Aeronautics & Astronautics

Autumn Quarter 2008

Highflight

UNIVERSITY OF WASHINGTON
COLLEGE of ENGINEERING
A Community of Innovators

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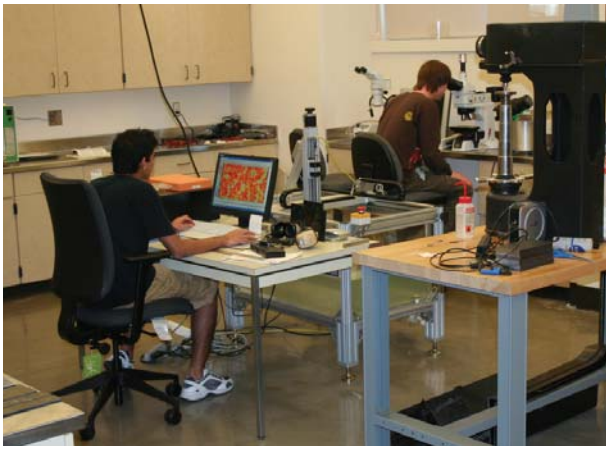
There's No Place Like (a new) Home

Since 1928, more than 3,500 students have considered Guggenheim Hall a home away from home. Two years ago, the Aeronautics and Astronautics faculty, staff and students vacated their "home" while Guggenheim underwent a complete renovation. The exterior of Guggenheim remains essentially unchanged, but the interior was entirely reconfigured for new high-tech classrooms, research and instructional laboratories, student work spaces and offices for faculty, students and staff, greater building accessibility, and an elevator! We're glad to be back in these hallowed halls. Come visit us!

Save the Date!

Monday
October 27

Join us to celebrate the renovation of Guggenheim Hall



Message from the Chair

Adam Bruckner

It has been a very busy couple of years for our department. After a one and one half year absence, we returned to Guggenheim Hall in August 2007, welcomed by a completely reconfigured and beautiful new building interior (as you can see on our cover). We're thrilled with our new offices, classrooms and labs, and will be excited to show them off to you at the Grand Reopening Ceremony on October 27th. Invitations will be forthcoming, and I hope you can join us for the celebration and the building tours.

During the past year we undertook a faculty search, our first in three years. We met with many excellent candidates, and are very pleased that two outstanding new faculty members will be joining us next summer: Antonino Ferrante from California Institute of Technology, in the area of fluids/CFD, and Setthivoine (Sett) You currently at the University of Tokyo, in the area of plasma science and space propulsion. You'll read more about them in future issues of *Highflight.*

We are happy to report that we passed the ABET review of our undergraduate program that took place last December, thanks to the extensive preparation of our faculty and staff; in particular the members of our Undergraduate Committee, and Marlo Anderson, Manager of Undergraduate Programs.

Our faculty has been very active: Professor Kristi Morgansen has been much in the news with her robotic fish (see p.3). Our Redmond Plasma Physics Laboratory achieved a major milestone (see p. 3). Some of our alumni are soaring into outer space (and some are working hard here on Earth to enable them to do so). All of our faculty, staff, students and alumni continue to make us proud, as you'll see throughout these pages.

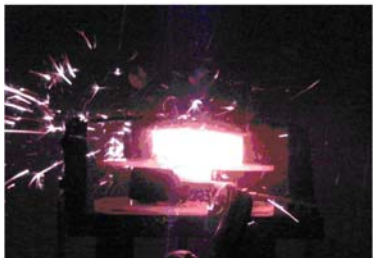
As always, we enjoy hearing from you. Please keep in touch and let us know how you are. And of course, we hope to see you on October 27th at the Guggenheim Grand Reopening.

Adam Bruckner

Lightning Strike Effects on Aircraft Composite Materials

A wide range of carbon-fiber-reinforced polymers (CFRP) materials are finding use in today's aerospace, automotive, and other transportation industries. Besides the direct benefits resulting from the improved mechanical properties, such as increased fuel efficiency and reduced pollutant and acoustic emissions, indirect advantages of a CFRP-intensive airframe are reduced maintenance requirements, and increased passenger comfort due to the superior fatigue- and corrosion-resistance characteristics of these materials. However, the introduction of composites in the primary structure of modern aircraft presents special problems with regards to the lighting strike threat. While metallic structures, such as traditional aluminum airframes, are highly conductive, and thus rapidly dissipate the lightning's high current, CFRP's have very low electrical conductivity, due to the dielectric nature of the polymeric matrix.

Damaged CFRP specimen with fastener following a 50,000 Amp strike

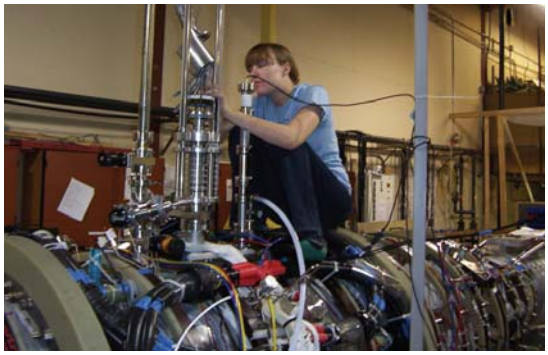


Long-exposure picture of 30,000 Amp strike with incandescent CFRP debris

The composite structures laboratory, under the guidance of **Professor Paolo Feraboli**, has inaugurated a new facility capable of simulating the effects of lightning strike on CFRP. The laboratory's generator will be used to study the fundamental interactions of lightning strikes on carbon fiber composites, and to characterize the loss in structural performance associated with the damage. At peak strike, the generator is capable of generating up to 100,000 Amps released over 50 microseconds. The generator was designed and built by graduate student **Mark Miller** in conjunction with **Professor Tom Mattick** and engineers **Robert Gordon** and **Art Blair**. Undergraduate students **Andrew Southworth**, **Dave Medendorp, Andy Le** and **Parker Davis** were also involved in its construction.

Compact Toroid Upgrade Leads to Improved Results at Redmond Plasma Physics Laboratory

After more than two years of construction, the staff at the Redmond Plasma Physics Laboratory has completed an upgrade of the TCS (Translation, Confinement, and Sustainment) device. TCSU (the "U" stands for upgrade) is a modern fusion energy research facility aimed at researching new possibilities for fusion energy. The main thrust of the TCSU is to form and sustain high temperature compact toroids, known as field reversed configurations (FRC), using rotating magnetic fields (RMF), and to advance basic understanding of FRC stability, transport and confinement under various different RMF current drive schemes. Previous work in TCS has demonstrated the formation and steady-state sustainment of FRCs by RMF. However, the plasma temperature was limited due to strong impurity radiation. TCSU was built with a bakable, ultra-high vacuum chamber to reduce impurities and overall recycling. Spectacular improvements have been obtained during the initial TCSU operation with temperatures ten times that of TCS. The higher temperatures resulted in higher magnetic fields and toroidal currents at similar RMF fields and power inputs, indicating improvements in current drive efficiency and energy confinement time with temperature. Experiments with the RMF configuration may further reduce energy losses. New diagnostics are being installed to provide greater understanding of FRC performance and its response to wall conditioning. Success will lead to a new avenue for attractive, economic fusion energy.



Graduate Student Katherine Velas Working on New TCSU-FRC Research Facility at the Redmond Plasma Physics Laboratory

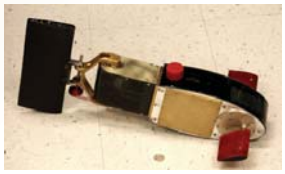
Accolades

James Hermanson and **Uri Shumlak** were promoted to the rank of full professor.

The work of **Professor Paolo Feraboli** was discussed in an article in the July 2007 issue of the publication "High Performance Composites."

Professor Keith Holsapple developed the software featured on the Lunar Science & Exploration Website associated with NASA's activities related to the return to the moon: http://www.lpi.usra.edu/lunar/tools/

Professor Kristi Morgansen's school of "robofish" was much in the news, featured on King 5 News, and in *University Week*. Read more about the robotic fish at: http://uwnews.org/uweek/uweekarticlasp?articleID=42371



Professor Morgansen's Robotic Fish

Professor Mehran Mesbahi was awarded the 2008 College of Engineering Faculty Innovator Teaching Award. Other 2008 A&A Nominees were:

Uy-Loi Ly (Faculty)
Amirreza Rahmani and Greg Rixon (Research Assistant)
Frederick and Carmela Halos (Staff)
2007 Nominees:
Uri Shumlak (Faculty)
Raymond Golingo (Research)
Carmela Halos (Staff)

Professor Mesbahi and Dean O'Donnell

New Staff Members

Art Blair

Art Blair joined A&A last year as a research scientist. Art is well traveled—as a child, he grew up in Yokosuka, Japan, as well as California, Mississippi, and Indiana. He earned his bachelor's degree in electrical engineering from Purdue University and a PhD in physics from the University of Wisconsin.

After graduation, Art worked for Texas Instruments defense groups for 11 years as a

radio frequency design engineer. Most recently, he worked in our own Plasma Dynamics Lab with **Professor John Slough**. Art enjoys computers, electronics, and the TV show Gilligan's Island! Art is an indispensible Jack-of-all-trades here, designing and constructing electrical equipment with high voltage and high current applications. We're happy to have Art in A&A.

Hans Boenish

Hans Boenish, the new program operations manager at the Kirsten Wind Tunnel, grew up in Sequim, Washington and Alaska, so he is excited to return to the Northwest, where he can once again enjoy the variety of activities the Northwest has to offer. Hans, who recently received his degree in aeronautical engineering from Embry-Riddle University, spends his free time biking, skiing, and playing the bass and guitar. While growing up in Alaska, he often

flew in little Cessnas and Pipers, which is when he first fell in love with aeronautics. Hans enjoys math and science, and will be pursuing the Master of Aerospace Engineering degree in our department on a part-time basis. He will bring technical expertise to test problems and improving the accuracy of individual tests. We're pleased to welcome Hans to the Wind Tunnel and to the A&A Department.

In Memoriam

Harold E. "Bud" Froelich, the designer of the famous deep-sea minisub "Alvin," died in May of last year. Bud was a 1946 graduate of our department, did additional studies in engineering until 1949, and then transferred to University of Illinois, where he received his MS in Aeronautics.

Jay Warren Hamilton (BS 62), Lt. Col. USAF, Ret. passed away in November 2006. He attended the University of Washington on a Fairchild Aircraft Scholarship and graduated from A&A in 1962. He later earned a Master of Science in Business Administration from USC. Jay was involved in weapons delivery systems, nuclear safety programs and space systems, including a four-year attachment to NASA.

Bob Larson passed away in December 2007. Bob graduated Magna Cum Laude from the UW A&A in 1949, and received a Master's degree from Cal Tech in 1950. He had a distinguished 33-year career with Boeing, eventually becoming chief of technical staff of the 707-727-737 division. He was also a docent at the Museum of Flight.

A&A Affiliate Professor **John McMasters,** who had a long, distinguished career with Boeing, passed away this February. John was a graduate of the University of Colorado, and in December, he was recognized by them as the Aerospace Engineering Sciences Department's 2008 Distinguished Alumnus, and was also inducted as an AIAA Fellow.

Z. Adam Pietrzyk passed away December 16, 2007. Adam joined the UW in 1974 and was an enormous help in running the AERL 4th floor plasma lab. He was an excellent plasma physicist who could do anything from sophisticated plasma diagnostics to numerical simulation of plasmas.

Donald Gnagi Shaw (BS 35) spent his career at Boeing until his retirement at 62, working on various planes, mainly wing and tail surfaces and later on passenger payload systems culminating with the model 747. Don was a lifetime member of the Boeing Management Association.

Accolades

Bhuvana Srinivasan and **Callie Rosario** were selected as 2008 UW Society of Women Engineers outstanding female engineers.

Genia Vogman was among the first group of recipients of a NASA Aeronautics Scholarship.The recipients were selected from nearly 400 applicants. The award is designed to encourage and foster highly motivated students to pursue and excel in disciplines of aeronautics so that they can work toward solving key challenges facing aviation in the 21st century.

A&A Undergraduate and Husky Crew Member in the News

Senior Lowell Neal was featured in *The Seattle Times* Sports Section in May. Lowell is a member of the UW's Crew. He is tying together his love of the sport with academics and trying to develop a new, more aerodynamic oar, optimizing the propulsive efficiency of the blade. Lowell had conducted previous research in the A&A water tunnel, but was trying to get real world data as well; so he devised a "low-tech" experiment: he threw handfuls of Cap'n Crunch cereal into the Montlake Cut and videotaped their flow so he could compare the results to those of the lab experiment (proving himself to be an inventive researcher!). In addition to Crew, Lowell is a member of the National Ski Patrol. And if it wasn't enough to be a talented athlete and student, Lowell is also an accomplished violinist. This is one engineer who will have plenty of options when he graduates.

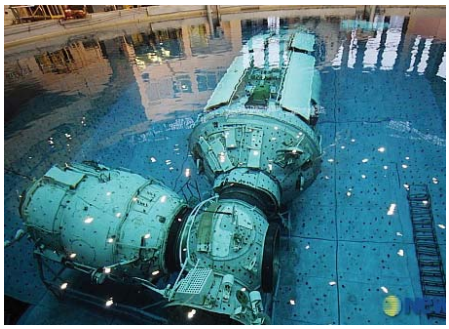
A&A Senior Lowell Neal

A&A Grad Student Among Finalists for First Korean Astronaut

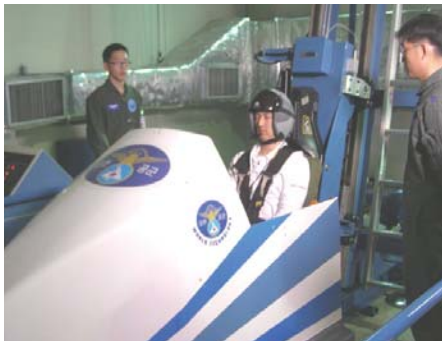
In 2004, South Korea launched a space technology program with the initial goal of putting an astronaut aboard the International Space Station. The work of selecting Korea's first astronaut, to blast off aboard a Russian Soyuz rocket, began in 2006. There were initially 36,000 candidates from among South Korea's best and brightest students and professionals. Youngjun "Jun" Kim, a UW Aeronautics and Astronautics PhD student working with **Professor James Hermanson** on fluid dynamics research, was one of the contenders. Jun said, "I had always dreamed of going to space ever since I was a child, and I love competition. So this challenge that would test both my physical and mental ability was a dream come true."

Jun was flown to Daechun, Korea to undergo a series of rigorous physical and psychological tests. After being checked physically from head-to-toe, he underwent numerous tests such as gravity, tilting, and escape tests. After testing, the group of candidates was culled to 1,200, then 500, then 245, and at last 30. Jun was among this final, exclusive group.

Eventually, a young Korean woman, Yi So-yeon, was selected to be Korea's first astronaut, and she flew her mission in April of this year. However, for Youngjun, it was the experience of a lifetime to be a part of this amazing process, and an honor to be one of a select group of finalists. And who knows, after meeting all of these challenges, he may yet achieve his dream of going to space.



Prototype Soyuz Rocket Underwater to Simulate Outer Space



Jun Undergoing the Escape Test—Being Ejected 32 Feet From a Test Craft

A&A Graduate Student Youngjun "Jun" Kim

2007 & 2008 Student Awards

UNDERGRADUATE

Aeronautics & Astronautics Design Award
Joseph Duncan, Kristin Levengood, John Robbins & Angela Stickle
Joe Auterman, Kyle Hughes, Steve Koszalka, Jolene McCartney, James Stoffel & David Thomas

Clayton and Helen Danner Scholarship
Peter Gangar

Dale and Marjorie Myers Scholarship
Kyle Hughes & Callie Rosario
Sydney Close & Bonnie Wade

Dr. Walter F. Hiltner Memorial Award
Andree Susanto
Callie Rosario

Engineering Alumni Association Scholarship
Parker Davis

George Dragseth Endowed Fund
Shannon Timke

George E. Solomon Prize for Exceptional Performance
Jonathan Tu
Melissa Emery & Andrew Southworth

Lance Erik Fogde Endowed Scholarship
Melissa Emery
Karim Elbourakkadi

Lieutenant Patrick S. Myrick Endowed Memorial Scholarship
Quynh Tran

Major Reuben H. Fleet Scholarship
Janna Wai

Peter S. Christie Endowment for Student Support
David Peters
Namiko Saito

Robert J. Helberg Memorial Fund
Gregory Quetin
Ian Johnson

Robert Max Reynolds Endowed Scholarship
Levi Gable, Jolene McCartney & David Medendorp
Allen Foulstone & Christopher Hansen

Roy and Irene Grossman Scholarship
Jake Lubenow & Joshua Ross

Rudolph H. Reichel Memorial Award
Joni Deboever
Scott Moon

Society of Allied Weight Engineers, Inc.
Andy Le

GRADUATE

Achievement Rewards for College Scientists
Katherine Velas

Alfred and Geraldine Cohn Fellowship
David Peters

Andris Vagners Memorial Fellowship
Airlie Chapman

Clairmont L. Egtvedt Fellowship
Blake Waggoner

George and Anita Snyder Endowed Fellowship
Leslie Renee Lee
Janine Hopmans

George Dragseth Endowed Fund
Francesco Deleo
Matthew Drooyan

Gordon C. Oates Memorial Endowed Fellowship
Thomas Muniz
Arthur Amende

Graduate School Top Scholars Award
Kyle Krogh & Andree Susanto
Jacob Rohrbach & Blake Waggoner

Henry L. Gray Memorial Fellowship
Brian Heemstra

Louis and Katherine Marsh Fellowship
Brian Victor
Kyle Hughes

Max E. Gellert Fellowship
Tyler Cleveland

Percy Halpert Memorial Fellowship
Chad Rider

Ruth C. Hertzberg Endowed Fellowship
Courtney Moore
Eder Sousa

Theodore H. and Marie M. Sarchin Endowed Fellowship
Weidong Song

Washington NASA Space Grant Fellowship
Christopher Lum

Zonta International Amelia Earhart Fellowship
Bhuvana Srinivasan

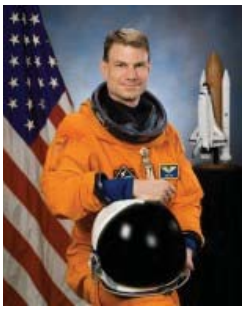
High Flying Alumni

Dominic Antonelli (MS 02) was assigned as the pilot of the Space Shuttle crew for the Discovery's STS-119 Mission targeted for launch Winter 2009.

Jim Dutton (MS 94) was in Mission Control during the launch of Space Shuttle Atlantis (STS-122) in February 2008.

Greg Johnson (BS 77) will pilot the shuttle mission for Hubble repair set for October 2008. Greg will be carrying a UW A&A banner with him on the flight!

Astronaut **Stan Love (MS, PHD 93 Astronomy),** former A&A graduate student, presented several talks at the UW in August discussing his career and NASA's new Lunar Iniative.



...and on the ground

The Phoenix Mars Probe landed on the Red Planet with the help of three A&A Alums: **Rob Grover (MS 98)**, entry, descent, and landing lead at JPL; **Richard Warwick (BS 94, MS 96)**, mission design lead at Lockheed Martin; **Ed Odell (BS 96)**, flight software lead at Lockheed Martin. **Derek Inaba (BS 02)** also participated in the mission as a a test engineer at Lockheed Martin.

One of the instruments aboard the spacecraft, the atmospheric humidity sensor, which is contained in the Thermal and Electrical Conductivity Probe, was tested and calibrated in **Professor Bruckner's** Mars Atmospheric Simulation Facility, in collaboration with Dr. Steve Wood from the Department of Earth and Space Sciences, A&A research scientist **Dr. Carl Knowlen (BS 83, MS 85, PhD 91)** and **Matt Schneider (BS 98, MS 01)**.

Katherine Ready (BS 02) who works at Lockheed Martin, designed tools used by the astronauts on the Hubble Mission.

Marleen Martinez (BS 06) joined the Lockheed Martin team at NASA Johnson Space Center, to develop spacecraft for lunar exploration. She works with the Avionics Systems Engineering Group, and hopes her work will bring her closer to her goal of becoming an astronaut.

As lead of the Robotics Team at the Houston Space Center, **Melanie Miller (BS 89, MS 91)** accepted the equivalent of the "Most Valuable Player" award for Space Shuttle flight 117-13A. The plaque will be added to those representing all missions executed from the Mission Control Room, where plaques from Gemini, Mercury, Apollo, Shuttle, and ISS also adorn the walls.

Melanie Miller and lead flight director Kelly Beck with Houston Space Center on-orbit space station crew in the background via video conference.

Photos by NASA

Meet Two Distinguished Alumni

2007 Robert B. Brown

Robert B. Brown entered the University of Washington School of Engineering in the fall of 1940 at the age of 17. His education was interrupted by service in the military, where he worked in the US Army's Air Transport Command (an experience that gave him a hands-on connection with aircraft that proved valuable throughout his career). After World War II, Brown returned to the UW to finish his undergraduate degree and begin work on his master's degree in aeronautical engineering. Upon graduation in 1948, he joined the Boeing Company as part of the B-47 Aero Unit. In 1950, while working for Boeing, he completed his master's degree thesis, which examined aero-elastic problems on the B-47.

Brown was with the Boeing Company from 1948 to 1990, leaving from 1981 to 1983 to work for Lockheed. At Lockheed, Brown was head of preliminary design for Skunkworks Programs, the lead designer for a B-1 alternative configuration, and the lead designer for the Lockheed Stealth Missile. At Boeing, he was lead designer for the Compass Cope Unmanned Air-Vehicle Design Program, for which he received the national AIAA Design Excellence Award in 1979.

At Boeing, Brown was head of aerodynamics for a series of military aircraft programs, and was chief design engineer for a major configuration change on the Supersonic Transport. He also played significant design roles in many of Boeing's commercial airplane programs. He spent the last seven years of his career at Boeing as corporate vice president for product evaluation. Since his retirement, Brown has continued to be active in airplane design.

Some of Brown's design legacies at Boeing include the one-piece rotating fuselage construction, the low-tail F-22 configuration, the 747 landing gear, and the 767 landing gear. The innovations Brown and his design teams introduced have been foundational for many of Boeing's current aircraft designs.

Brown and his wife, Betty, were married for 60 years and raised five children. He currently shares his time between Hoquiam, Washington and Borrego Spring, California.

2008 James J. Watson

After receiving bachelor's degrees in aeronautical and mechanical engineering in 1949, James Watson had a 37 year career in the aerospace/defense industry, beginning at Northrop Aircraft Company, then at Ryan Aeronautical Company. At the request of a former supervisor, Watson joined the fledgling Avco Research and Advance Development Division as section chief of planning and evaluation in the Flight Technology Department, where he engaged in the development of the re-entry vehicle for the Titan ICBM.

Subsequently, he joined the Space Systems Operation of Aeronutronic Systems, Inc. (later the Aeronutronic Division of Ford Aerospace Corp.). There he was responsible for the test of decoy systems for the Atlas ICBM and interface coordination for the Atlas missile, as well as developing quality control and reliability methodology for the Blue Scout missile. He was then appointed director of product assurance for the Aeronutronic Division.

This was followed by business development for air-to-air missiles, program manager of the Chaparral Air Defense System, program manager of Air-to-Air Missiles, eventually, deputy director of the Missile Systems Operations and then director of the Missile System Operation.

Watson served as vice president and assistant general manager of the Aeronutronic Division of Ford Aerospace Corporation and finally vice president and general manager. He was also appointed chairman of the Board of Ford Aerospace International Corporation. In addition, he served as director of the Western Region Chapter of the Defense Preparedness Association, chairman of the Orange County Council of the American Electronics Association, member of Ford Motor Company's Orange County Community Relations Committee, member of the Association of the US Army and the Air Force Association, and member of the American Defense Preparedness Association. Watson retired in July 1988.

Alumni Updates

Dean Weber (BS 71) retired in 2007 following 21 years as captain for American Airlines. Dean flew the B737, BAe-146, MD-80, B757, B767. After graduation, he spent seven years in the Air Force as a pilot, then three years as a Boeing engineer before beginning his airline career.

Bernard Kutter (BS 87) and **Donna (Smith) Kutter (BS 87)** live in Colorado, and have two children. Bernard is manager of advanced programs for United Launch Alliance. Donna (now an MBA/CPA) works for The Defense Contract Auditing Agency.

Alum Robert Hoyt (MS 92, PhD 94), Tethers Unlimited in Bothell, is featured in a movie on "The Space Sling" a new technology which uses high strength cable to move satellites in space. See Robert's interview: http://www.thefutureschannel.com/dockets/space/space_tether/

Hung Tang (BS 93) is soon to be the new commanding officer of the 7th Space Operations Squadron at Schriever Air Force Base in Colorado, serving as lieutenant colonel. Congratulations to Hung!

Brenda Haven (PhD 96) retired after a 25 year career in the US Air Force and accepted the position of associate professor of Aeronautics - Propulsion at Embry-Riddle Aeronautical University in Prescott, Arizona.

Jon Rue (MS 97) stopped by to show off pictures of his family. He and his wife Darcy are enjoying baby Brendan who was born in September 2007, joining his big sister Audrey. Jon is a systems program manager in Microbiology at the UW.

Rob Grover (MS 98) was married in Oregon in July 2007. Rob and his bride, Meleen, were surrounded by several of the A&A "Mars Nuts" who helped him celebrate his wedding. Pictured along with **Chair Adam Bruckner**, are **Matt Schneider (BS 98, MS 01), Kirsten (Carpenter) Thompson (BS 99)**, and **Mark Hilstad (BS 99)**.

(l-r) Prof. Bruckner, Matt, Meleen, Rob, Kirsten and Mark

Sutthiphong "Spot" Srigrarom (MS 98, PhD 01) visited from Nanyang Technological University in Singapore, where he is an assistant professor.

Jose Valdez (BS 98, MS 03) is working as a planning engineer for Lufthansa Technik Philippines. He reported that during a production inquiry at work he was able to solve a mystery of outboard wing ribs on an aircraft by explaining the basics of aeroelasticity as learned in **Professor Livne's** class!

Bogdan Udrea (PhD 99) is an assistant professor in Aerospace Engineering at Embry Riddle Aeronautical University in Daytona Beach, Florida. Bogdan stopped by the department to say hello, visit friends, and take a look at the "new" building.

Ivan Anckart (MS 00) is strategic business process development manager for Kiala, a tech-logistics company in Belgium.

Matt Craw (BS 00, MS 02) was married a year ago March. He and his wife Katie, a teacher, live in California where Matt is an electronics engineer with the US Air Force. This January 15th, they welcomed baby Nathan.

Warren Jones (MS 01) and his wife and two children visited Seattle this summer. They went to a Mariner's game with **Josh Sementi (MS 01, PhD 05)** and his wife, Shelley. Warren is working at Idaho National Laboratory.

Paul Sieck (MS 01, PhD 06) and his wife had a baby girl, Elanor Naomi, last summer. Paul, who is working at Boeing, brought Elanor to visit recently and she toddled all over Guggenheim!

Christopher Keeler (MS 02) accepted a position as a senior systems engineer with Diversified Energy, in Arizona. Chris and his wife Joelle are enjoying watching baby Garren (now a little more than a year old) grow.

Joshua Leingang (BS 02) is back in Washington, working at Boeing in the 737 Value Stream group within the Propulsion Systems Division. Josh and his wife, Serai, who were married in July 2004, had their first child, Tavian in June 2007.

Katherine Ready (BS 02) is a mechanical engineer at Lockheed Martin in Washington, DC (read about her on p. 7). Katherine and her husband, Devin, are expecting their first child in September.

Zachary Adam (BS 04, MS 06) had an article published in the January 12, 2008 issue of *New Scientist Magazine*. The article postulates that life on Earth began on a radioactive beach.

Levent Coskuner (MS 04) and his wife, Imelda, just had a lovely baby girl, Zoe Isabella Yasemin, on July 19th.

Michael Frostad (BS 04, MS 06) is an ascent entry controls engineer at ERC, Inc., in Houston. Michael stopped by to say hello when he was here over the Thanksgiving holiday.

Justin Hatcher (BS 04, MS 08) and his wife, Lauren, had a beautiful baby boy, Aiden in March. They all came to visit, along with alums **Adi Salehuddin (BS 04, MS 06)** and **Christine Roark (MS 06)**. Justin is an engineer at Boeing.

Albert Hwang (MS 04) stopped by early this year to say hello. Albert was previously at Lockheed Martin Space Systems, but then graduated from the MBA program at Carnegie Mellon University in 2007 and joined Amazon in Reno, Nevada as an inventory control, quality assurance operations manager.

Peter Norgaard (BS04) stopped by the department in August 2007 (visiting our temporary digs at Condon Hall). Peter spent summer 2007 at Lawrence Berkeley National Lab on a DOE CSGF practicum assignment. He also managed to squeeze in a vacation to Japan before returning to Princeton where he is completing his PhD in plasma physics.

Mark Rothnie (BS 04, MS 07) is an engineer at Andrews Space. We enjoyed Mark's company at the Spring Banquet this year.

Kristen (Pilawski) Kowalczyk (BS 04) who is working at Boeing and **Jason (Smith) Kowalczyk (BS 04)** who is at Raytheon in California, stopped by in October and took a tour of Guggenheim. They both love their jobs but miss the rain in Seattle!


Kakani in Dubrovnik

Kakani Young (BS 04) is nearing completion of her PhD in

continued on back cover

Thank you donors

Gifts, cash, and in-kind contributions were received from the following alumni and other friends between 7/1/06 -12/31/07.

Dr. and Ms. Harlow Ahlstrom
Mr. Jaihong Ahn
Dr. and Mrs. Steven R. Allmaras
Mr. and Mrs. Thomas E. Avery
Mr. and Mrs. David E. Babcock
Lt. Col. Frederick C. Bachmann, Ret.
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Mr. J. Christiansen & Ms. S. Kennedy
Prof. & Mrs. Walter H. Christiansen
Mr. Erik C. Christofferson
Dr. & Mrs. Chen Chuck
Mr. Michael Clark
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Alumni Updates

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bioengineering at Caltech. Kakani's research takes her on diving trips all over the world. Her latest trip was to Croatia!

Pierre Luc Chambion (MS 05) and his wife, Becky, had baby Ryan in February 2007. Pierre said that despite the fact that people say newborns don't really smile he's sure Ryan immediately loved his French humor. Pierre is a mechanical engineer at Jamco America, Inc., in Everett.

Chris Dallara (BS 05) stopped by on break from his job last summer at NASA. Chris is pursuing his PhD at Stanford, and was studying for his qualifying exam.

Steve Isley (BS 05) is at Georgia Tech pursuing his master's degree, after serving as operations manager in the Kirsten Wind Tunnel for several years after graduation.

Mark Phariss (MS 05) and his wife, Molly, had a baby girl last year. Mark, who joined Boeing after his Air Force duty was complete, stopped by with baby Ingrid. She was walking all over and seemed to like exploring Guggenheim Hall!

Toru Yamasaki (BS 05) and his wife Maria came to visit the department in November along with alum **Bryan Munro (BS 05)**. In addition to visiting Seattle, they went to Las Vegas. Toru reports that they were in the first row of the Cirque du Soleil show "O" and that he was "forced" to dance with the performers!

Yuya Aoyagi (BS 06) visited from Japan last November. He stopped by to say hello and take a tour of the new building. Yuya is in the operation and management leadership program at GE Engineering Service in Japan.

In February, **Joe Giordano (MS 06)**, who is an acoustics engineer at Boeing, was featured on the show "Survive This" on the Discovery Channel. They wanted to know how much aerodynamics hampered a stuntman's ability to climb back onto an airplane wing once he'd slipped. Joe used a Superman action figure to represent the stuntman. He placed it in the A&A water tunnel and used food coloring to track the flow, thus creating the demonstration.

Philip Weber (BS 06) is a flight test engineer at Boeing. It was nice to see Phil at the Spring Banquet this year.

John Peterson (MS 07) is a senior systems engineer at Raytheon Missile Systems in Tucson. It sounds like he prefers cloudless skies and temperatures in the 90's to Seattle's 'occasional' cloud cover!

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