

# Highflight

## A&A Professor Morgansen and Team Awarded \$7.5 Million to Study Animal Flight and Aerial Vehicles

The Office of Naval Research has awarded a five-year, \$7.5 million grant to a university consortium led by the UW. The goal of the project is to study birds, insects and bats to develop aerial vehicles that can adapt to obstacles and fly in unpredictable conditions -- such as zooming through dense forests or landing on moving objects. "Autonomous vehicles currently fly in open spaces or in very controlled environments," said principal investigator Kristi Morgansen, UW associate professor of aeronautics and astronautics. "We're trying to make them more effective at operating in environments that are really cluttered, that are low-light, or around other moving objects."

Today, the unpowered vehicles that operate in more challenging surroundings are remotely operated by humans. In the future, a flying vehicle operated without human direction could be smaller, lighter and have faster response times, Morgansen said. A truly autonomous vehicle would also be cheaper to operate and easier to deploy quickly in situations such as disaster relief. With the aim of creating that future, the new project will investigate how animals sense their surroundings and use that information to control their movement. The researchers will also look at balancing short-term navigation, such as avoiding obstacles or countering gusts of wind, with long-term goals, such as reaching a final destination.

"Biological organisms solve these problems fairly well, and they can do it within a lot of operating parameters that we just cannot do with engineered systems," Morgansen said. "Biological systems have very simple sensors, but they have lots of them. How do they use them? Is this something we can leverage for engineered systems?"

The multi-institutional team includes researchers at the UW, Boston University, the University of Maryland and the University



*Project leader Kristi Morgansen, a UW associate professor of aeronautics and astronautics, has previously built robotic fish and programmed them to navigate autonomously following the principles used by biological systems.*

of North Carolina at Chapel Hill. Research groups at all four institutions are working at the intersection of engineering and biology. The UW's share of the grant is \$1.96 million.

At the UW, Morgansen has built robotic fish and studied schools of fish to understand how they navigate underwater. Tom Daniel, a UW professor of Biology who uses electronic sensors to learn how moths detect and respond to their surroundings, also is involved in the research.

"Our lab works on how animals use many types of sensor information - both visual and mechanical sensing - and how they meld all that information in their nervous system to enable really fast sensing and control," Daniel said.

At Boston University, research includes studying artificial intelligence and decision-making, as well as learning how bats behave when they are flying among trees. At the University of Maryland, projects include studying how bees adapt to changing wind conditions, and developing sonar sensors for aerial vehicles. At the University of North Carolina at Chapel Hill, biologist Tyson Hedrick, a former postdoctoral researcher

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## Message from the CHAIR



*James Hermanson*

I am very pleased, and honored, to be writing this message as the new chair of Aeronautics & Astronautics. I took the “controls” from former chair Adam Bruckner not quite six months ago and the time has “flown by,” with much happening in the department. I can imagine that Adam’s 12 years went by just as quickly. I hope to serve the department, the college and the UW as capably and as compassionately,

and with as much vision as he did, and I join all of us in thanking him for his many years of hard work and selfless dedication on behalf of the department.

This year is ending on a high note with many significant accomplishments. Our ABET accreditation was renewed and our educational program is as strong as ever. Our faculty continues to do exciting research and make news. Professor Morgansen (see our cover story) is the PI of a MURI grant to study animal-inspired flight—a new look at the birds and the bees! Professor Holsapple is working on a NASA grant to study asteroid deflection. This has also been an active time for raising the department’s profile internationally. Professor Livne traveled to China to present lectures, talk about our senior design program, and to meet with leaders from Commercial Aircraft Corporation of China (COMAC) and with other future research and educational partners. Most recently, Professors Breidenthal and Dabiri joined me on a trip to the United Arab Emirates, where we met with leaders from the aerospace division of Mubdala Development Company and the United Arab Emirates University in Al Ain.

Our students, as always, achieve excellence beyond our expectations: they present papers, spend their summers working in leading industries or studying abroad, and win many prestigious fellowships. Our alumni remain devoted—writing, visiting and amazing us with their personal and professional accomplishments (on land, in the air, and in space), and supporting us in so many ways.

I look forward to serving in the coming years as chair of this great department.

Sincerely,  
Jim Hermanson

## Professor Bruckner Steps Down as Chair After 12 Years of Service

Professor Adam Bruckner stepped down as chair of our department in June after serving in that role for 12 years. Adam joined A&A in 1972 as a post-doctoral research associate and moved up the ranks to full professor in 1988. Early on, he couldn’t imagine that one day he would be the department’s chair—but fortunately for us, he decided to pursue that opportunity, for what turned out to be, as he said, “the 12 most interesting years I’ve spent here.”

Adam has enhanced the department tremendously during his tenure as chair. Under his watch, Guggenheim Hall was remodeled—a major two-year project that involved our relocation before moving back into a greatly improved building. He called it, “exciting.” But Adam is most proud of bringing on eight new faculty members who have brought so much new vigor to the department.

Learning how the department, college and university works was part of the education of being chair—something he says



*Professor Bruckner at his June celebration of 12 years as chair of Aeronautics & Astronautics.*

## Professor Ly Leaves A&A for Position at Boeing

you can't know until you've experienced it. Adam was well educated! The time demands were great, and this, along with other pressures caused him to put aside research and teaching, something he enjoys. He looks forward to resuming these activities, and to have more time for his hobbies (a long list, including ham radio; collecting vacuum tube radios, model trains and model airplane engines; and listening to classical music and reading).

The 12 years went by in a flash Adam says, and he adds, "It was a privilege to be chair and to work with such a wonderful group of faculty, staff and students. It's hard to imagine any place that could be better."

Thank you, Adam for your years of dedication and service to the A&A Department. ■

*"It was a privilege to be chair and to work with such a wonderful group of faculty, staff and students. It's hard to imagine any place that could be better."*

*Adam Brucker*

Professor Uy-Loi Ly left A&A this summer to accept a position at Boeing. He'll be missed by all of us here, but especially by the students. Over the years, the senior graduating class selected him 'Professor of the Year' more than four times, and this year he was also nominated for the College of Engineering Faculty Teaching Innovator award. Professor Ly cared deeply about students and their education, and was always available to help them (even those who weren't in his class!). His dedication and caring are

summarized in the comments of one student: "Hands down the best professor I've had at UW. [He] gives very clear lectures and always makes sure everybody understands before he goes on. He's very dedicated and really cares about his students. Just an incredibly cool professor."

Professor Ly also served as chair of both the graduate and undergraduate committees, helping to shape our curriculum and policies. He contributed greatly to the life and mission of the Department of Aeronautics & Astronautics, and raised the bar for teaching excellence. We wish him all the best in his new position. ■



*Professor Ly won several teaching awards during his tenure in A&A.*

## UW A&A Distinguished Alumnus 2010: Dennis Muilenburg

This year's Distinguished Alumnus is Dennis Muilenburg (MS 90), president and chief executive officer of Boeing Defense, Space & Security and member of their Executive Council. Dennis joined Boeing in 1985 and has held a progression of program management and engineering positions on a broad range of large-scale programs, including the 747 Airborne Laser, National Aerospace Plane, High Speed Civil Transport, Condor reconnaissance aircraft, and a number of proprietary programs.

Dennis was director for the Boeing Joint Strike Fighter (JSF) program, and is co-holder of the patent on the Boeing JSF design concept. He then went on to become vice president and general manager of the Boeing Combat Systems division and program manager for Future Combat Systems (FCS). Prior to his current position, he was president of Global Services & Support, an \$8 billion business providing global after-delivery support for military platforms and systems.

Dennis is an Associate Fellow of the American Institute of Aeronautics and Astronautics (AIAA) and a Fellow of the Royal Aeronautical Society. We're proud to have Dennis Muilenburg among our distinguished alumni.





## Professor Helps Lamborghini Unveil the Sesto Elemento

The UW A&A Automobili Lamborghini Advanced Composite Structures Laboratory (ACSL) developed the technology for Lamborghini's new Sesto Elemento, which was unveiled at the Paris Auto Show on October 1st. The demonstration vehicle, which is not intended for sale, features many innovative carbon fiber technologies never before used in the automotive industry. Boasting an extremely lightweight construction, the Sesto Elemento has an overall curb weight of just 999 kilograms (2,202 lb). The reduction in weight improves the power-to-weight ratio from 2.50 kg/hp to 1.75 kg/hp, thus accelerating the vehicle 0-60 mph in only 2.5 seconds instead of 3.4 seconds, while at the same time reducing emissions.

The ACSL was involved with the initial sub-scale prototyping and supplied Lamborghini with the first-ever all-composite control arms of the wishbone suspensions. The lab team was responsible for the design, analysis and manufacturing of all eight control arms (front, rear, lower and upper), which they redesigned from the baseline forged aluminum construction of the

*Professor Feraboli hosts distinguished guests at a UW Lamborghini lab event in 2010.*



*The Sesto Elemento, photo courtesy of Car & Driver.*

Gallardo Superleggera by using the new forged composite technology. The Sesto Elemento (named as a tribute to carbon, the sixth element in the periodic table) is a unique demonstration of the expertise of Automobili Lamborghini in the area of carbon fiber technology, which makes Lamborghini the center of excellence for this technology.

The Automobili Lamborghini laboratory, under the direction of Assistant Professor Paolo Feraboli, was inaugurated in October 2009. Doctoral students Francesco Deleo, Federico Gasco, Marco Ciccu, Bonnie Wade and Hirohide Kawakami are the force behind the work performed. The lab is tasked with three goals: to provide short-term support to Lamborghini's R&D activities in the area of composites, through design, analysis and testing services related to specific programs; to provide long-term directions in research by exploring new technologies and propose them to Lamborghini R&D; and to generate and maintain strategic partnerships that connect Lamborghini and other U.S. organizations working with carbon fiber technology. ■



"Composites are no longer the future, they are the present of structural materials for anything that's high performance."

*Paolo Feraboli, A&A Assistant Professor*

## A&A Graduates First MAE-CMS Composites Master's Student

The UW Department of Aeronautics & Astronautics recently granted the first degree in its new composite materials masters program. The degree, titled Master of Aerospace Engineering in Composite Materials and Structures (MAE-CMS), was awarded to Brandon Chapman, an engineer at The Boeing Company. The MAE-CMS is a practice-oriented program designed for engineering professionals and graduate students pursuing careers in composite materials.

*"The MAE-CMS program has definitely had a positive impact on my work at Boeing."*

*Brandon Chapman*

Brandon enrolled in the MAE degree program in 2007 as a part-time student through the UW Education at a Distance for Growth and Excellence (EDGE) program. Because his area of focus was in structures, he was able to quickly transition to the new MAE-CMS degree program when it launched in 2009.

Brandon works in Boeing Commercial Airplanes, primarily on fatigue and damage tolerance analysis methods for both metallic and composite structures. The MAE-CMS degree program exposed him to the latest trends and methods in aerospace engineering. "The MAE-CMS program has definitely had a positive impact on my work at Boeing. I was extremely pleased with how pertinent my studies were to my work, particularly my work supporting the 787."

The relevance of this degree program to engineers at Boeing is no accident. The program was developed as a collaborative effort between Boeing and the UW. "It was certainly a challenge to meet the demands of both work and school, but I have always enjoyed taking classes and expanding my knowledge," says Brandon. "An added benefit is that this program allowed me to get involved in university research again. I would definitely recommend this program to current or future aerospace engineers, especially considering the current trend toward increased use of composites in commercial airplanes." ■



*Brandon Chapman in flight*

**Marlo Anderson**, undergraduate program manager, celebrated 30 years at the UW in December, 24 of them in A&A. That's loyalty. Thank you for your years of dedication and service, Marlo!

**Professor Paolo Feraboli** received the Elsevier Young Composites Researcher Award, bestowed by American Society for Composites at the 25th annual technical conference in Dayton, Ohio in September. This prestigious award honors a member of the composites community who in early career has made a significant impact on the science and technology of composite materials through a sustained research effort.

A paper by **Professor Antonino Ferrante** was the featured article of the May "Focus on Fluids" section in The Journal of Fluid Mechanics. Quoting the publisher, Cambridge University Press, "Every month, one particularly interesting paper in the Journal is the subject of an extended review and discussion by an acknowledged and invited expert in the field."

**Professor Keith Holsapple** attended an inaugural workshop in Bern, Switzerland earlier this year for a team of international scientists who received a grant from the International Space Sciences Institute to study the modeling of the materials of asteroids and comets.

**Mehran Mesbahi**, who joined the department as an assistant professor in 2002, was promoted to professor in September. Congratulations Mehran!

**Professor Kristi Morgansen** and Dr. Linh Vu received the O. Hugo Schuck Award for the best paper in the theory category for their work, "Stability of Feedback Switched Systems with State and Switching Delays", Proceedings of the American Control Conference, 2009. The award for the previous year's work was presented at the 2010 conference.

**Kimberly Maczko**, who joined A&A in 2008 as a secretary senior, was promoted to assistant to the chair this summer. Kim will work closely with new chair Jim Hermanson, and will also be responsible for much of the department's human resources functions, faculty searches, and promotion documentation, plus the multitude of other duties she handles with humor and ease. Congratulations, Kim!

**Alisha Babbitt** spent this summer at Lockheed Martin as a propulsion intern on the Advanced Extremely High Frequency satellite program. She worked on a Hall Thruster flow model and launch and mission operations. Alisha had an opportunity to travel to Florida for the launch of the first space vehicle.

Senior **Luke Jensen** has been a volunteer at the Port Townsend Aero Museum since he was 13, and recently helped revamp the museum website. Luke acquired advanced pilot ratings, including Commercial, Instrument and Certified Flight Instructor.

Graduate student **Lenny Paritsky** participated in the NASA Academy at the Marshall Space Flight Center in Huntsville, Alabama this summer. The academy curriculum balances direct contact with science and engineering R&D with an awareness of the managerial, political, financial, social, and human issues faced by aerospace professionals. Lenny presented the results of his research at the Washington Space Grant Consortium's poster session.

For the last two summers, PhD student **Eder Sousa** has worked at the National Ignition Facility at the Lawrence Livermore National Laboratory (LLNL). Eder's research there in plasma/laser interaction physics will make a significant contribution to the field of laser implosion for inertial confinement fusion that may lead to an alternative energy source.

**Jens von der Linden** received an Honorable Mention from the prestigious NSF Graduate Research Fellowship Program. Also, in October 2009 he and his team won first prize in the business plan competition of the Technopreneurship & Innovation Program (TIP) organized by the EE department. His team worked on a project for an ultrasound cancer treatment diagnostic.

**Kristina Wang**, PhD student and recipient of the Theodore and Marie Sarchin Endowed Fellowship, was asked to speak at the College of Engineering Scholar and Donor Recognition Luncheon. Kristina talked about her ambitions and how the generous support of donors has helped her achieve her goals.

PhD Candidate **Jonathan Wrobel** was the recipient of the prestigious MIT Lincoln Laboratory Fellowship. This generous fellowship is awarded to a meritorious student in his or her last year of study, to supplement a graduate assistantship or subsidize research expenses, and to encourage students who are interested in work at MIT Lincoln Laboratory.

## Undergrads Study at Summer Aero Program in France

This summer three A&A Engineering juniors had the opportunity to study the aerospace engineering field while abroad in France. The Groupe E'cole Aerospatial (GEA) Summer Program is an intensive session of aerospace engineering training and European cultural immersion for students from partner universities in the United States, like the UW. During the session, four engineering classes are taught in English to a group of about 30 students by a full-time professor of one of the participating French universities, or by a French industry professional invited by the GEA. The classes are on the topics of airline management and aviation safety, aircraft structures and materials, combustion and detonation theory, and turbo machinery propulsion. There are also many industrial site visits with tours and informational sessions from such companies as Airbus, ATR, La Delegation Generale pour L'Armement, Eurocopter, Intespace, Messier-Dowty, and Turbomeca.

*"It was an amazing opportunity to apply and explore many concepts we already learned in school at UW, and to learn many new things not covered in standard undergrad courses."*

*Vincent Ethier, junior*

The program also included a crash course in French, giving the students a better idea of how to order a sandwich with more than just butter on it. According to Vincent Ethier, one of the UW students who attended, "It was an amazing opportunity to apply and explore many concepts we already learned in school at UW, and to learn many new things not covered in standard undergrad courses." The students were required to write technical report papers on the information they received from the industrial visits they attended. "My favorite visit was ATR, because it was exciting to go up to, touch, and go inside the aircraft on the line, which gave an up-close look at each technology as it is being installed on their regional aircraft. Experiences like these as a student are hard to come by," said Nathan Precup, another of the students who attended the program this year.

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## First William E. Boeing Fellowship Awarded to Grad Student Philip Gray

Boeing is honoring its founder's vision of close academic and industrial collaboration by establishing the William E. Boeing Fellowship in Aeronautics and Astronautics at UW. The fellowship, announced in February 2010, supports graduate education and research.



"William E. Boeing understood the value of a collaborative relationship with education and research institutions, and recognized that if we work together, our achievements can be much greater than if we work separately," said Todd Zarfos, vice president, 747 Program Engineering. "In naming this fellowship for him we are honoring his vision and leadership and continuing his legacy of excellence and diversity of thought."

The first William E. Boeing Fellowship recipient is Phillip Gray, who is working toward a Master's Degree in Aeronautics & Astronautics. While an undergraduate student at UW, he secured a position as a research assistant with Professor Kuen Lin and distinguished himself as an inquisitive, hard worker.

Phil's current research focus, with Professor Lin, is on fracture mechanics of composite structures to develop an analytical method for predicting crack propagation behavior in composite laminates. Phil is also interested in fluid mechanics, aerodynamics, propulsion, finite element analysis, and flight mechanics. "This vote of confidence from The Boeing Company and the Boeing family means the world to me!"

Prior to his college career, Phil worked as an automotive mechanic and machinist. These crucial years as a craftsman reinforced his dream for further education, balanced with real-world problem-solving skills. ■

## Two Seniors Honored With Inaugural Victor Ganzer Award

Two students who are passionate about airplane design and model planes received the inaugural Victor Ganzer Award in Airplane Design at the 2010 A&A Spring Banquet last May. Seniors Robert Dick and Jeffrey Gerhart were nominated by Professor Eli Livne and subsequently rewarded for their good work.

In high school Robert Dick participated in the Team America Rocketry Competition, and during his junior year his team was one of the 100 national finalists. While on the senior Design, Build, Fly competition team he worked in a leadership position and relished the experience. In the future Dick would like to work in a hands-on role with UAVs. His dream job would involve collecting data and developing aircraft designs using scale flying test beds.

Jeffrey Gerhart has flown model airplanes since he was in grade school. He worked at the Kirsten Wind Tunnel as an undergraduate and has a passion for the aeronautics field. This fall he began graduate studies in A&A.

In memory of Professor Ganzer's years of service and dedication to A&A students, alumni established the Professor Victor Ganzer Memorial Fund in Aeronautics and Astronautics in 2010. This fund will continue to provide an award for students studying airplane design. To secure this fund and eventually endow it for perpetuity, we encourage A&A alumni and former students of Professor Ganzer to contribute. If you would like to make a gift, please contact Megan Ingram, associate director for advancement at (206) 685-1378 or [mkingram@uw.edu](mailto:mkingram@uw.edu). ■



*Students Dick Rothermel and Bert Stein examine the Cessna in Professor Ganzer's first airplane design class, 1953.*

**Richard Scherrer (BS 43)** was elected as a member of the National Academy of Engineering this year. He was cited for his pioneering work on revolutionary aircraft designs with extremely low radar cross-sections that led to the F117A stealth fighter. Congratulations!

**Joe Sutter (BS 43)** was honored as the first recipient of the Flightglobal Lifetime Achievement Award, which was announced at the Farnborough Air Show in London in July. This award honors the most admired individuals in aviation and aerospace. We can't think of anyone more deserving. Congratulations, Joe!

After reading last year's article on Vic Ganzer, **Bob Brinker (BS 53)** wrote to tell us about taking his flight test course in 1953. Bob was one of four students who signed up for the course. He has photos and even a copy of the 90-page report they submitted.



*Photo: L-R: Bert Stein, Bob Joppa, Howard Clark, Dick Roethermel, Bob Brinker, Vic Ganzer*

**Tom Egan (BS 60, MS 64)** is retired, and like many retirees, he is as busy as ever. He is currently designing an indoor sundial (why go outside to catch the time?). Since retiring from aerospace engineering (mostly in control systems), Tom earned an MS in civil engineering, was elected to the local school board, and joined the board of the local library foundation. He also keeps the websites for two not-for-profits in Southern California, where he lives.

**Yasuo Tokita (BS 60, MS 64)** is chairman of MWT Tours and Events in Henderson,

Nevada. He's in the office four days a week, on the golf course on Friday mornings, and on the tennis courts six days a week very early in the morning! Yasuo is active in the Japanese-American Citizens League. He was hoping to take in some Husky games in 2010, optimistic for a good outcome with Jake Locker back on the team.

**James Clark (BS 64, MS 65)** called to touch base. He lives in Mississippi and survived the Katrina disaster. James, who was a former AIAA president, reminded us that he was one of the students who worked on the replica of the Wright Flyer with Professor Joppa (photos of which hang in the Guggenheim conference room).

**Lawrence Malcom (MS 65)** was senior principal engineer for flight controls at Boeing. He is retired now, teaching computer classes to adults at the Federal Way Senior Center.

**Gary Moir (BS 66)** was a guest on a Space Fellowship radio show in honor of Apollo 13 in April. After the Apollo accident, Gary worked in the space division of North American Aviation supporting the redesign of parts in the Command Module's structures. Since that time, he held positions at TRW and Allied Signal Aerospace. In 1993, he started his own engineering consulting firm, Gary Moir & Associates, Inc., from which he is "semi-retired."

**S. Rao Varanasi (PhD 68)** is retiring from The Boeing Company. Dr. Varanasi is an iconic figure at Boeing, having held various technical and management positions in commercial and military airplane programs. Rao's assignments included development of computational methods for engineering applications, and the design, analysis, certification, production and fleet support of airplane programs. He recently served as the co-chair of the Airworthiness Assurance Working Group, leading it through the complexities of the Aging Airplane Safety Rule. Congratulations on a well-deserved retirement!

**Dorothy Dick (BS 70)** is retired and enjoys her time traveling, golfing and volunteering at the animal shelter near her home in Ohio.

**J. Miguel Santos (BS 78)**, director of international sales for Africa and Middle East at Boeing Commercial Airplanes, was elected a Fellow of the Royal Aeronautical Society in the United Kingdom. Miguel has been with The Boeing Company more than 31 years, having held positions in advanced engineering, marketing, product marketing, customer requirements and sales.

**Frederick Webster (BS 81)** is flight controls and flying qualities technical expert at the Air Force Flight Test Center, Edwards AFB, California, where he has been for 28 years. Frederick has worked on the B-52, F-15, X-29, T-1A, F-22, F-16, C-17 and many others. He is currently in charge of advancing the state-of-the-art for aircraft stability and control, flight controls, flight handling qualities and flight testing for the AFFTC. Frederick also trains and mentors young engineers in the same disciplines.

**Alek Komarnitsky (BS 84)** never disappoints us with his amazing photography. This time he sent a link to a nest of hummingbirds near his home. <http://www.komar.org/faq/travel/hummingbirds/nest/> The photos showed them from birth to fledging. Some House Finches made a nest in the wreath on his door, and he taped them as well: <http://www.watching-grass-grow.com/house-finch/2010/>. Beyond the Komarnitsky neighborhood, Alek went to Churchill, Canada, the "Polar Bear Capital of the World," where he got some up-close-and-personal footage of the bears.

**Tim Nelson (BS 85, MS 89)** is an associate technical fellow at Boeing Commercial Airplanes, working in flight operations engineering. He also provides support to several Boeing customer airlines in Western Europe. Tim and his wife Debbie (MS 91) have a son, daughter, and a Golden Retrieverish mutt!



## Marc Gould (BS 42) Celebrates 90th Birthday!

Marc Gould (BS 42) has had a long, rich life and an accomplished career. After graduating from our department, he worked for several years at Boeing in Vancouver as a flight engineer during tests of the company's Catalina PB5Y-5. Marc eventually joined North American Aviation's (NAA) Rocket-



*Marc Gould (second from left) in 1950, then head engineer for Santa Fe Tank and Tower, along with co-workers.*

dyne Division—and retired from North American / Rockwell in 1986. During his 30-year NAA career, he worked on the Atlas and Minuteman missile programs, as well as on small engines for the Gemini spacecraft and the early Space Shuttle. When NAA was awarded a US contract for aspects of atomic energy breeder reactors, Marc and an NAA chemist designed, built and successfully tested a component that cleaned the sodium in a reactor's liquid sodium cooling system. Toward the end of Marc's career, he worked on the B-1 Stealth bomber programs.

Marc did not want any gifts for his 90th birthday, but his son Neil and daughter Sherry wanted to recognize him in a meaningful way. Knowing that he valued education and cared about undergraduate students in the Department of Aeronautics & Astronautics, they asked friends and loved ones to donate to the A&A Scholarship Fund. His family and friends responded generously. The contributions to the A&A Scholarship Fund we have received on Marc's behalf will continue to support students in the years to come. Congratulations to Marc and a sincere thank you to him and his family for their support of A&A and our students.

**Adnan Eroglu (MS 86, PhD 91)** was in touch with Professor Breidenthal late last year. He heaped praise on the department and Professor Breidenthal, and what he learned in his labs, crediting him with his success today building gas turbine combustion chambers. Adnan has worked at Alstom Power, a world-wide power generation company, for almost 20 years.

**Jared Smith (BS 87)** is a senior engineer at SPARTA Defense Sector (dba Cobham) in California. Jared is involved in guiding their critical technologies and industrial base investigation activities.

**Lt Col Forrest Olson (BS 89)** is the lead at HQ Air Force Special Operations Com-

mand in charge of Requirements Development, Acquisition/Sustainment, & Program Management for non-standard aviation (NSAv) and aviation foreign internal defense (AvFID) aircraft programs.

**Aline Cotel (MS 92, PhD 95)** stopped by in June. Aline is an associate professor in the Civil & Environmental Engineering Department at the University of Michigan.

**James Dutton (MS 94)** piloted the space shuttle Discovery to dock with the International Space Station in April. It was a flawless mission, and the crew made it look easy according to the flight director.

An engineering education is out of the financial reach of many talented students. Endowed scholarships and fellowships assist with support for tuition, books, and fees. They also help us attract the nation's brightest students and keep our A&A department competitive with peer engineering schools across the nation.

You can help secure their future by supporting one of the nation's best programs, a continuing force for technological progress and the strengthening of our regional and national economies. Planned gifts provide creative and flexible strategies for your estate and charitable giving. Some planned gifts provide you with income. Many can reduce your taxes. The greatest benefit, however, lies in knowing you are supporting work at the University and in A&A that is important to you and helpful to others. Just ask A&A alum John LaVillette (BSAA 57, BSIE 63, MBA 64). "This wonderful nation and university need to continue to attract, educate, and inspire thousands of future engineers. By giving through our estate, we can be part of that future," he said.

Traditional deferred planned gifts, such as bequests, ensure that future generations will benefit from your generosity and legacy. Many other types of planned gifts also can benefit A&A today.

To learn more about planned giving in A&A, please contact Megan Ingram at (206) 685-1378 or [mkingram@uw.edu](mailto:mkingram@uw.edu).

**Daniel Pasco (BS 94, MS 96)** is in charge of creative and strategic direction at Black Pixel, a team of software developers based in Seattle. Their "passion" is Apple iOS, and they've developed many successful apps, including Bistromath for the iPhone.

**Will Dejong (BS 95, MBA 05)** now a flight analyst at AeroTEC, was called in to help troubleshoot a problem at his former workplace: the Kirsten Wind Tunnel. He stopped by to catch us up on life in his busy household with his young son and two little girls.

**Brian Capozzi (MS 96, PhD 01)** stopped by this summer with his two beautiful daughters.

We were lucky enough to see **Ki-Seuk Lee (BS 96, MS 98, MEngr 00)** in April and October this year after more than ten years away from Seattle. Ki-Seuk has been traveling for his job in the Electrics & Electronics Certification Center, Digital Industry Division of the Korea Testing Laboratory. At home in Korea, Ki Seuk and his wife JaeMin keep busy with their two young sons.

**Scott Nelson (BS 96)** is a lead design engineer for Boiling Water Reactor control rods division of GE Hitachi Nuclear Energy. Scott is married with three children and loves life at the beach in Wilmington, NC.

**Rob Jarrell (MS 97)** is a dynamics analyst for Rolls Royce Corporation. Rob works on rotor dynamics analysis and whole engine modeling for the ADVENT engine program.

**Joseph Armas (BS 98)** is vice president of GVK Elevator Consulting Services in San Francisco.

**Duane Ludwig (MS 98)** stopped in Seattle in October after a vacation to Mexico. Duane is starting a new job working with the FAA to implement Nextgen air traffic management systems.

**Suttiiphong "Spot" Srigrarom (MS 98, PhD 01)** came to visit this summer. He and his wife are expecting their first child.

**Ben Davenport (BS 99)** is a major in the US Marine Corps and served several tours of duty in Iraq. He is also a Chinese Olmsted Scholar. Ben is attending graduate school at Fudan University in Shanghai, to study Chinese diplomacy and international relations.

**Krystal ParkerMeyer (BS 00, MS 02)** was in town this fall and stopped by to show off her son. Krystal is a test engineer associate at Lockheed Martin in Santa Cruz.

**Cheng-Chun Ryan Lee (MS 01)** received his PhD from the UW mechanical engineering department last year and accepted a postdoctoral research position at Teesside University in Middlesbrough, U.K.

**David Meller (MS 01)** received his PhD from Arizona State University in bioengineering/ biological and health systems engineering in April. His dissertation topic was "Characterization and Decoding of Cutaneous Sensory Feedback from the Hand." David accepted a position at Exponent, an engineering and scientific consulting firm.

**Josh Sementi (MS 01, PhD 05)** was a symposium participant at the UW Graduate Student and Postdoc Networking reception in October. Josh is an engineering lead at Aviation Partners Boeing. He works on projects ranging from finite element modeling for aero-elastic problems and product development, to flight testing and certifying new designs.

**Daren Welsh (BS 01)** is extra vehicular activity (EVA) flight controller and instructor at NASA MOD, and was lead for the ISS Increment 18 and Shuttle mission STS-129. He is currently the operations lead for Desert RATS, where NASA will test Constellation Lunar Surface Systems in a simulated 14-day lunar mission.

**Dominic "Tony" Antonelli (MS 02)** was the pilot on STS-132 Atlantis in May, the 32nd Shuttle flight to the International Space Station. STS-32 delivered an Integrated Cargo Carrier and a Russian-built

Mini Research Module to the station.

**Lorenz Eber (MS 02)** came by to say hi while he was on campus for Engineering Discovery Days this spring with his daughter, who was just admitted to the UW. Lorenz is the unmanned systems safety director at the Naval Surface Warfare Center Dahlgren T&E Range Division in Virginia. He loves his job (and gets to fly the Scan Eagle!).

**Eric Forbes (BS 02)** was in town for a conference in Seattle and stopped by to say hello. Eric works in business development for 3M, and loves his job, which allows him a lot of variety and creativity.

**Paul Forquera (BS 02)** writes to say that after working at Lockheed and completing his MS at Stanford he joined SpaceX in the early days of the now large company. He has been leading the Guidance Navigation and Control group since June 2009. Paul says he loves the small world feel of that huge industry. Paul is in good company with other A&A Alums, such as **Ralph Ewig (MS 97, PhD 06)** and **Joshua Brost (MS 04)**.

**Joshua Leingang Batolein (BS 02)** is in the Boeing Propulsion Systems Division (PSD) in Commercial Aircraft in Renton. He has worked on various engines within PSD including 737, 747, 767, and currently 777. Josh and his wife, Serai, have a 3-year old son and baby daughter.

**Joshua Brost (MS 04)** is manager of business development at SpaceX in California.

**Tomohiko Ishiyama (MS 04)** is working as a manufacturing engineer at EPSON Portland Inc., in Oregon. He and his wife had their first baby this fall.

**Sonca Nguyen (BS 04)** is on the technical staff in engineering analysis at MIT Lincoln Labs and came for the second year in a row to the UW Science and Engineering Career Fair to recruit students from the UW.

Sonca loves her job there, and has happily adjusted to living on the East Coast. She received her PhD from the University of Michigan in 2009. She was married in May.

**Peter Norgaard (BS 04)** spent some time on campus this summer. He will finish his PhD this autumn at Princeton, then begin a one-year American Institute for Physics Congressional Fellowship, working for the US Congress. After that, Peter plans on a postdoctoral position at UC Berkeley.

**Sanjoy Som (MS 04)** is completing his PhD in earth and space sciences at the UW this quarter, and has accepted a post-doctoral research position at NASA Ames Research Center. Congratulations, Sanjoy!

**Rob Hanson (MS 05)** stopped by the department on his way to Australia. Rob had spent a year there before returning “stateside” and decided to go back down under!

**Matt Lin (BS 05, MS 08)** was on campus in October for the Science and Engineering Career Fair as a representative for Boeing. He stopped by to say hello and catch up (and to hopefully hire some A&A students!).

**David Adamson (BS 06)** is a flight test engineer at Boeing working mostly on the 787 program. David and his wife, Blythe, had their first child, a baby girl. He says it’s hard to believe being a parent is so challenging and so much fun!

**Joe Giordano (MS 06)** and his wife Jihyan came by to visit this spring with baby Jonah (now 20 months) after a trip to Korea to introduce him to family there.

**Keith Munson (MS 07)** just passed three years with Boeing. He is a manager with the 777 Program Planning and Control, and he works closely with Structures Engineering on the 777 and 767 Sustaining Programs. Keith and his wife have a 2-year-old son and are expecting a second son at the end of December.

**Derek Schmuland (BS 07, MAE 09)** is at Aerojet, working on the Orion Crew Module reaction control system, which is based on Aerojet’s 100-pound hydrazine rocket engines.

**Renee Lee (MS 08)** is working at the Aviation & Missile Research, Development & Engineering Center in Alabama.

**Amir Rahmani (PhD 08)**, who holds a postdoctoral research position at Georgia Tech, stopped by this spring on his way to the IEEE Controls Systems Society conference in Anchorage, Alaska.

**Kevin Yee (BS 08, MS 10)** is working at Northrop Grumman in California. On a rainy day in Seattle, he sent a photo of his apartment in Manhattan Beach, overlooking the ocean and palm trees—just to rub it in.

**Namiko Saito (BS 09)** recently passed her PhD qualifying exam at Caltech—no easy feat! Namiko is working hard, earning the respect of her peers and the faculty at Caltech, where she is studying CFD. In addition to studying, she finds time to explore L.A. and travel—she took a trip to Paris, and of course fit in a visit to Seattle and the UW this summer.

As some of you have heard, **Jason Wong (BS 09)** was involved in a tragic accident late last year. Jason and his father were hit by a drunk driver in the driveway of their home. Jason pushed his father out of the way, but he lost his left leg and suffered other injuries. His father suffered a broken leg and broken vertebrae. This ultimately led to the closure of the family restaurant despite a community effort to save it. Our thoughts are with Jason and his family.

**Tripti Mathur (MAE 10)** is happy in her position as a parts integration engineer at Delta Airlines in Minneapolis. She likes the perks (including complimentary travel), but is not sure she’ll be able to handle the cold winters!

**William “Pete” Drummond, (BS 39) A&A Distinguished Alum 1988** passed away in November. Pete Graduated magna cum laude and earned a master’s degree at Cal Tech. After graduation, he joined Douglas Aircraft Co. He held key positions such as director of flight and laboratories and vice president, and contributed to a variety of challenging projects, among them the DC-6, DC-8, A3D, A4D, C-133, X-3, Zeus and Saturn rockets, Skylab, and solar thermal power plants.

We were saddened to hear that former **A&A research engineer Greg Lipski** passed away in June. Greg left A&A in 2003 to go to medical school, but was soon diagnosed with leukemia. He persevered and earned an M.D. in 2008. Greg lent his technical expertise to many faculty and students in A&A, and was well liked by all who worked with him. He will be remembered for his creativity, craftsmanship, and warm spirit.

**Lynn Olason (BSAE 1943), A&A Distinguished Alumnus 2003**, passed away in April. Lynn, one of a great generation of Boeing engineers, helped develop the company’s first passenger jet, the 707; held a patent on the 737 single-aisle jet; headed the 747 jumbo-jet division; and ended his career as a vice president of engineering. At Boeing, Lynn and alums Jack Steiner and Joe Sutter were both colleagues and friends. He will be missed by many.

**Robert C. Potter (MS 63)** passed away in January. Bob worked at Boeing for 40 years, where he held increasingly important technical and leadership positions on Boeing’s SST, 727, 737, 747 and the launch of the 777-300 programs. Upon his passing, friends and family have made donations in his memory to eventually fund an endowed scholarship in his name. To donate to the scholarship in Bob’s memory, please contact Megan Ingram, associate director for advancement at (206) 685-1378 or mkingram@uw.edu.



211 Guggenheim Hall, Box 352400 Seattle, WA 98195-2400

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## Highlight

### **Editors**

Wanda Frederick  
Deidre Girard

### **Layout & Design**

Deidre Girard

### **Contributors**

Adam Bruckner  
Paolo Feraboli  
Wanda Frederick  
Deidre Girard  
Jim Hermanson  
Hannah Hickey  
Megan Ingram  
Sandy Marvinney

Send address corrections, questions,  
and comments to the editor:

highlight@aa.washington.edu

<http://www.aa.washington.edu> Tel: 206.543.1950 Fax: 206.543.0217

# Highlight

## Undergrads Study in France (continued from page 6)



This summer program has existed for over 6 years and each of the past 6 has included a delegation of UW students. "I was surprised that many of the professors in our courses knew so much about the UW and the research being done here," said Keith Neale, the third UW student who attended this year. The GEA Summer Program is a strong projection of the international standing of the University, and has been a continued success in bringing to the UW classroom an international course not available to many other universities. The continued success of this

## MURI Grant (continued from page 1)

in Daniel's lab, studies flight in organisms ranging from insects to birds.

The grant was awarded through the Office of Naval Research's Multidisciplinary University Research Initiative program, which funds basic research that has the potential for both commercial and defense applications. That program is restricted to academic institutions, but Morgansen says Pacific Northwest aerospace companies will likely be involved in some capacity.

"This is a basic research project, so all of the results will be public," Morgansen said. "I imagine the tools we're developing will be of interest to the aerospace industry." ■

Article by Hannah Hickey  
UW Engineering Writer