Purdue University Reserve Officer's Training Corps Hall of Fame on Saturday April 14, 2007. Included in the inductees was a School of Aeronautics & Astronautics alumnus, **Col. Howard E. Bethel**, Air Force, BSAE '61.

Following graduation, Bethel entered active duty at Purdue to pursue graduate work and obtained his master's degree in engineering. He then was assigned to the Aerospace Research Laboratories at Wright-Patterson Air Force Base in Ohio, where he earned his doctorate and was recognized for his work by the Office of Aerospace Research and the Air Force Association. Bethel's work on the engine of the new F-16 garnered many accolades, and he was promoted to deputy commander for propulsion, where was responsible for the design, development, test and initial operational support of all Air Force engines. After retirement, he joined Universal Technology Corp. in Dayton, Ohio.

The Hall of Fame was established in 1974 to recognize Purdue's Army ROTC graduates who have distinguished themselves through leadership, integrity, courage and discipline. In 1999 the bylaws were amended to include the recognition of distinguished alumni from all Purdue ROTC programs. Service to the nation and community and leadership in the fields of business, government, education or other professional fields are used as the basis for selection. More than 150 former Purdue ROTC students have been inducted.





STS-116 Mission *Magnificent Success*

After traveling 5.3 million miles, the Space Shuttle Discovery's safe landing at Kennedy Space Center at 5:32 p.m. EST on Dec. 22, 2006 marked the successful completion of mission STS-116, one of the most challenging shuttle missions in NASA's history.

There were countless engineering and safety calculations behind the first night launch in four years. During nearly 13 days in orbit, the crew of STS 116, the 20th shuttle flight to the International Space Station — the crew rewired the outpost's power system which will provide permanent power and continued constructing the station by installing the P5 integrated truss segment. They also retracted a stubborn port side P6 solar array.

Discovery also delivered a new station crew member, Sunita Williams, and brought astronaut Thomas Reiter home, who served on the station since arriving aboard Discovery on the STS-121 mission in July 2006. They delivered more than two tons of supplies to the station and brought nearly as much back home. Space Shuttle Discovery made a picture-perfect landing at Kennedy, completing a resoundingly successful mission.

Commander Mark Polansky BSAAE'78; MSAAE'78, thanked everyone at KSC after the landing. "This mission is really a demonstration of how well we can work at NASA when the ground folks, the contractors, the crew, the flight directors, and the control teams, work as a team together toward a common goal. It's always a goal to try and leave someplace in a better shape than it was when you came, and I think we've accomplished that."

**Commander Mark Polansky
BSAAE'78; MSAAE'78**



U.S. News & World Report's Graduate Rankings

The U.S. News & World Report's Graduate Rankings were issued on April 2, 2007 and placed

Purdue Aeronautical and Astronautical engineering 6th in the nation.

These rankings are based solely on assessments by department heads in each specialty area. Department heads in their specialty area rated the other schools that offered a doctoral degree in the specialty. Names of department heads came from the American Society for Engineering Education. Rankings were out of 55 schools with Aerospace/Aeronautical/Astronautical engineering.

"This mission is really a demonstration of how well we can work at NASA when the ground folks, the contractors, the crew, the flight directors, and the control teams, work as a team together toward a common goal. It's always a goal to try and leave someplace in a better shape than it was when you came, and I think we've accomplished that."

HERO *in our Midst*

MEMORIAL DAY 2007 COL. WALKER "BUD" MAHURIN (RET)

Awards

- The Distinguished Service Cross
- Silver Star
- Seven Distinguished Flying Crosses
- The Purple Heart
- Seven Air Medals
- The British Distinguished Flying Cross
- French Croix de Guerre
- Belgian Croix de Guerre

Col. Walker "Bud" Mahurin, BSAE'49 took part as an honorary marshal in the National Memorial Day Parade in Washington, D.C. on Monday May 28, 2007.

The parade drew more than 150,000 spectators. Mahurin is considered to be America's greatest living ace, due in part to his outstanding ability as an air-to-air shot. He represented the 16 million veterans who fought in World War II.

Celebrating the 60th anniversary of the Air Force, the organizers were looking for the greatest heroes in the history of the Air Force, and they could not have found a bigger hero alive than Bud Mahurin.

He is credited with 19.75 aerial victories in the European theater Operation, 1 victory in the South-West Pacific Area and 3.5 Mig-15 jets in Korea, bringing his lifetime total to 24.25 victories in two wars.

Mahurin was born in Fort Wayne, IN and joined the Air Force when he was 20 to gain flying experience.

Three months later, the bombing of Pearl Harbor pushed the U.S. to join Great Britain and the allies in World War II, charting a combat course for Mahurin and his peers. He was sent to London in 1943 to fly P-47s against the Luftwaffe and his group brought down more German aircraft than any other group. He was the first double ace in Europe

and the first recipient of the Silverstar in the famous 56th Fighter Group, the "Wolf Pack", led by Col. Hubert A. "Hub" Zenke.

He was shot down over France on March 27, 1944 and met up with members of the French Resistance who took care of him for a month until he was airlifted out by the British Royal Air Force. Due to his knowledge of the French Resistance, he was not allowed to return to combat in Europe, but embarked for combat in the Pacific Theater in January 1944.

On return to the U.S., Mahurin worked at the Pentagon and then returned to Purdue University where he earned a degree in aeronautical engineering before returning to the Pentagon. At the start of the Korean War, Mahurin wanted to get back to air combat and he got a temporary tour of duty when he flew with the 51st Fighter Wing and scored 3 ½ victories before he was hit by ground fire. Too low to eject, Mahurin crash-landed into the mud of low tide. The plane broke into two parts and then rolled upside down. He broke his left arm and couldn't get out of his gear.

In a matter of minutes he was captured by the Chinese and the North Koreans and was taken to the Manchurian border where he was placed in solitary confinement in a tiny cell. He received brutal treatment, fed only enough to keep him alive, deprived of sleep, cold through lack of clothing, constantly tortured and subjected to brainwashing, a new brutality unknown to the free world at that time.

Mahurin was held for 16 months. He was the highest-ranking Air Force serviceman to be captured at the time, and condemned as a war criminal, but was freed on the last day of the prisoner-of-war exchange program and returned to the U.S.

After the war, he remained active in the Air Force and helped the Air Force, his willingness to discuss brainwashing techniques and physiological pressure applied to American POW's, greatly aided the content of survival courses.

Leaving active duty in 1956, Mahurin entered the aerospace industry and joined the Air Force Reserves, subsequently retiring as a Colonel.

The School of Aeronautics & Astronautics honored Mahurin in 1999 as "Outstanding Aerospace Engineer" and he returned to Purdue University later that same year as one of the schools "Old Masters", a program that gets the almost graduates ready for the new world of business.



Walker "Bud" Mahurin was a WWII flying ace who continued to pilot planes in the Korean War.

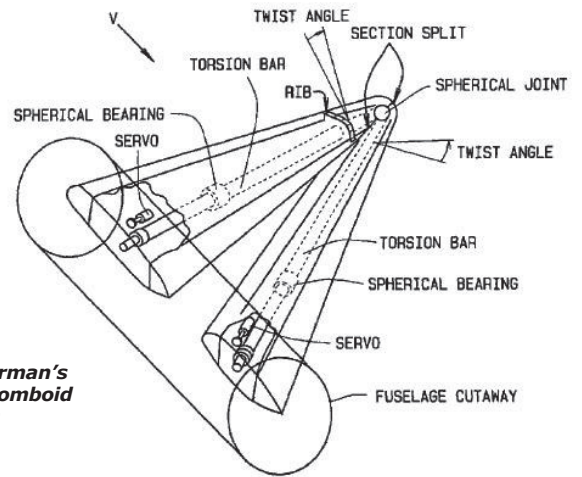


Dr. Marty Ferman Patents Wing Design

Dr. Marty Ferman, Professor of Aerospace and Mechanical Engineering at Parks College of Engineering, Aviation and Technology at Saint Louis University, has received a U.S. patent on his

“Device and Method of Control of Fixed and Variable Geometry Rhomboid Wings.”

With its adaptability to fixed or variable wing geometry, the design allows for an improved aerodynamic body that can eliminate or at least minimize the importance of control surfaces (ailerons and flaps). It uses internal torsion bars to effect changes in the wing twist, which in turn changes the wing air loads, thus controlling the maneuvering and stability of the body.



Dr. Marty Ferman's Patented Rhomboid Wing Design



LANA COUCH passed away on April 22, 2007 at the age of 65. As a student at Purdue, Lana was most interested in experimental research using wind tunnels to generate data on airplanes and rockets. She found Professor Cargnino was very helpful throughout her four years and Professor Gustafson taught the first course she had on boundary layer flow. She found that area to be extremely interesting and went on to concentrate her research of fluid mechanics, in combination with heat transfer.

Lana graduated with a degree in aeronautical engineering in 1963 finding herself very much in the minority in the engineering profession. When she came back to Purdue in 1990 to speak at a Society of Women Engineers banquet, she was amazed at the number of women engineers.

Her goal was to work for NASA, and was employed by NASA, Langley Research Center in Hampton, Va. and NASA Headquarters in Washington, D.C. from 1963 through 2003. She started her career as a wind tunnel test engineer and advanced through a series of increasingly responsible technical and management positions to retire in 2003 as the Associate Director for Business Management at NASA Langley Research Center. She was a member of the Senior Executive Service and a Purdue University Distinguished Engineering Alumnus. She was a Fellow of the American Institute for Aeronautics and Astronautics, and a member of the American Society of Mechanical Engineers. She was the holder of several U. S. and international patents for improvements to wind tunnel design and was the author of many technical papers. She was also the recipient of numerous technical and management awards for her contributions to NASA and to aeronautical sciences including the NASA Exceptional Service Medal, the NASA Exceptional Achievement Medal and the NASA Equal Employment Opportunity Medal.

Lana was strong supporter of Purdue University and the School of Aeronautics & Astronautics. A memorial service was held on April 26, 2007. She is survived by her husband of 42 years, Richard H. Couch of Mathews, VA

Lana M. Couch

BSAE'63; DEA'94; OAE'99

Mathews, Va., formerly of Martinsville

Nov. 27, 1941 – April 22, 2007



Ashley Gordon & Kevin J. Badger

Designs on Love after AAE 251

Coming to Purdue changed **Ashley Gordon's** life in more ways than one. As a freshman in fall 2001, Ashley had no idea that during her sophomore year, she was due to meet her future husband and life partner **Kevin J. Badger**.

Professor Sullivan's sophomore design class AAE 251, provided the backdrop to a friendship that later blossomed into romance. By the time they started dating, they were in different classes, but Kevin helped Ashley by giving her his notes. He also helped her with some aerodynamic classes.

Kevin graduated May 2005 and started work for Lockheed Martin, Palmdale CA. as a Design engineer with JSF.

During her education at Purdue, Ashley did three Coop rotations with G.E. in Cincinnati, OH followed by Internship with Northrop Grumman. Ashley graduated in December 2006 and started work with Northrop Grumman Palmdale, CA. at the end of January 2007 as a B2 Flight test engineer, designs Instrumentation Systems.

Moving to a new apartment in January, they live in Santa Clarita, CA, which is about 35-40 minutes travel time to work. They celebrated their wedding on May 27, 2007 in Galena, Ill. Being in the same industry, this leads to a better understanding of their partner's time commitment and restraints.

The Industrial Advisory Council (IAC)

The Industrial Advisory Council (IAC) serves an important role in the School of Aeronautics & Astronautics. The success of our programs depends on strong support from industry and the Industrial Advisory Council serves as a link between industry and the university.

The IAC meet twice a year in the fall and spring and review a large variety of topics related to our current operations and future goals.

The current members of the IAC are shown below. We sincerely appreciate the efforts of the members of the IAC to take time from their busy schedules to assist us in our programs.

Mr. Frank H. Bauer (BS '79, MS '80)

Chief of Staff - Technical Systems Engineering and Integration
Constellation Program - NASA Goddard Space Flight Center

Mr. Bradley Duane Belcher (BS '82)

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

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

Chief Scientist - Lockheed Corporation

Ms. Andrea M. Chavez (BS '88)

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

Mr. Michael J. Corso (BS '71)

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

Mr. Darryl W. Davis (BS '78)

Vice President/General Manager - Advanced Precision Engagement
& Mobility Systems - Boeing Integrated Defense Systems

Mr. Daniel F. Devitt (BS '75)

Director - Engineering - Vought Aircraft Industries, Inc.

Mr. Michael P. Dreessen (BS '83)

Vice President - Sensors & Electronics - Miltec Missiles & Space

Dr. John W. Gallman (BS '84, MS '86)

Principal Engineer - Research and Advanced Technology
Cessna Aircraft Company

Dr. Carl S. Gran (BS '74, MS '74, PhD '78)

Principal Director - Vehicle Performance Subdivision
The Aerospace Corporation

Mr. Andrew H. Kasowski (BS '72)

Vice President Engineering Product Development
Cessna Aircraft Company

Dr. Andrew M. King (MSME '84, PhD '88)

Director, Mission Assurance - Commercial & Civil Programs
Space & Intelligence Systems - The Boeing Company

Ms. Mary Kriebel (BS '85)

Propulsion Systems Manager - Northrop Grumman

Dr. Donald L. Lamberson (BS CHE '53)

Major General, USAF (Ret.) - Technical Advisor and Consultant

Mr. Thomas L. Maxwell (BS '69)

General Manager - Military Systems and Design Integration
GE Aircraft Engines

Mr. David K. McGrath (BS '83, MS '84)

Area 1-1 Stage 1 Chief Engineer - ATK Launch Systems
ATK Thiokol

Mr. G. Thomas McKane Jr. (BS '66)

Chairman of the Board - A.M. Castle & Co.

Mr. Gary "Bud" Mitchell (BS '60)

(Retired) Vice President - Boeing Integrated Defense Systems

Mr. James P. Renna (BS '86)

Director, Dynamic Systems Engineering - Sikorsky Aircraft

Mr. Charles Robert Saff (BS '71)

Boeing Technical Fellow - Boeing Company

Mr. Randal E. Secor (BS '76)

F35 Deputy Program Manager - JSF
Northrop Grumman Corp.

Dr. Robert L. Strickler (BS '60, MS '62, PhD ME '68)

(IAP Member)
Principal - Sangamon LLC

Dr. Anthony L. Thornton (PhD '92)

Senior Manager, Organization 1530 - Validation & Qualification Sciences
Sandia National Laboratories

Mr. John J. Walsh (BS '82)

President - Ducommun Technologies



Conference organizer AAE grad student Jonathan Braun with Bill Nye

Purdue Pugwash

Purdue Student Pugwash hosted their second annual Midwest regional conference April 6-7, 2007. The theme was "Space and Society: Challenges and Opportunities" The conference addressed many of the issues involving the space program and its connections with society. Topics included weaponization of space, the future of human space exploration, and the search for life in the universe.

The keynote address was given by Bill Nye the Science Guy who spoke to a packed audience at the Loeb Theater.

Purdue Graduate Student Government Soup Kitchen Community Involvement

THE COMMUNITY OUTREACH COMMITTEE of the Purdue Graduate Student Government received a \$500 grant from the Office of Engagement to prepare a meal and give a donation to the Lafayette Urban Ministry.

Jeremy Corpening and Lindsay Millard, both members of the Community Outreach Committee, recruited AAE colleagues Tom Juliano; Brandon Oliver; Yu Matsutomi; Yen Yu; Jamie and Janet Canino; Jim and Tauna Sisco, to assist in purchasing, preparing, and cleaning up after the meal. A warm meal of spaghetti with meat sauce, salad, and homemade chocolate chip cookies was served. A total of 46 of Lafayette's homeless were fed and provided with a bed for the night at the Lafayette Urban Ministry.



Faculty and Staff Group Photo

An entire faculty and staff photo was taken on the stairs of Grissom Hall in November 2006 to mark the last winter in Grissom Hall prior to moving to Armstrong Hall in the fall.

For the names of all the faculty and staff, visit our website at: <https://engineering.purdue.edu/AAE>

Then go to "Our People"
Then to "2006 Faculty and Staff photo"
(Roll the mouse over image for the names of the AAE faculty & staff members in the image.)

Photo by graduate student George Pollock



November 2006



A Purdue degree is worth its weight in gold, but some students have many challenges to ensure that dream becomes a reality.

Gina Covarrubias graduated from Griffiths High School in 1994, and with Purdue Calumet was on her doorstep, she wanted to be part of its excellence. She took part-time classes and worked part-time to pay for her studies. The course was challenging but with excellent accessible faculty and she continued to live at home and travel daily.

After working multiple jobs and juggling school for over three years, Gina felt that it was time to transfer to Aeronautics and Astronautics at the West Lafayette campus and transferred spring 2000 to take a full quota of classes. As a full time student, she found that she was shocked with the amount of work that she needed to do. Although she had lots of homework, Gina found that she had support from her peers which were something new to her after working in isolation and going home at the end of the school day.

Finding it difficult to find accommodation in the middle of the academic year and with financial restraints, she continued to drive the 200 mile round trip from Griffiths; IN. and also continued to work part time to help out financially for her first semester.

She moved into her first apartment in fall 2000 and found it financially tough even with multiple scholarships to help out. Also, after living at home, she also had to adjust to living with room mates. Gina had two very intensive years, but graduated May 2002.

Gina decided to stay on for graduate school and started her masters' degree fall 2002. She had her first internship with ATK, Utah in spring 2003 and as she liked the company and organization, she stayed on with ATK to pursue full time employment and with the support of ATK continued her masters' degree at the University of Utah. She graduated with her masters' degree in spring 2006.

Although she would have preferred to have been a full time student to avoid working to pay for school, she feels that she had gained more experience by getting her education the way she did. Gina says that studying at Purdue was one of the best decisions that she had ever made.

AIAA Design Build Fly Team wins 3rd Place



(L-R) Pritesh Mody; Matt Conrad; Laura Markee; Kyle Noth; Mark Kannen; Aaron Wypyszynski; Paulina Rabczak; Stefan Oechsner; Jonathan Huseman; Professor Sullivan, Liaquat Iqbal; Jessica Schoenbauer (not shown)

THE AIAA DESIGN BUILD FLY TEAM won 3rd place finish at this year's AIAA Design Build Fly Competition in Tucson, AZ. The team demonstrated their design on May 1st in the newly completed Mann Hall. The demonstration covered their year long design process and testing.

The ten member team of Purdue students began working in the fall semester under the direction of Professor John P. Sullivan. This was a great opportunity to see what the AIAA DBF team offers and how to be involved with next years team. Students normally receive 3 credits a semester for their involvement.

The AIAA Design Build Fly project is open to all students and is a great way to get both hands on experience and learn with real world models and applications. The team hopes to continue its success and is looking for students who would be interested in joining the competition team for the 2007/2008 year. Interested students should contact either Prof. Sullivan at sullivan@purdue.edu or Aaron Wypyszynski at awypysz@purdue.edu



Kincheloe Memorial Park Rededication Ceremony - September 23, 2006

Iven Carl Kincheloe, Jr. BSAE'49

“KINCH” JULY 2, 1928
— JULY 26, 1958

Iven Carl Kincheloe, Jr. was an American test pilot and a double ace in the Korean War. Born in Detroit on July 2, 1928, he loved to make and fly model airplanes and had decided upon a career in aeronautics by the time he entered high school. He started flying lessons at age fourteen, soloing as soon as the law permitted, age sixteen. He enrolled in Purdue, where he majored in Aeronautical & Astronautical engineering and joined the ROTC. In the summer of 1948, as an ROTC cadet, he had the chance to meet USAF test pilot Chuck Yeager and sit in the cockpit of the Bell X-1. After the experience, he wrote his parents that he had found what he wanted to do-be a test pilot!

After graduating from Purdue in 1949, he received his commission in the U.S. Air Force. He spent a year as a test pilot flying the F-86E at the newly names Edwards Air force Base, where he continued to make his mark in the tightly knit test pilot fraternity, before being transferred to Korea in September 1951.

During the war, he flew F-80s on 30 missions and F-86s on 101 missions downing five MiG-15s before returning home May 1952. After the war, he again became a test pilot, participating in the testing of F-100 Super Sabre, the F-101 Voodoo, the F-102 Delta Dagger, the F-104 Starfighter, the F-105 Thunderchief, and the F-106 Delta Dart.

In the mid-Fifties, the hottest, most sought after test assignments, the pinnacle of the test pilots' pyramid (as Tom Wolfe called it in *The Right Stuff*) was the X series of rocket-powered test planes. Kincheloe joined the Bell X-2 program and on Sept. 7, 1956, he rode the X-2 to 126,000 feet, becoming the first human ever to fly above 100,000 feet. The public reaction to the feat was immense, although the altitude was about half of what was later considered the edge of space, Kincheloe was immediately hailed as "The first of the spaceman" by a fascinated press and was awarded the Mackay Trophy.



Kincheloe was selected as one of the first three pilots in the next rocket-powered aircraft program, the X-15, and would have been part of the *Man in Space Soonest* project. He was killed in the crash of an F-104A at Edwards AFB on July 26, 1958, and was buried with full military honors at Arlington National Cemetery.

In September 1959, Kincheloe AFB in the Upper Peninsula of Michigan was renamed in his honor. A monument also stands a few miles east of his hometown of Cassopolis, MI.; it is an angular stone slab twelve feet high bearing a silver model of the X-2 pointed skyward.

On Sept. 28, 1963, the seven Mercury Astronauts attended the awards banquet of the Society of Experimental Test Pilots. There, Dorothy Kincheloe presented them with the Iven C. Kincheloe Award, named for her late husband. The Kincheloe Award, "for outstanding professional performance in the conduct of flight testing" was the Big One within the fraternity.

The rededication ceremony of the Kincheloe Memorial Park, Cassopolis, MI. took place on September 23, 2006, with a wreath laying ceremony and aircraft flyovers. Honored guests included Kincheloe's son Iven C. Kincheloe III and his grandson Chris Kincheloe.



Google and US space agency NASA announced an alliance to solve cosmic computing problems and channel information from space around the world via the Internet.

The online search powerhouse signed a Space Agreement Act in a move that formalized a partnership started last year when Google said it would build a massive research center at NASA Ames Research Center on the cusp of Silicon Valley in Northern California.

In what was heralded as the first in a series of joint collaborations, Google and scientists at Ames said they would put the most useful of NASA's information on the Internet. Among data being eyed for the Internet were three-dimensional maps of the moon, weather satellite imagery, and real-time tracking of the International Space Station.

"This agreement between NASA and Google will soon allow every American to experience a virtual flight over the surface of the moon or through the canyons of Mars," NASA

administrator Michael Griffin said in a release in December 2006. "This innovative combination of information technology and space science will make NASA's space exploration work accessible to everyone."

Google already provides some NASA space exploration imagery on the Internet.

NASA has amassed and analyzed more information about Earth and the cosmos than any other entity in human history and wants Google would help deliver it to the world.

Outstanding AEROSPACE ENGINEER AWARDS

PURDUE UNIVERSITY



Six alumni received our Outstanding Aerospace Engineer Award in October 2006. Each recipient has demonstrated career excellence in industry, academia, governmental service, or other endeavors reflecting the value of an aerospace engineering degree.



(L-R) Norman V. Scurria Jr., Jerry W. McElwee, Thomas C. Adamson Jr., Doris "Dodie" Hurt Powers, Steven M. Ehlers, Richard B. Rivir, Head of School, Thomas N. Farris

Honorees included the following:

Thomas Adamson Jr.

(BSAE '49), professor emeritus and chairman (retired), Department of Aerospace Engineering, University of Michigan

Steven Ehlers

(BSAAE '77, MSAAE '78, PhD '91), vice president of product design and development, Callaway Golf Company

Jerry McElwee

(BSES '68, MSIA '70), vice president, joint and adjacent programs, The Boeing Company

Doris "Dodie" Hurt Powers

(BSATR '49), owner/president (retired), Shielding Technologies, Inc.

Richard Rivir

(BSAE '60), scientific advisor, U.S. Air Force Research Laboratory, Propulsion Directorate

Norman Scurria Jr.

(MSASE '80), advanced technology development, DRS TAMSCO



Outstanding Aerospace Engineers Award recipients with past honorees'



(L-R) Jerry W. McElwee and Prof. Emeriti Larry Cargino



(L-R) Alicia Bowman; Jerry McElwee; Helen McElwee & Katherine McElwee



1st row: Jeanne Wilson Vaughan '48 Sc., Betsy Davis Luhman '48 Sc., Doris "Dodie" Hurt Powers, Sandra Hurt 2nd row: Rosemary Lafrance '71 Sc. (Physics), Pierre Lafrance, Stan Hurt



University of Michigan Reunion

AAE faculty who are also alumni of the University of Michigan, with OAE recipient Dr. Thomas C. Adamson Jr. Professor Emeritus and Chairman (retired) Dept of Aerospace Engineering, University of Michigan

(L-R) James Longuski, Ph.D. '79; Thomas C. Adamson Jr; Stephen Heister, BS'81; and Steven Collicott, BS'83



(L-R) Prof. Emeriti George Palmer; Susan Adamson & Pat Palmer



(L-R) Sally & Gus Gustafson Christa Fleck & David Filmer

The C.T. Sun School of Aeronautics and Astronautics Excellence in Research Award

School of Aeronautics faculty member **Dr. Mario A. Rotea** is the 2007 recipient of the *C.T. Sun School of Aeronautics and Astronautics Excellence in Research Award*. He was recognized at the Outstanding Aerospace Engineers Award on October 26, 2006.

L-R
*C. T. Sun; Mario A. Rotea and
Head of School Thomas N. Farris*



AAE Faculty Roster

Aerodynamics

A. Alexeenko

Assistant Professor; Ph.D., Penn State, 2003; computational rarefied gas dynamics, kinetic theory of gases, numerical methods for model kinetic equations, direct simulation Monte Carlo techniques, microscale gas flows, coupled thermal-fluid analysis of microdevices, high-altitude aerothermodynamics, two-phase plume flows.

G. A. Blaisdell

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

S. H. Collicott

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

M. C. Jischke

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

A. S. Lyrintzis

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

S. P. Schneider

Professor; Ph.D., Caltech, 1989. Focuses on hypersonic and supersonic laminar-turbulent transition. Experimental research includes the development of the Boeing/AFOSR Mach-6 Quiet Tunnel and associate instrumentation.

J. P. Sullivan

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

M. H. Williams

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

Aerospace Systems

B. Caldwell (By Courtesy)

Associate Professor of Industrial Engineering; Ph.D., University of California-Davis, 1990; Human factors engineering; Distributed human supervisory control; Team coordination and performance using information technology.

W. A. Crossley

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

D. DeLaurentis

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

I. Hwang

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

J. P. Sullivan

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

T. A. Weisshaar

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

Astrodynamics and Space Applications

D. Filmer

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

J. L. Garrison

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

K. C. Howell

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

J. M. Longuski

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

Dynamics and Control

D. Andrisani

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

M. J. Corless

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

D. DeLaurentis

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

D. Filmer

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

Dr. David Filmer – Amateur Radio Front Cover

Dr. David Filmer made the front cover of the November 2006 edition of Amateur Radio. In the photo, he holds the "spaceframe" and tape-measure antenna for the tiny "CubeSat" satellite his students are building for possible launch in 2008. The satellite will include one main experiment to measure radiation from solar flares plus several smaller experiments seeking a simple but reliable method for determining a satellite's "attitude," which Filmer explains is "Which end is up" in space.

Filmer says all communications with the Purdue satellite will be on amateur radio frequencies and that several of his students have decided to get their ham licenses in order to be able to operate the satellite's ground station (now under construction) after launch. Filmer has been a ham since 1976 and his call sign is W9DF. His main interests are DXing and satellites.

"I always wanted to get involved in building a satellite" says Filmer, "and when the CubeSat program came along....I figured if the kids here want to do that, I'll help direct them. It's kind of exciting.



Cover photo by Larry Mulvehill, WB2ZPI

A. E. Frazho

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

J. L. Garrison

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

I. Hwang

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

M. A. Rotea

Professor; Ph.D., Minnesota, 1990, Dynamic Systems and Controls.

Propulsion

W. Anderson

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

J. Gore (By Courtesy)

Vincent P. Reilly Professor of Mechanical Engineering; Ph.D., The Pennsylvania State University, 1986, combustion, turbulent reacting flows and pollutant reduction, radiation heat transfer, biomedical heat transfer and fluid flows.

S. D. Heister

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

I. Hrbud

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

D. Li (By Courtesy)

Research Assistant Professor of Mechanical Engineering; Ph.D., China Ship Research Institute, 1992; computational fluid mechanics, large scale multidisciplinary parallel computing, magnetohydrodynamics and plasma dynamics, conjugate heat transfer, fluid-structure interaction, scientific visualization.

C. L. Merkle

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

L. Qiao

Assistant Professor; Ph.D., University of Michigan, 2007; Combustion and propulsion (low and high speed), experimental flow dynamics, micro-scale power generation, alternative fuels, fire research, environmental impact of combustion.

J. J. Rusek

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

Structures & Materials

W. Chen

Professor; Ph.D., California Institute of Technology, 1995, Mechanical Response of Solids and Structures under Extreme Conditions, Microstructural Effects on Mechanical Behavior, Fatigue Behavior of Engineering Materials, Experimental Solid and Structural Mechanics.

W. A. Crossley

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

J. F. Doyle

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

T. N. Farris

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

A. F. Grandt

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

P. Imbrie (By Courtesy)

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

H. Kim

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

R. B. Pipes

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

C. T. Sun

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

T. A. Weisshaar

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

AAE Professor named to NASA Advisory Council



NASA Administrator Michael Griffin named nine new members to the NASA Advisory Council in September of 2006, including School of Aeronautics & Astronautics faculty member, **Dr. John P. Sullivan**.

The NASA Advisory Council (The Council) consists of six committees, Aeronautics, Audit and Finance, Exploration, Human Capital, Science, and Space Operations. It is an internal panel that provides advice to NASA administrator Mike Griffin. The advice focuses on the space agency's ongoing operations and plans. Dr. Sullivan's term on the council is for two years.

Council Chairman Harrison H. Schmitt welcomed the new members. Schmitt was NASA's first scientist astronaut to fly in space and explored the moon during the Apollo 17 mission. "These accomplished individuals join some of the most experienced and most capable minds in the country serving on the Council, the primary source of outside assistance to NASA Administrator Mike Griffin in fulfilling NASA's role in national space policy," Schmitt said. Dr. Sullivan was named to the Aeronautics Committee chaired by Mr. Neil A. Armstrong.

Dr. Sullivan served as head of Purdue's School of Aeronautics and Astronautics from 1993-98 and was director of the Aerospace Sciences Laboratory from 1983-95. He has an extensive record of academic publications and possesses industrial and consulting experience with NASA, Boeing Commercial Aircraft Co., the Office of Naval Research and General Electric Company. He is also director of the Center for Advanced Manufacturing in Purdue's Discovery Park. Under his leadership the Center for Advanced Manufacturing has been active throughout the state helping Indiana industry advance in high technology production and products.

Faculty Update

Bruhn Best Teacher Award

Dr. Dominick Andrisani is this year's winner of the Bruhn Award, and is now the School's nominee for the College of Engineering 2008 Dean A. A. Potter Best Teacher Award.



W.A. Gustafson Undergraduate Teaching Award

Congratulations to **Prof. Art Frazho** for winning this year's W.A. Gustafson Teaching Award. The award is for student recognition of teaching activities and voting for this nomination is by all students with junior and senior standing. Art Frazho is now the School's nominee for the Murphy Outstanding Undergraduate Teaching Award 2007.



Faculty Promotions

Dr. William Anderson is promoted to Associate Professor of Aeronautics and Astronautics. Congratulations to Bill on his record of achievement leading to this recognition.



AAE Professor elevated to the grade of IEEE Fellow

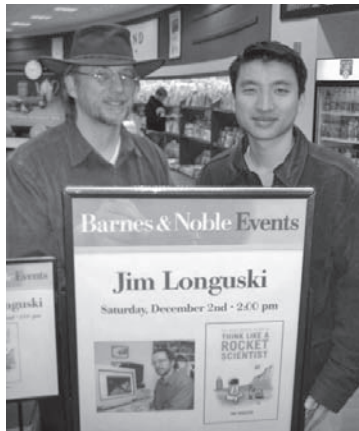
Prof. Rotea has been elevated to the Grade of Fellow in the Institute of Electrical and Electronics Engineers (IEEE) for his contributions to robust and optimal control of multivariable systems." As the organization describes this honor, "The IEEE Grade of Fellow is conferred by the Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest." The School of Aeronautics and Astronautics is proud to congratulate Professor Rotea upon this recognition of his efforts.



Professor shows people how to think like rocket scientists

Dr. James Longuski published his first book, *A Career Survival Guide for Scientists and Engineers* in 2004. After writing the first book, he wanted to write a book that could be used by those who weren't rocket scientists. The result is "*The Seven Secrets of How to Think Like a Rocket Scientist*." The book takes a serious and humorous look at seven steps rocket scientists employ in order to formulate ideas.

To add humor, Longuski employed the skills of **Masataka Okutsu**, a doctoral student, to illustrate the seven steps. "Coming up with cartoons that reflect the content of each chapter and the light-hearted tone of the book was more difficult than I thought," Okutsu said, "People in the research group gave me a lot of good suggestions."



James Longuski and Masataka Okutsu at the book signing on December 2, 2006 (Purdue News Service photo/David Umberger)

AAE Picnic 2006



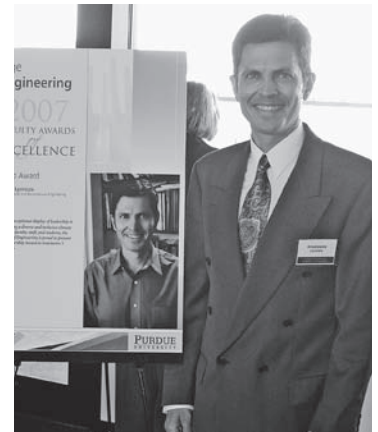
Marc Williams, Martin Corless and Prof. Emeriti George Palmer at the AAE picnic August 2006

College of Engineering 2007 Faculty Awards of Excellence

The Faculty Awards of Excellence was initiated in 2002 to honor outstanding faculty. The Award recognizes, encourages and promotes outstanding contributions of faculty within the College of Engineering at Purdue.

The School of Aeronautics and Astronautics is proud to announce the recipient of the Leadership Award is **Dr. Anastasios S. Lyrintzis** who was nominated by head of school Dr. Thomas N. Farris. The Leadership Award recognizes excellence in promoting a diverse and inclusive climate within the college.

At the Awards banquet held on April 28, 2007, held in the Shively Stadium Club in the Ross Ade Stadium, Dr. Lyrintzis was presented with a plaque from Dr. Leah H. Jamieson, John A. Edwardson Dean of Engineering.



Dean A.A. Potter Award

Also at the same awards ceremony, the prestigious and long-standing Dean A. A. Potter Best of Engineering Award was presented to **Dr. William A. Crossley** for excellence in teaching.

This award is presented to the most outstanding teacher in the entire College of Engineering and honors exemplary undergraduate teaching in all phases of the college's program on the West Lafayette campus.

This brings the total of seven awards for teaching excellence to Bill – the most of any faculty member in the School of Aeronautics & Astronautics.

Congratulations to Bill for a very well deserved award.



Welcome to new faculty member - Dr. Li Qiao Assistant Professor of Aeronautics and Astronautics

The School of Aeronautics and Astronautics welcomes new faculty member Dr. Li Qiao for the 2007-2008 year. She joins the school as Assistant Professor in the propulsion group from the University of Michigan where she completed her Ph.D. in February 2007. She received her Bachelor of Science and Masters degree in Engineering Mechanics, from Tsinghua University in 1999 and 2001 respectively and her Ph.D. in Aerospace Engineering at University of Michigan in 2007. Her research interests include combustion and propulsion (low and high speed), experimental flow dynamics, micro-scale power generation, alternative fuels, fire research, environmental impact of combustion.



"NASA astronaut Sunita Williams performs splendidly in operating Vane Gap-2', part of the Capillary Fluids Experiment (CFE) in the International Space Station. The unique designs of the elliptical cylinders and flat-plate vanes in the two Vane Gap experiments were created by Professor Steven Collicott for the Principal Investigator, Professor Mark Weislogel of Portland State University. These designs have proved reliable and valuable since experiment operations began in September 2006."

AAE Experiment on International Space Station

By James Pullin

The flight of the STS-121 shuttle marked not only the return to service of the space shuttle Discovery after a three year absence, but also a first for **Professor Steven Collicott**, as his **Capillary Flow Experiment** (CFE) was on board for its journey to the International Space Station.

Since March 2003 Prof. Collicott has been working closely with Dr. Mark Weislogel, an associate professor of mechanical engineering at Portland State University, on the design for a handheld experiment which investigates fluid dynamics in a reduced gravity environment. The results will help engineers design more efficient fluid management systems, such as fuel tanks, cooling systems, water recycling

systems, and life-support systems for future space missions.

These designs caught the attention of NASA who has deemed their potential applications so valuable that the experiment was placed on board the shuttle ahead of fierce competition. The experiments were delivered to the ISS on STS-121, where the timing of their execution depended on staffing and the astronauts' workloads, Collicott said.

Dubbed the "lava lamp experiment" by Astronaut Sunita Williams, the fluid is actually silicone oil, floating inside a Plexiglas container. Collicott and Weislogel were able to participate in several operations, as they watched the astronauts conduct the experiment on a live video feed from NASA Glenn's Telescience

Support Center with other scientists and engineers. They were able to make changes to procedures in real time by sending feedback to payload communications.

Collicott and Weislogel will review the videotapes of the experiment operations and spend the next 12 to 18 months analyzing the data before publishing the results in scientific journals. So far, they are pleased with the preliminary findings.

Results from the CFE experiments could also have a more earthbound use. By increasing knowledge of the physics of fluid movement, researchers could improve designs for very small fluid systems, such as electronic cooling loops, mist inhalation devices, fuel cells and "laboratory-on-a-chip" micro-devices among other things.

Royal Australian Air Force



The School of Aeronautics & Astronautics at Purdue has enjoyed a relationship with the Royal Australian Air Force for over twenty years and has led to the following RAAF officers who have obtained masters degrees from the School of Aeronautics and Astronautics.

THIS PROACTIVE PROGRAM was initiated in 1984 when Prof. "Skip" Grandt was Chair of the Graduate student selection board. He received a letter from Air Commodore E. J. Whitehead at the Department of Defence, Canberra, Australia, that was submitted with the graduate application of the first Royal Australian Air Force (RAAF) student – Flight Lieutenant Adrian Morrison.

The goal was to provide RAAF officers with the required technical expertise in the general area of aircraft fatigue technology. This was needed to help formulate structural airworthiness requirements for RAAF aircraft and maintain continuous oversight of structural fatigue problems in the RAAF fleet.

In the letter of March 1984, Air Commodore Whitehead stated that "The Purdue Graduate School has been chosen by RAAF after our Washington-based staff carried out an exhaustive evaluation of all the graduate programmes in fatigue technology offered in the U.S. I am sure you are aware of the work done by Wing Commander Rod Locket in this evaluation. RAAF specialist engineering staff is impressed by the level of technology covered in the Purdue course, and look forward to a continuing association with Purdue in the future." Wing Commander Rod Locket had previously taken a damage tolerance based short course taught by Skip Grandt in the early 1980's through George Washington University.

Air Commodore Whitehead further stated "Upon completion of his Masters Degree, we plan for Flight Lieutenant Morrison to undergo a period of on the job training in the Warner Robins Air Logistics Centre fatigue laboratory to consolidate his training. At the end of this period he will return to Australia and will become a key member of the team which determines structural airworthiness requirements for RAAF aircraft and maintains continuous oversight of structural fatigue problems in the RAAF fleet."

The first eight Purdue/RAAF students (Adrian Morrison through Darren Hahn) did pursue this one year "on the job training" with the USAF at Warner Robins AFB, Georgia. Beginning with Greg Lamb in 2002, however, the Warner Robins AFB experience was discontinued, and the RAAF students (have) returned straight home to Australian assignments following completion of their Purdue degree.

The Purdue assignment is a highly competitive posting within the RAAF. The Australian students have very strong academic backgrounds and typically have 5 years of experience as RAAF engineering officers and usually hold the rank of Flight Lieutenant at the time of their appointment to Purdue. All of the Purdue/RAAF students have pursued a very rigorous plan of graduate study, surpassing the usual Purdue requirements for a Masters degree. They have all, for example, completed ten courses and an M.S. thesis during their 18-month study at Purdue. Whereas the normal MS degree requirement is for ten courses (non-thesis option) or seven courses with the thesis option.

Upon their return to Australia, the Purdue/RAAF alumni have all received assignments to aerospace engineering positions that utilize their structural integrity education obtained at Purdue. Those who have remained on active service have achieved significant levels of responsibility within the RAAF.

For reference, the Royal Australian Air Force military ranks are listed in decreasing order below with the equivalent USAF rank in parentheses:

Air Commodore (Brigadier General),
Group Captain (Colonel),
Wing Commander (Lt. Colonel),
Squadron Leader (Major),
Flight Lieutenant (Captain),
Flying Officer (First Lieutenant),
Pilot Officer (Second Lieutenant).

1985 Adrian Morrison
1987 Kevin Walker
1989 Steve Drury
1991 Terry Saunder
1993 Kim Buhler
1997 Darren Sexton
1998 Stephen Green
2000 Darren Hahn
2002 Greg Lamb
2003 Dave Child
2004 Ben Main
2005 Nic Moyle
2006 Matt Grinham
2007 Richard Kloeden

Purdue Varsity Glee Club

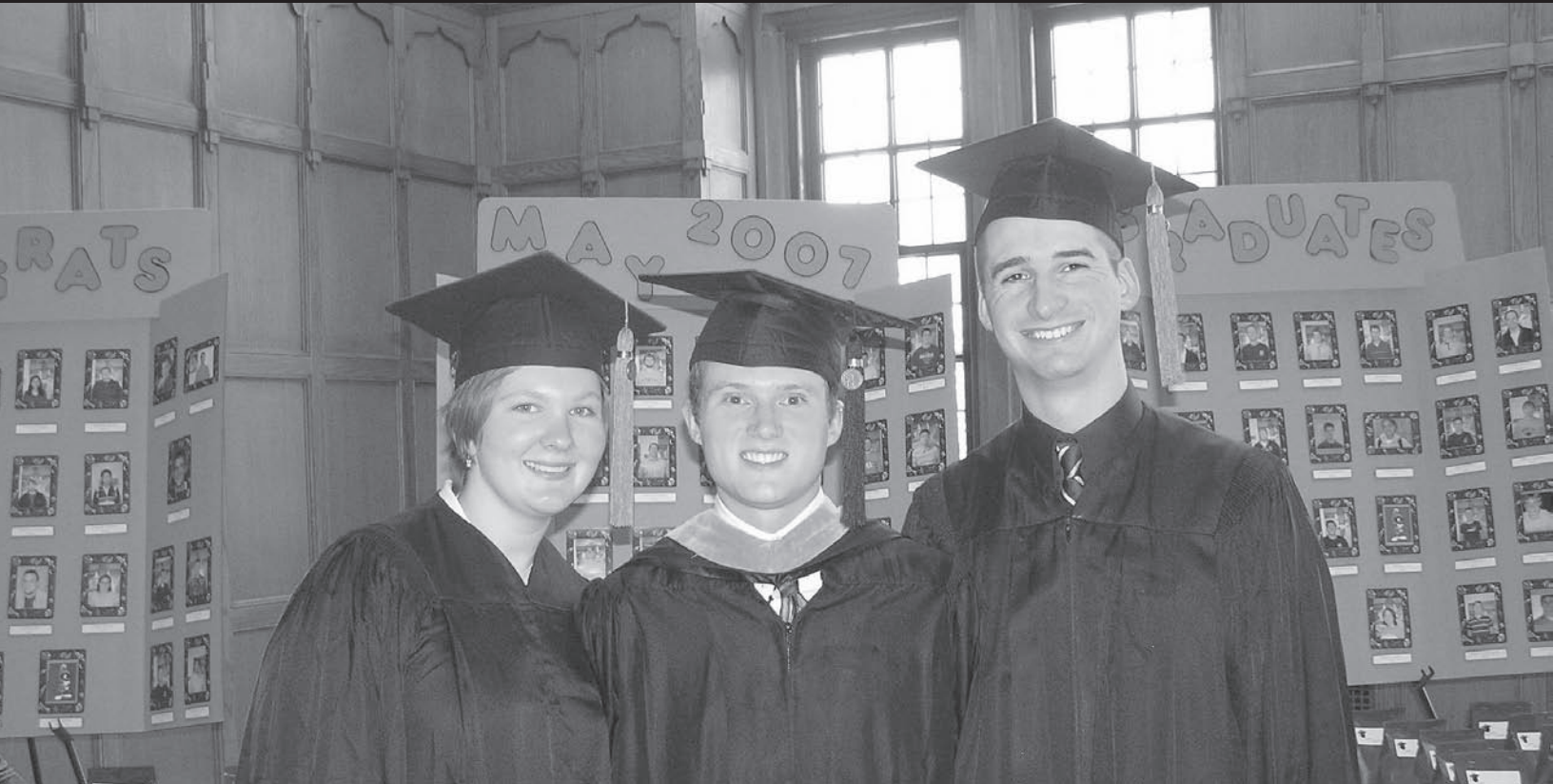


For more than a century, young Purdue men have given their best in performance to audiences at the University, throughout the nation, and around the world. The spirit and success of the Varsity Glee Club also inspired the birth of Purdue Musical Organizations over 65 years ago. Today, as throughout its memorable history, the Glee Club brings recognition and honor to Purdue University.

Each member a soloist and an integral ensemble singer, their concert schedule is more demanding than that of many professional music organizations, yet they are still driven to achieve a level of excellence in academics and service in everything they do.

Graduating AAE senior **T.J. Poliskie** from Jefferson, IN. has been an integral member of the Purdue Varsity Glee Club since his freshman year in 2003. He has traveled extensively with the Glee club and has performed in the British Isles, New York, Florida and throughout the Midwest.

Congratulations to the graduates



201st Commencement

2006-2007

In the final commencement address of his 48-year higher education career, Purdue University President Martin C. Jischke encouraged 2007 graduates to go out and live the American Dream - just as he has. President Martin C. Jischke and his wife, Patty, were also awarded honorary doctorate degrees during commencement ceremonies. Martin Jischke received a doctor of engineering degree from the College of Engineering, and Patty Jischke was awarded a doctor of information literacy degree from Purdue Libraries.

In 2006-07, the school awarded 117 BSAAE degrees and 44 MS degrees and 12 Ph.D. degrees. Congratulations to all of our graduates.

August 2006

B.S. CANDIDATES

Thomas Jennings

M.S. CANDIDATES

Jorge Delado
Joel Falardeau
Manasi Joshi
Megan McDonald
Robert Manning
Anthony Oliver
Ruchir Saheba
Randolph Smith
Jason Wennerberg

PH.D. CANDIDATES

Qida Bing
James Canino
Jungmin Lee
In Kyung Sung

December 2006

B.S. CANDIDATES

Hadi Ali
 Nicholas Andrews
 Dane Batema
 Craig Bittner
 Jonathan Braun
 Ashley Brawner
 Drew Capps
 Matthew Dennis
 Cynthia Fitzgerald
 William Fredericks
 Jonathan Fromm
 Beau Glim
 Ashley Gordon
 Matthew Harvey
 Miles Hatem
 David Helderman
 Norman Herbertz
 Jesse Jones
 Ki-Bom Kim
 Henry Kneitz
 Mark Koch
 Matthew Lossmann
 Andrew Martin
 April Miller
 Jacob Moeller
 Ryan Mulligan
 Christopher Murphy
 Matthew Negilski
 Ravi Patel
 Samantha Pearcy
 Patricia Roman
 Asyn
 Ashley Ruic
 Aaron Schinder
 Kyle Schleucher

Christopher Selby
 Nicholas Sochinski
 John Tapee
 Tara Trafton
 Joseph Trager
 Tung Tran
 Stephanie White

M.S. CANDIDATES

Olaniyi Balogun
 Randall Clark
 James Garner
 Philip Haberen
 En-Pei Han
 Aaron Hauser
 Gregory Heckler
 Gregory Joseph
 Thomas Juliano
 Teng Thuan Khoo
 Daniel Nakaima
 Jay Nightingale
 Masataka Okutsu
 Martin Ozimek
 Daniel Schrik
 Raymond Wright

PH.D. CANDIDATES

Budi Chandra
 Jeessoo Kim
 Damon Landau
 German Porras
 Alonsa
 Masayoshi Shimo

May 2007

B.S. CANDIDATES

Kirk Akaydin
 Brandon Anderson
 Robert Aungst
 Slawomir Boruch
 Brian Boyer
 Christopher Bush
 Kevin Cotter
 Andrew Cottle
 Mark Cunningham
 Sumitero Darsono
 Boyce Dauby
 Matthew Drodofsky
 Sean Duncan
 Keith Fay
 Matthew Fox
 Catherine Frey
 Joel Gentz
 Nicholas Gohn
 James Goppert
 Matthew Gray
 Matthew Guyon
 Lindsay Haack
 Charles Hagenbush
 Richard Hancock
 Elisabeth Hanssens
 Syed Hassan
 Richard Higdon
 John Horst
 Xing Huang
 Rick Hutchings
 Nizam Md Ishal
 Benjamin Jamison
 Stephen Kassab
 Seung-II Kim
 Andrew Kovach

Jonathan Kubiak
 Kevin Tsz-King
 Kwan
 Matthew Lewis
 Trent Lobdell
 Daniel Maguire
 Adrian Mazarella
 Steven McNutt
 Nizam Md Ishak
 Paul Moonjelly
 Jared Odle
 Stefan Oechsner
 Michael Palumbo
 Nathan Payne
 Thomas Poliskie
 Daniel Pothala
 Paulina Rabczak
 Aksahy Raje
 Frederick Ricchio
 Matthew Richter
 Joshua Rodewald
 Brian Roth
 Kyle Ryan
 Matthew Schmitt
 Adeel Soyfoo
 David Stinson
 Jeffrey Studtman
 John Thornton
 Jeffery Tippmann
 Pinak Trivedi
 Kautilya
 Vemulapalli
 Juan Vergara
 Bethany Voss
 Phillip Wagenbach
 Brandon Wampler

Justin Wheeler
 Crystal Wilcox
 Sean Wook
 Breanne Wooten
 Aaron Wypyszynski
 Alexander Zaubi

M.S. CANDIDATES

Avanthi Boopalan
 Nickolas Bruno
 Karla Childress
 Meredith Evans
 Donald Fry
 Matthew Grinham
 Etan Karni
 Kevin Kloster
 Sungyoung Lim
 Michael MacMillan
 Loryn Ohlaug
 George Pollock
 Samuel Rodkey
 John Siehling
 Oleg Sindi
 Melissa Sturridge
 Anwar Torres
 Joseph Uzman
 Emily Wheeler

PH.D. CANDIDATES

Mohammad Ayoubi
 Shyama Kumari
 Renith Richardson



STUDENT *awards*

The Outstanding Senior Award

Each year the Aeronautics Honorary Society, Sigma Gamma Tau, sponsors the outstanding senior award. The nominees are selected by the faculty, and the Outstanding Senior is selected by a student vote. Congratulations to **Breanne Wooten** and **Tim Sisco**.



May 2007 – Breanne Wooten with Head of School Dr. Thomas N. Farris

2007 Magoon Teaching Assistant Award Winners

(L-R)
William Stein;
Geoffrey Wawrzyniak;
Jit-tat Chen;
Dr. Thomas Farris;
Carlos Lana;
Masaki Kakoi;
Rushabh Kothari



Outstanding Graduate Student May 2007 – James Sisco

David and Linda Schimmel Swain Scholarship

Taner Kipfer; George Samuel;
 Timothy Rebold

2006 Purdue Forever Fellowships James Sisco; Damon Landau

The Marc Christopher Weaver Memorial Scholarship

Christine Troy

The Marc Christopher Weaver Memorial Scholarship was established in July 2003 in memory of Marc BSAE '94; MS '95 by his parents Rick and Rita. Mark was sadly killed in a motorcycle-car accident in October 1998.

The scholarship is for an undergraduate aeronautical and astronautical engineering student based on academic merit with a preference on financial need and for students who participate in the cooperative educational program, of which Marc was a part while at Purdue.

Contributions can be made to the Marc C. Weaver Memorial Fund. For more information, contact Nathan Wight, Director of Development on (765) 494-9124 or nwight@purdue.edu

Christine Troy is also the recipient of the 2007 **Astronaut Scholarship Foundation Award**.



Head of School Dr. Thomas N. Farris with Christine Troy and Rick and Rita Weaver

2006 - 2007 John and Patricia Rich Scholarship

Todd Brown; Christopher Carlen;
 Andrew Damon; Matt Conway;
 Ed Londner; Samantha Jo Pearcy;
 Prashant Tatinent

Orrin Arthur Austin Memorial Scholarship

Joel Christopher Gentz

Boeing Undergraduate Scholarship

David Childers; Joshua Elmshaeuser;
 Elizabeth Harkness; Christopher Heath;
 Richard Hinton; Kamwana Mwara;
 Mark Pfeil; Ross Spoonire;
 Nicholas Vazquez; Nicole Wilcox

Filmer Scholarship

Courtney Rogge

2007 Herbert F. Rogers Scholarship

Dean Bryson

2007 Koerner Scholarships

Sophomore: Ian Meginnis,
 Soloman Westerman
Junior: Pritesh Mody, Elisabeth Wahl
Senior: Kyle Ryan, Alan Schwing

Arthur S. Remson Memorial Scholarship

Andrew Krieger; Kevin Cotter;
 Bradley Appel

2007 Elmer F. Bruhn Undergraduate Research Assistantship

Akshay Ashok; Ryan Garwood;
 Yan Chua; Michael Bianco;
 Joseph Moore

Zonta International

Farhana Pervin has won the Zonta International Amelia Earhart Fellowship for 2007-2008. The Zonta International Amelia Earhart Fellowship was established in 1938 and provides funds to women for graduate study in aerospace-related science and engineering.

Earhart was a member of Zonta, a worldwide service organization of business and professional executives dedicated to advancing the status of women worldwide. Zonta has awarded more than \$5.7 million of over 1,122 fellowships to women from 57 countries. Today, Zonta International has over 33,000 members in over 68 countries and continues to support women's efforts to become leaders and explore new fields of study.

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



(L-R) Adam Edmonds, Mintae Kim, Zach Ramey, Todsadol Rungswang, Saad Tanvir, Jitrapat Treetipbut

Fall 2006 First Place Team

Winners of the AAE 251 fall 2006 Class

- | | |
|--------------|---------------------|
| Adam Edmonds | Mintae Kim |
| Zach Ramey | Todsadol Rungswang |
| Saad Tanvir | Jitrapat Treetipbut |

Team Scorpio was selected as the winner of the AAE 251 design competition for this past semester.

The team members are:

- | | |
|---------------------|-------------|
| Pritesh Mody | Kyle Noth |
| Stephanie Morris | Molly Kane |
| Jessica Schoenbauer | Jeff Stuart |

Spring 2006 First Place Team

Grissom Close-Out

In preparation and anticipation of moving to Armstrong Hall, the AAE student organizations organized the "Grissom Close-Out" on Friday April 20, 2006.

The barbeque on the front lawn of Grissom Hall was attended by many AAE students who will be saying goodbye to Gris, either through graduation or by moving to the new building Armstrong Hall of Engineering in fall 2007.

The student organizations that sponsored the event were: SEDS, SGT, AIAA, and AAESAC.



David L. Filmer Scholarship Courtney Rogge

The recipient of the David L. Filmer scholarship for 2007 is Courtney Rogge. The scholarship was established by Prof. David L. Filmer, Adjunct Professor of Aeronautics and Astronautics. The scholarship will last for at least ten years and is for an undergraduate aeronautical and astronautical engineering student based on academic merit

Courtney Rogge and Dr. David Filmer





SEDS Community Outreach

The student organization, Students for the Exploration and Development of Space, (Purdue SEDS) visited Brookston library in the spring where approx 25 students from kindergarten to 5th grade took part in various activities they would need to survive on Mars. The children shot off Straw Rockets (see picture) and they built little Mars habitats out of paper cutouts.

2006 Dimitris N. Chorafas Foundation Award and The College of Engineering Doctoral Dissertation Awards

The Dimitris N. Chorafas Foundation was founded in 1992 at the initiative of Dr. Dimitris N. Chorafas. Each year, the Foundation awards one or more students approximately 20 universities worldwide a prize of \$4,000 to encourage promising young researchers to pursue global careers.

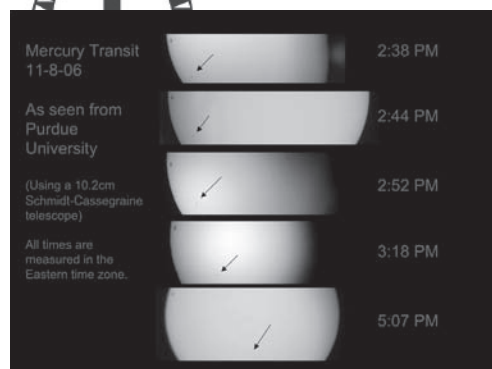
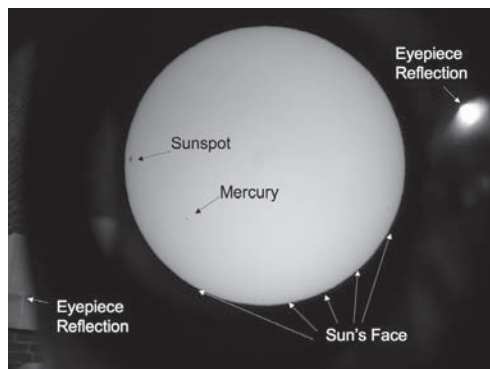
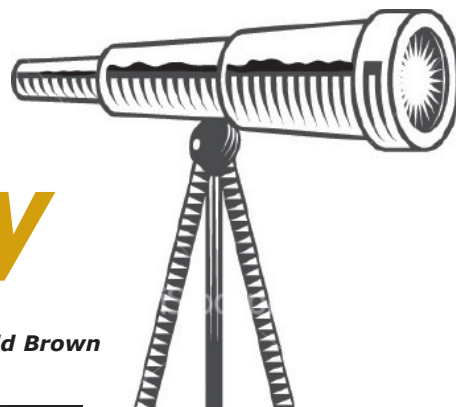
Lindsay Millard from the School of Aeronautics & Astronautics is one of seven finalists from Purdue University and was recognized at a reception on September 14, 2006 for the top doctoral candidates from the College of Engineering.



To be eligible for this prize, the research subject had to cover a number of areas. One aspect of Lindsay's achievement is that her area of research does not come under the listed interests.

Mercury Rising

Todd Brown



The location of Mercury against the Sun over the course of a few hours

THESE PICTURES were taken from outside Grissom Hall in West Lafayette on Nov. 8, 2006 during the Mercury transit. On that day Mercury's orbital path carried it across the face of the sun as seen from Earth. From about 2:00pm until sunset around 5:30PM, Mercury was visible through the telescope as a perfectly circular black dot against the large orange circular face of the Sun.

The scope in the photos is a 10.2 cm Schmidt-Cassegrain telescope, made by Orion telescopes, and it provides 52 x magnification.

Looking at the Sun through the telescope was possible by using a solar filter which is advertised to block 99.999% of incoming light, leaving complete blackness anywhere other than the Sun's face, and only a gentle glow to be observed from the sun itself.

Many of the pictures that were taken that day were taken by holding an average digital camera up to the eyepiece. In this picture (above) you can clearly make out the large round orange/grey shape of the Sun's face and you can also see two other features: Mercury which appears as a tiny dot and a massive sunspot which is considerably larger and just happened to be visible on the day of the transit, and dissipated in the weeks following the transit.

Not only were people who looked through the telescope that day amazed by how small Mercury appeared next to the Sun, but, the more amazing part is that Mercury's actual size is exaggerated in the image because it was actually 35 million miles closer to the Earth than the Sun when it passed in front of the Sun's face. If we could put the two bodies side-by-side Mercury would look even smaller! The transit just reminded all of us exactly how big the Sun actually is.



Graduate students from Prof Kathleen Howell's AAE 632 class gather outside Grissom Hall. (L-R) Lindsay Millard; Chris Patterson; Diane Craig Davis; Chris Ballard; Matt Vavrina; Todd Brown



Astronauts get the glory, but Flight Directors run the show.

Space Shuttle mission STS-123 (1JA) scheduled for February 2008 will have Purdue alum as "Lead Flight Director." **Michael Moses MSAE '95** was named in April 2005 as one of NASA's nine new flight directors. It was the second largest such class ever selected, and brings to 30 the number of active Space Shuttle and International Space Station flight directors.

Mike is one of only 40 flight directors in 40+ years of NASA human spaceflight history. Think of Gene Kranz in the Apollo 13 movie who declared, "**Failure is not an option**" - that's the very job that Mike will have on the shuttle mission STS-122 which is to launch no earlier than Dec this year.

Since Christopher Kraft became the first flight director more than 40 years ago, only 58 men and women have had the privilege to guide U.S. human space flights. Among space engineers, becoming a flight director is a crowning career achievement.

The flight director sees the big picture during a spaceflight, leading a team of flight controllers, support personnel and engineering experts, a flight director has the overall responsibility to manage and carry out Space Shuttle flights and ISS expeditions. Mike was born in Fulda, Germany, but grew up in Rockwood, Pa. He earned a bachelor of science degree in physics from Purdue University in 1989, a master's in space sciences from Florida Institute of Technology in 1991, and a master's in aerospace engineering from Purdue in 1995.

Moses began working at JSC in 1995 as a Rockwell Space Operations Co. employee, and transitioned to United Space Alliance as a flight controller in Mission Operations' Systems Division. He began working for NASA in 1998 as an ascent/entry Propulsion Officer, and was the Propulsion Systems Group lead from 2001 to 2003. Moses transferred to the Shuttle Electrical Systems Group in 2003, and served as group lead until this new assignment. Mike's wife Beth (Stubbings) Moses is also an AAE alum and earned her bachelors' degree in 1992, her masters' in 1994 and she is working towards her PhD. Along with their daughter Sarah, they are both avid alums who meet with our vomit-comet student teams in Houston whenever they can.

The Purdue College of Agriculture Alumni "Fish Fry" took place on February 2, 2007. The featured guests were the real life heroes of Apollo 13: Capt James Lovell, and Gene Kranz, lead Flight Director at Mission Control. So, when Jim Lovell said, "Houston, we have a problem," on Apollo 13, it was Gene Kranz who led the team to identify, solve, and respond to the catastrophic failure of the oxygen tanks. The joint presentation of Kranz and Lovell helped illustrate the core principles of Mission Control.

Houston we have a problem.



(Above) Gene Kranz with AAE senior Breanne Wooten

(Below) Gene Kranz and Jim Lovell give a joint presentation



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Your financial support leaves a lasting impact on Purdue and the School. These gifts help us to achieve our mission in preparing students to be leaders in the aerospace field. Our annual Donor Honor Roll lists our alumni and friends and corporate donors who have given generously of their financial resources to support the School of Aeronautics & Astronautics. Many thanks for your investment in us. Listed are those who have generously donated during the period July 1, 2006 – June 30, 2007. Thank you for your support.

Campaign for Purdue = BIG Success!

History was made here recently at Purdue. The mighty "Campaign for Purdue" that began on July 1, 2000 came to a close just days ago on June 30, 2007. Nearly 700 alumni, faculty, and friends joined to celebrate the University's most successful fundraising campaign ever. **The final amount raised was \$1,702,321,069!!**

The School of Aeronautics & Astronautics also surpassed its original goal of \$15,000,000 and raised nearly \$18,809,663! All of this is because of great people like you! The School is fortunate to have a prestigious reputation today, and we would not be where we are without our alumni and friends. So many of you have been grateful for your rich experience here as student. You are paying it forward for today's and tomorrow's students to attend Purdue and receive the best aeronautical and astronautical engineering degree(s) in the world.

With the thought of the campaign at its end, the School of Aeronautics & Astronautics is committed to offering the best education. To that end, we will continue seeking private support to ensure a bright future. As we move forward, I look forward to keeping you involved with our progress. After all, you helped us get where we are today! THANK YOU!

Hail Purdue!

Best,



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