Highflight 2002-2003
University of Washington
Aeronautics & Astronautics Department

From Dreams to Reality:
A Century of Flight

First Flight by Orville Wright, December 17, 1903

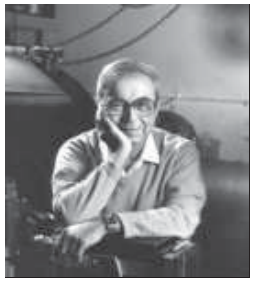
First Seattle Flight (1910)

Boeing Model C seaplane (1916)

Space Shuttle, first flown in 1981

John Bollard, Faculty '61-'97

Fredrick Kirsten, Faculty '15-'51



Abe Hertzberg, Faculty '66-'93

Scott Crossfield (AA '49, '50) and Robert Joppa (AA '45, Faculty '49-'88)

Guggenheim Hall, circa 1931

Joseph Sutter (AA '43) and the 747

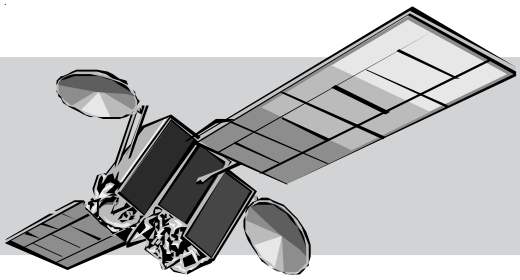
The Wright Brothers' remarkable achievement of the first, controlled, powered flight on December 17, 1903 changed the world in profound ways. The century since that fateful day has seen wondrous aeronautical developments and has extended the reach of mankind deep into space. The Department of Aeronautics and Astronautics at the University of Washington, one of the first in the nation, has contributed to many of these developments for three quarters of that century. Our graduates have made seminal contributions to aviation and space flight, and our faculty, staff, and students have engaged in basic and applied research that has advanced the state of the art on many fronts.

We have embarked on a project to compile and write our history. The first fruit of our labors has been a paper that will soon be published by the American Institute of Aeronautics and Astronautics, as a chapter in a book on the history of aerospace engineering education in the U.S. Our paper can be found on our website, *http://www.aa.washington.edu*. We are expanding this work into a full book of our own, which we plan to publish in time for our 75th anniversary in autumn 2004. To help us with this enterprise we are seeking input from all of you.

Please send us your reminiscences, anecdotes, photos, and any other memorabilia (or copies thereof) via e-mail to *aahistory@aa.washington.edu* or via regular mail to the address listed on the back of this issue. We will promptly return all original items after copying or photographing them. These materials will enable us to give the book a personal touch. To promote discussion of our history and sharing of recollections, we have also set up a listserve, to which we encourage you to subscribe: *historylist@aa.washington.edu*. We look forward to hearing from you!

—Adam Bruckner

Department News



Musings From Mission Control

by Adam Bruckner, Department Chair

Adam Bruckner

This issue of *Highflight* is coming to you a little later than usual, because we have decided to combine it with *Midflight*, the separate publication we used to publish in midsummer. The year and a half since our last issue of this newsletter has brought excitement and challenges to the A&A department. The excitement swirled largely about the three new faculty members who joined us in the summer and fall of 2002; they are Jim Hermanson, Mehran Mesbahi, and Kristi Morgansen. Full details on their backgrounds, accomplishments, and areas of specialization are found starting on this page. We hope that you will have the opportunity to meet them soon! With these three new faculty, we have completed the hiring process that we started in 1999. A total of seven new faculty have joined us since then, representing the largest turnover in several decades. The presence of these young new colleagues in our department has been highly invigorating.

Student enrollment at the Junior level soared to 58 last fall, a number higher than in any year since 1991. In addition, 31 graduate student applicants accepted our offer of admission this year, the largest incoming group in nearly a decade. Although the large number of entering students stretched our abilities to accommodate them, it was heartening to see the strong resurgence of interest in our field. Our students are as sharp as ever, and I'm sure they will go on to careers that will influence the development of aeronautics and astronautics during the second century of flight much as our previous alumni did during the first century.

(continued on page six)

New Faculty Members

Jim Hermanson

Professor **Jim Hermanson** joined the A&A faculty last autumn as an associate professor, and holds the department's Boeing Professorship. The UW A&A department is not new to him, as he received his BS here in 1977. He then went to work at Boeing Aerospace Co. before attending the California Institute of Technology, where he received his MS in 1980 and PhD in 1985, both in Aeronautics. He then worked as a post-doctoral fellow at the Universität Göttingen, Germany, served on the staff of the UW Applied Physics Laboratory, and was a Research Scientist at United Technologies Research Center. Prior to joining us, he was on the faculty of Worcester Polytechnic Institute, where he was appointed the 10th George I. Alden Chair in Engineering. He and his family enjoyed the 3,200 mile drive from Massachusetts to Washington, and are glad to be settled in their new home in Edmonds.

Professor Hermanson's research interests are in the field of aerothermofluids, with an emphasis on aerospace propulsion, combustion, gas dynamics, and multiphase flow. His recent research activity includes unsteady turbulent combustion in normal and microgravity, liquid fuel injection into supersonic flow, and film condensation under reduced gravity conditions.

Professor Hermanson worked with students as the AIAA student section advisor to host the AIAA Region VI student conference at the UW in April (see article P. 9). He is currently chair of the Graduate Committee. He says that he is happy to be back at this excellent institution. He enjoyed his time here as a student (including his job on the staff of UWAL from 1975-77), and is now fascinated by the mix of familiar and new experiences in the department.

Mehran Mesbahi

Mehran Mesbahi joined the A&A department last summer as an assistant professor. After receiving his PhD from the University of Southern California in June 1996, he worked with the Guidance and Control Analysis Group of the Jet Propulsion Laboratory at the California Institute of Technology. During that time he was also a lecturer in the Department of Electrical Engineering Systems at USC, as well as in the Department of Control and Dynamical Systems at Caltech. Before coming to the UW, he was an assistant professor of Aerospace Engineering and Mechanics at the University of Minnesota-Twin Cities.

Professor Mesbahi's main research interest is in system theory and control, particularly as applied to the design of space systems. His research also involves the development of robust reconfigurable control and estimation algorithms for formation flying of multiple spacecraft, as well as the development of a set of analytic and algorithmic tools for designing high performance hybrid systems—systems that evolve according to an interaction between discrete (logic-based) and continuous dynamics.

Professor Mesbahi was the recipient of the NASA New Technology Award in 2001 for his work on multiple spacecraft formation flying, the Shuttle Radar Topography Mission Technical Award in 2001 from Jet Propulsion Laboratory, the National Science Foundation CAREER Award in 2001, and the NASA Achievement Award for the Cassini Program in 1998.

New Faculty Members (continued)

Assistant Professor **Kristi Morgansen** joined the A&A department last autumn. She received a BS in 1993 and a MS in 1994, in Mechanical Engineering from Boston University, an SM in Applied Mathematics in 1996 from Harvard University and a PhD in Engineering Sciences in 1999 from Harvard University. Before joining the UW A&A department as its first female faculty member, she was a postdoctoral scholar, then a senior research fellow in Control and Dynamical Systems at the California Institute of Technology. Dr. Morgansen holds the Clare Boothe Luce Professorship in Engineering. In addition, she was the recipient of a prestigious National Science Foundation CAREER award for new faculty. The CAREER program recognizes and supports the early career-development activities of those teacher-scholars who are most likely to become the academic leaders of the 21st century. Awardees are selected on the basis of creative career-development plans that effectively integrate research and education within the context of the mission of their institution.

Kristi Morgansen

Professor Morgansen's research interests focus on control methods for nonlinear and coordinated control systems. Her current research includes the use of fish-like propulsive methods for locomotion and active flow control, control of coordinated systems with communication constraints, vision-based sensing for state estimation, and learning methods for nonlinear systems.

Juris Vagners Retires

Professor Juris Vagners retired in June 2003 after 36 years in the department. After receiving his BS in our department in 1961, he pursued graduate studies at Stanford University under the Honors Cooperative Program of the Lockheed Missles and Space Company. In 1967, he joined the A&A faculty, teaching courses in dynamics, space mechanics and control systems. In the early 1980's, he helped to establish the UW's Applied Mathematics Department, and held a joint appointment there for more than a decade. Juris was also instrumental in establishing the cross-departmental Control and Robotic Systems Laboratory at the UW in 1989, for which he received a College of Engineering Recognition Award. He played a strong role in the maturation of controls as a viable field of study for A&A students, as well as in the introduction of hardware laboratory experience as an integral part of their education. Juris says he feels privileged to have had the opportunity to guide so many fine students in the learning process. He also enjoyed participating in the recruitment of the new faculty, who he believes will serve as an energizing force in the department.

Juris Vagners

One of the great advantages of retirement, according to Juris, is the retirees' parking pass that allows him to park anywhere he wants! In addition, his life now runs on *his* schedule—he can work when he wants and play when he wants. He will continue to be involved with research to develop miniature autonomous unmanned aerial vehicles; but, work aside, he sums up his retirement with a quote from Tom Robbins, "It's never too late to have a happy childhood."

Post-Doctoral Fellows, Visiting Scientists and Scholars

The A&A Department has had several new post-doctoral fellows as well as visiting scientists and scholars join us during the last year:

Post-Doctoral Fellows

Zhenqian Chen, who transferred from Worcester Polytechnic Institute to continue his work with Professor Hermanson.

Dong Jia from Carnegie Mellon University, working with Professor Vagners.

Marat Mor from the Technion-Israeli Institute of Technology, working with Professor Livne.

Visiting Scientists and Scholars

Pascal Bauer from the Centre National de la Recherche Scientifique in France, working with Professor Bruckner.

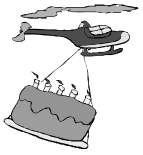
Luciano Demasi from the Politecnico di Torino in Italy, working with Professor Livne.

Shin'ichiro Higashino from Kyushu University in Japan, working with Professor Ly.

A&A alum **Byoungsoo Kim (PhD 94)** from Chung Nam National University, working with Professor Eberhardt.

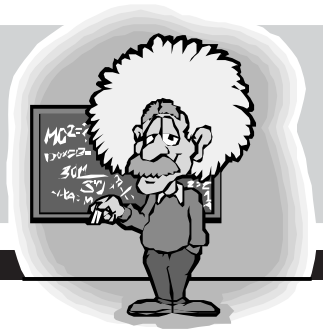
Tetsujiro Ninomiya from the National Aerospace Laboratory of Japan, working with Professor Mesbahi.

Birthday Wishes



Congratulations to **Professor Emeritus Fred Eastman** who celebrated his 99th birthday this year! Professor Eastman, who was one of the first four faculty members in the A&A department beginning in 1929, was involved in the development of the Kirsten Wind Tunnel (designing its balance system) and also served as chair from 1946 to 1952. Professor Eastman retired in 1970.

Department News



2002 Distinguished Alum

Jerry Rising

Jerry Rising, the 2002 A&A distinguished alumnus, was recognized at last year's Spring Banquet. He was given this honor because of his distinguished career and many contributions to the field of aerospace engineering.

During his presentation to department students, alumni, faculty and staff, Jerry gave some very sage advice—especially to graduating seniors. He encouraged them to decide if they want a graduate education, and if so, he cautioned them not to wait too long to pursue it, to be happy in their work, and to make financial provisions for retirement early in their lives. He also noted that the half-life for an engineer is about 15 years—so he emphasized the importance of continuing education.

After obtaining his BS from our department in 1961, Jerry worked on the on the Atlas missile program at General Dynamics. However, he desired to work on airplanes, and accepted a position at Lockheed where he remained for 35 years, progressing through the engineering ranks and into management. In 1982, Jerry was transferred to The Skunk Works, where, in addition to the F-117, he worked on the SR-71 and U-2 reconnaissance aircraft, and numerous other classified advanced programs. He held the positions of aerodynamics department manager, chief engineer for flight sciences, director of advanced programs, and vice president for the X-33 program.

While at Lockheed, Jerry continued his professional development by obtaining a master's degree from the University of Southern California and a state license as a California Professional Mechanical Engineer. He is also an associate fellow of AIAA.

Jerry retired in June of 2000, and now lives with his wife Linda in Blaine, WA.

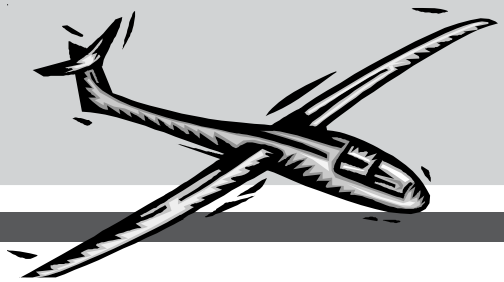
Faculty Updates

Professor **Keith Holsapple** has become recognized as an expert on large asteroid impacts with the earth, and how to prevent them. He was one of the members of the science committee of a NASA workshop last September, an outgrowth of which is a position paper urging NASA to make available new funding to study the problem. An article in the *New York Times* regarding the effects of impacts of large asteroids with the Earth appeared on 11/19/02. Keith has written a chapter for an upcoming book, "Mitigation of Hazards from Asteroids and Comets" to appear later this year. He will be taking a sabbatical next year to study these and related problems with scientists in Europe.

Three faculty members from our department visited Lyon, France for a weeklong conference, October 14-19, 2002. However, this was no pleasure cruise. The faculty members (**Alan Hoffman, Tom Jarboe,** and **Uri Shumlak**) were honored with the acceptance of three papers for presentation at the prestigious International Atomic Energy Agency (IAEA) Conference on Fusion Energy. The IAEA conference provides a forum for each country to nominate its top researchers in the field of plasma dynamics and fusion energy. The Plasma Dynamics group in the Aeronautics and Astronautics department at the University of Washington is recognized as leaders in the field of innovative plasma confinement concepts. The selection of three papers from our department was an honor that indicates the worth and quality of the research being performed by our faculty. The presented papers covered current research programs that involve many undergraduate and graduate students, staff, and faculty. The research included flow stabilization of the Z pinch, current drive in the field reversed configuration, and helicity injection in the spherical tokamak.

For the last several quarters, **Professor Tom Jarboe** has been serving on a panel of the Fusion Energy Advisory Committee (FESAC) to the Department of Energy. The purpose of the panel is to lay out a plan to put fusion power on the electrical grid in 35 years. Fusion is now recognized as the energy source that will power a hydrogen economy during the last half of this century and beyond —a vision being put forth by President Bush as a part of his energy plan. Fusion fuel, which is virtually inexhaustible, will eliminate greenhouse gas production.

Professor Kuen Lin, along with Professor Mark Tuttle in Mechanical Engineering, has proposed the development of a Federal Aviation Administration center that would be directed toward education and research on advanced materials for transport aircraft structures. The proposal received strong support from Senator Cantwell and The Boeing Company. The center would focus on studying the durability of new, stronger and lighter materials (such as advanced composites) training engineers and technicians specializing in such materials, and helping companies, researchers and the government find new ways to apply these technologies. The proposed bill has been passed by the Senate, and if approved by the House, would create an FAA Center of Excellence at the University of Washington in Seattle. Besides the UW, Washington State University, Oregon State University, Edmonds Community College, Boeing and other companies would participate in the center operations.



Department News

Staff News


Greg Lipski

Greg Lipski, who was a research engineer here since January 1996, has left the A&A department. We were sorry to lose Greg, but our loss is the medical community's gain! Greg was accepted at the UW Medical school starting this fall. He is looking forward to beginning this new challenge, and hopes to be able to use his engineering background and experience to contribute to improved technologies in health care. He is considering specializing in orthopedic surgery or emergency medicine.

Some of Greg's most significant contributions to the department have been his efforts in upgrading the undergraduate laboratory courses and providing electrical instrumentation support for Kirsten Wind Tunnel testing. Greg was also a part of the landing team for the Aerosonde transatlantic flight in Scotland in August 1998. In addition, Greg taught both AA 210 and AA 448 courses, for which he received high praise from the students.

Greg enjoyed the wide variety of interesting projects he contributed to here, and being able to improve the learning experience for students. He says, "I've really enjoyed my time here and will miss the working environment and the technical challenges." We'll miss Greg, too, but wish him success in his new academic and career endeavors.


Brian, Joan and baby Julia

UWAL business manager **Brian Geppert** and his wife Joan had a beautiful baby girl, Julia Jacqueline, on October 27th. Julia was a healthy 8 pounds and 13 ounces!

Alumni Summa Laude Dignati Visit A&A


George Jeffs, Jack Steiner and Joe Sutter

George Jeffs (BS 45, MS 48), **Jack Steiner (BS 40)**, and **Joseph Sutter (BS 43)**, three of our alumni who have received the UW's highest honors by being named Alumni Summa Laude Dignati, visited the UW in June 2002 for lunch with Engineering Dean Denice Denton and then president of the Board of Regents, Ark Chin. Following lunch the they visited the A&A department to meet with the Mars Gravity Biosatellite student project team.

Highflight is published annually for alums and other friends of the Department of Aeronautics and Astronautics to provide updated information on department and alum activities. Reader input is encouraged and appreciated. Comments and critiques can be directed to **Highflight** by emailing highflight@aa.washington.edu, calling (206) 616-1113 or writing to us:

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2003 Distinguished Alum


Lynn Olason

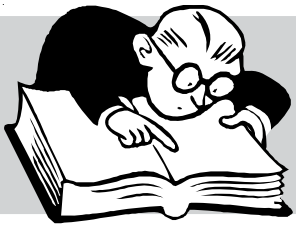
Lynn Olason was born in 1920 on a farm in the eastern part of North Dakota. His family moved to Seattle during the Depression, where he attended Ballard High School.

While an engineering and Army ROTC student at the University of Washington, Lynn fastened wing parts for Boeing during the summers. After graduating in 1943, he joined the Army Air Corps and received a regular commission. Lynn was assigned to the aerodynamics department at Wright Field in Dayton, Ohio, where he performed research on high-speed flows.

After the war, Lynn returned to Seattle as an aeronautical engineer for Boeing, eventually becoming chief of aerodynamics for all commercial airplanes. He participated in the commercial certification of the Stratocruiser, together with A&A distinguished alumni, Jack Steiner and Joe Sutter. Lynn was assigned to the original development team for the 707, and also worked on the performance and certification of the 727 and 737. He is listed as one of the patent holders on the 737 for his engine/wing integration analyses. Lynn worked on the configuration and airline specifications of the 747 during the early stages of its development. As director of product development, he advocated the seven-abreast, two-aisle, economy cross-section configuration which was selected by the 767 launch customers. In 1978, Lynn was promoted to vice president/general manager of the 747 Division. During that period, the upper deck of the 747 was elongated by more than 23 feet, into the configurations that are present today on the 747-300 and 747-400. He retired from Boeing in 1984.

Lynn and and his wife, Marcella, recently celebrated their 60th wedding anniversary.

Student News



2002 Student Awards

SENIOR AWARDS

A&A Aerospace Design Award
Zach Adam and Autumn Lewis
A&A Leadership Award
Eric Forbes
Dale and Marjorie Myers Scholarship
Lisa Kajitani
Dr. Walter F. Hiltner Award
Kristen Lee
George E. Solomon Prize for Exceptional Performance
Grady Lemoine
Robert J. Helberg Memorial Award
Jeremy Zanzig
Robert Max Reynolds Scholarship
Varo Ly and Adam Wuerl
Rudolph H. Reichel Memorial Award
Andre Rekhtin

JUNIOR AWARDS

A&A Wayne Olson Scholarship
Christopher Lum
Arthur & Linda Pederson Engineering Scholarship
Varo Ly
Bishop-Fleet Foundation Scholarship
Andrew McComas
Clyde L. & Ursula A. Crawford Scholarship
Kevin Love
Lance Erik Fogde Endowed Scholarship
Melissa Senger
Louis & Katherine Marsh Memorial Scholarship
Ben Joseph and Thomas Terreau
Roy E. and Irene C. Grossman Scholarship
Luke Dubord

GRADUATE AWARDS

Achievement Rewards for College Scientists
Grady Lemoine
A&A Fellowship
Jeremy Wimer
Andris Vagners Latvian Memorial Fellowship
Laura Nealon
George and Anita Snyder Fellowship
Joel Lohrmeyer
Gordon C. Oates Memorial Endowed Fellowship
William Johnson III
Graduate School Fund for Excellence and Innovation
Yuko Hatano
Louis and Katherine Marsh Fellowship
Lisa Kajitani
Osberg Family Trust Fellowship
Joshua Sementi

Musings From Mission Control (continued)

On a sad note, several of our beloved former faculty, staff, and alumni passed away during the past year and a half. They include Professors Abe Hertzberg, Bob Joppa ('45), and Bob Street, long-time staff member Nancy Mattick, and alumni George Snyder ('31), George Martin ('31), Jack Steiner ('40), and Vinod Modi (MS '56). Brief obituaries appear in the "In Memoriam" section of this newsletter.

The challenges we have faced continue to be related to the University's and the State's budget situation. The State's fiscal biennium that started this past July 1 faced a budget shortfall of $2.5 Billion. Not surprisingly, the University's allocation was cut. Although the size of the reduction was somewhat smaller than we had originally feared, its impact will nevertheless be significant. In spite of the cuts we have had to absorb during the past few years, we have been striving to maintain the quality of our program. Indeed, the latest rankings by *US News and World Report* place our department 11th in the undergraduate category.

You will soon receive an official Annual Fund request from the University of Washington. When you get it, we would like you to consider a contribution to the AERO/ASTRO FUND, which will allow us to designate funds to areas such as classroom activities support, providing scholarships for graduate and undergraduate students, and sending students to technical conferences. In this issue, you'll find examples of how we've utilized your contributions this year, including a report on recent student airplane and space design projects, the AIAA Region VI Student Conference that we hosted, and a profile of one of our fellowship recipients, along with a history of the fellowship. Your past support has helped us meet many of our goals, and we hope that you'll continue taking part in building our future by making a contribution to the AERO/ASTRO FUND during the Annual Fund Campaign.

Student News

Student Updates

PhD student **Valerie Izzo** was selected as the first recipient of the Hertzberg Research Award. Valerie has been running the resistive MHD simulation code NIMROD to investigate and predict the plasma dynamics of Professor Tom Jarboe's experiment, the helicity injected torus with steady inductive injection. Valerie's calculations have shown that previous negative results of other investigators were wrong. A paper written by her on this has been accepted for publication in *Physics of Plasma*, and she presented a talk at the Sherwood Fusion Theory Meeting in April 2003.

Junior **Peter Norgaard** received a 2003 national Barry M. Goldwater Scholarship. Peter, who was a former recipient of a NASA Space Grant Scholarship, and this year's recipient of the Dale and Marjorie Myers Scholarship, was working as a summer research intern at NASA Goddard Research Center on the Micro-Electro-Mechanical Systems team. As a senior in our department, Peter will continue working with Professor Shumlak on the ZaP Fusion Plasma Project.

Graduate **Pablo Navarro-Bullock** is spending six months at the Technical University of Berlin as a part of the Reinhardt Abraham Memorial Foundation Exchange Program, performing research on a CFD simulations of a Surface Hot Wire.

(L) Grad Chris Deards, Josh, Shelly and (R) Chinh Tran (MS 01)

Josh Sementi and Shelly Hiatt were married on December 21st in Couer D' Alene, ID, and honeymooned in Leavenworth and Stehekin, enjoying the snow, exceptional food, and moonlight snowshoeing in the North Cascades. Josh is currently in the fourth year of his PhD program researching High Speed Unsteady Jet and Wing Interactions with Professor Russell. He is also teaching the Engineering 100 course in the College of Engineering.

2003 Student Awards

SENIOR AWARDS

A&A Aerospace Design Award
Luke Dubord and Bradley Johnson
Dr. Walter F. Hiltner Award
Andrew McComas
George E. Solomon Prize for Exceptional Performance
Christopher Lum
Robert J. Helberg Memorial Award
Devin Kipp and Kevin Love
Rudolph H. Reichel Memorial Award
Benjamin Joseph

JUNIOR AWARDS

Bishop-Fleet Foundation Scholarship
Lawrence Stewart
Clyde L. & Ursula A. Crawford Scholarship
Jason Buller
Dale and Marjorie Myers Scholarship
Peter Norgaard
Lance Erik Fogde Endowed Scholarship
Kakani Young
Louis & Katherine Marsh Memorial Scholarship
Nathan Fulfs
Robert Max Reynolds Scholarship
Joshua Roy and Garrett Teahan
Roy E. and Irene C. Grossman Scholarship
Richard Golob, Melissa Kagele, and David Peterson

GRADUATE AWARDS

Achievement Rewards for College Scientists
Daniel Klein
Andris Vagners Latvian Memorial Fellowship
Christopher Lum
George and Anita Snyder Fellowship
Daniel Vaughan
Gordon C. Oates Memorial Endowed Fellowship
Mark Pharris
Graduate School Fund for Excellence and Innovation
Kevin Love
Henry L. Gray Memorial Fellowship
Craig Husby
Hertzberg Research Award
Valerie Izzo
Louis and Katherine Marsh Fellowship
David Halaas
Nancy Mattick Memorial Fellowship
Kathryn Nowicki

Your donations at work . . .

Through the following articles, we want to let you know how your donations, scholarships and fellowships impact our students' lives, by providing them funding and resources to pursue their academic goals, gain valuable, hands-on experience through research and projects, and participate in conferences and seminars.

Latvian Arctic Pilot Andris Vagners Memorial Fellowship

The Andris Vagners Memorial Scholarship was established in 1977 to honor the memory of Andris Vagners, who was a Latvian Arctic Pilot, and brother of A&A Professor Emeritus Juris Vagners. The scholarship was formed by Andris' family after his untimely death, and provides funding for tuition, books and associated expenses for a full-time entering student to the Master of Science in Aeronautics and Astronautics program.

Andris was born in 1936 in Riga in Latvia. In 1944, his family was forced to flee their country after the Russian Communist Army invasion. They lived in a British displaced persons camp in Germany until 1949, when they were sent to the U.S. under special immigration provisions. They settled in Vermont, and Andris and Juris (then 13 and 10) began school, quickly learned the English language, and moved to the top of their respective classes. While in Vermont, Andris' first contact with aviation was made through the medium of model airplanes—and his love of flight was born.

Andris Vagners

In 1954, the family moved to Seattle, and Andris met others interested in flight, was able to take free rides with owners of wheel and float planes, and eventually took flight lessons with veteran pilot Lana Kurtzer. After graduating with honors from Lincoln High School, he intended to study aeronautics at the UW, but found that engineering theory by itself failed to excite him. He joined the Air Force, and although he was unable to fly because of strict vision requirements, he spent four years as an airplane mechanic. After being honorably discharged from the Air Force, he took every opportunity to try out new aircraft, and eventually became a pilot and flight instructor. After a flying trip in Ketchikan to search for fish for the salmon fleet, he was lured to the Alaskan frontier, with its extreme challenges to a pilot's skill. He worked for Sea-Airmotive in Anchorage, covering all of Alaska, including the far north; this earned him the nickname "The Red Baron" for his flying skills, steady nerve under emergency conditions, and sharp judgment. After he married, he worked briefly as an FAA examiner and flight inspector in Anchorage, but returned eventually to active flight status with Winship Air Service. He continued extensive flights to the North Slope as the pace of oil exploration and development quickened. It was then that Andris lost his life in an accident, after having logged 12,000 hours of flying under some of the most challenging conditions in aviation.

Andris was deeply sensitive to the quiet aspects of life, and in these quiet moments, he quoted the words of his friend, pilot-writer Ernie Gann, "fate is the hunter of us all with *when* the only question."

The 2003-04 Andris Vagners Memorial Fellowship Recipient

Christopher Lum is the 2003-04 recipient of the Andris Vagners Memorial Fellowship. Chris received his BS from our department this spring (with a departmental GPA of 3.9), and will be joining the graduate program in autumn quarter. In addition to his undergraduate studies, Chris has worked at the Kirsten Wind Tunnel for the last two years, where he was twice named "Crew of the Quarter." He has worked on many groundbreaking tests there, such as YF-22 and the Boeing Sonic Cruiser. In addition, he is a member of AIAA, Sigma Gamma Tau Aerospace Honor Society, and the National Society of Collegiate Scholars, and was the recipient of the 2002 A&A Wayne Olson Scholarship, and the 2003 George E. Solomon Price for Exceptional Performance.

Christopher Lum

As a graduate student here, Chris' studies will be focused on control theory and system integration. He will work with Professor Ly, doing research on a prototype glider that flies with no control surfaces. However, he plans to use the fellowship funding to develop an independent project as a foundation for his second year thesis work. Chris wants to develop a target acquisition and robust guidance system for a remote model rocket interceptor. He says that the fellowship funding will, "allow my idea to take flight, both literally and figuratively!"

A&A Hosts AIAA Conference

The UW Chapter of the AIAA hosted this year's Regional AIAA Student Conference April 10 - 13. AIAA student officers **Andrew McComas**, president and conference chair**, Ben Joseph**, vice president, **Luke Dubord**, treasurer, **Amanda Stephens**, secretary, and **Cary Huang**, outreach coordinator, along with **Professor Jim Hermanson**, worked tirelessly to plan and facilitate the conference for students from the western region. The senior AIAA chapter officers were assisted by the junior officers: **Becky Arnold, Thien-An Hua, Steven Nielson, Peter Norgaard** and **Kristen Pilawski,** and student volunteers **Holly Devlin, Doddy Ervondy, Lisa Taplin, Jose Valdez, Graylan Vincent** and **Chris Wiley.**

The conference provides a forum for students to share research, build relationships, and obtain experience attending and presenting at an AIAA professional conference. Students competed for first, second and third place titles in the graduate and undergraduate categories and for first place in the team category as part of the annual student paper competition.

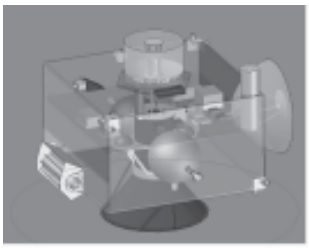
Several generous contributors provided funding, including the National, Region VI and Pacific Northwest Sections of AIAA , as well as the Centennial of Flight Foundation and the Boeing Company. Judges, guest speakers and tours were provided by The Boeing Company, Kistler Aerospace, Aviation Partners, Analytical Methods, Honeywell, NASA, and the Insitu Group. Judging was coordinated by Dr. Oktay Yesil, judging chairman, who was assisted by Mr. Joe Dortwegt, judging co-chairman,

(L-R) Andrew McComas, Prof. Hermanson, Mike Denton (BCAG), Oktay Yesil (PhD 78)

Many thanks are due to Professor Hermanson, all the AIAA officers, student volunteers, and other individuals and organizations who donated their time and resources to make the conference such a success.

2003 Senior Design Projects

Space Design Project



The Asteroid Killer

Students in the space system design class took on a challenge to save Seattle. In the hypothetical scenario, a 100 meter diameter asteroid threatened impact upon the Seattle Metro area on March 15, 2008. Such an impact would be roughly equivalent to a 100 megaton H-bomb. The asteroid orbit was slightly modified from that of the real asteroid Toutatis. In the initial stages the team successfully developed a trajectory to reach the asteroid and a mission plan for how to divert the asteroid. Mission rules required the use of existing spaceflight hardware. A direct ascent mission with a high closure velocity was the only feasible option. The payload selected was a 1.2 megaton thermonuclear device. The team then turned to the consuming task of designing the spacecraft. All the spacecraft systems were represented. Several unique features included a LIDAR ranging system and a sophisticated terminal guidance control system.

Airplane Design Project

The Aiolos—a 28 lb all composite 8-hp UAV—was designed and built this year by the seniors in the capstone airplane design course. The goal was to explore highly-maneuverable, unusual UAV configurations. The Aiolos is designed for 12g turns and for direct side-force control, made possible by additional rudders on end-plates closing a box-wing configuration.

The Aiolos during taxi tests

The Aiolos was designed and built over 16 weeks of the winter and spring quarters, after an introduction to airplane design at the begining of the winter. It is made of Kevlar/Epoxy, Graphite/Epoxy, and hybrid Kevlar-Graphite Epoxy using composite cloth and room temperature vaccum-bag curing techniques. A week-long wind tunnel test at the Kirsten Wind tunnel helped improve the design, and the airplane completed taxi tests in preparation for its first flight.

Support for the airplane design course was provided by Aeronautical Testing Services, in Arlington, WA, aerodynamic and wind tunnel testing specialists, who built moulds and a wind tunnel model, and consulted on manufacturing, aerodynamic, and stability and control issues. Stoddard Aviation of Arlington, WA, provided composite manufacturing support and guidance, and DARA Aviation, from Woodinville, WA, helped with propulsion, systems, and flight operations. We are grateful for the help and support of these companies.

Alum News & Updates

Ken Coward with his 'Wee Bee'

Ken Coward (BS 42) wrote to us from his home in San Diego. He works part-time in the Advanced Development Department of Northrop Grumman Ryan. He credits his education in the A&A Department with preparing him for a long career in stress analysis and aerodynamics at Boeing, Convair and Ryan. He also included this photo of the WeeBee, the smallest piloted airplane in the world (which he originated, engineered and built). WeeBee was followed by HoneyBee and QueenBee. The HoneyBee is the only homebuilt airplane he knows of that obtained an FAA type certificate. In 1992, Ken organized a fiftieth anniversary party for the class of '42!

George Jeffs (BS 45, MS 48), the1980 A&A Distinguished Alum, was the recipient of the prestegious 2003 AIAA Goddard Astronautics Award for skilled leadership and engineering prowess as one of the chief architects of America's space achievements.

Robert H. Smith (BS 46, MS 51) is retired from The Boeing Company and living on Bainbridge Island.

The Smithsonian's *Air and Space Magazine* (Feb/March Vol. 17, No. 6) named **A. Scott Crossfield (BS 49, MS 50)** one of the ten Great Pilots. The article, which presents those considered to be the world's finest fliers, mentions some of his famed rocket-plane flights, including: the X-1, the tail-less Northrop X-4, the Convair XF-92A, the Bell X-5, and the X-15, which he helped design. On Nov. 20, 1953, he took the D-558-II to Mach 2.04, becoming the first pilot to fly at twice the speed of sound!

John Patha (MS 59) serves on the Educational Board of the Museum of Flight, which hopes to work more closely with the A&A department to create educational opportunities for school age children and the public.

Mrs. Heikell, wife of alum **Edward Heikell (BS 61)** found a textbook at Sea-Tac airport with a name written in it. She presumed it belonged to someone at the UW, did some detective work, and found that the owner was new A&A assistant professor Mehran Mesbahi. Strange coincidence! Mrs. Heikell was kind enough to come to the UW and deliver the lost book to Professor Mesbahi.

Les Minear (BS 62) reports that after 30 years in the US Air Force, and several years with SAIC and General Dynamics, he's now a consultant at Lockheed Martin in Fort Worth, TX, where he designs computer systems for the Joint Strike Fighter program. He still enjoys such pastimes as hiking the mountains and valleys of the west. Last year, he and his wife took a rim-to-rim hike of the Grand Canyon for their 45th wedding anniversary!

Leonard S. Voelker (BS 64) retired last April 2002 after 22 years at the NASA Dryden Flight Research Center. He and his wife, Johnnie, are catching up on traveling, camping and building a two-place kit aircraft (Kolb Mark III Xtra) on his back porch. Leonard plans to write a series of magazine articles on flutter for the homebuilders' periodicals since no one else has!

Richard Odell (BS 65) is senior principal engineer working with the landing gear design center at Boeing. He's worked on a variety of interesting projects there since graduation, including: 727 wing stress, 747 power plant, hydrofoils, 757 cargo deck, B-2 aft center section, 777 large cargo door, and the sonic cruiser landing gear.

Michael Robinson (BS 66) was one of the recipients of the 2003 International Council of the Aeronautical Sciences (ICAS) von Karman Award for International Cooperation for his role in the X-31experimental aircraft program.

Terry Adams (BS 71) is a pilot for Delta Air Lines (after retiring as an Air Force pilot). He lives in Utah, where he enjoys hunting, fishing and skiing.

Jerris R. Hedges, MD, MS, FAAEM (BS 71) sent a greeting to Professor Reiner Decher on his retirement. He recalled Professor Decher directing him in the junior lab course, and says that Decher's encouragement of his research efforts helped lead him to a successful academic career—including election to the National Academy of Sciences' Institute of Medicine. He is now chief of emergency services at the OHSU & Doernbecher Children's Hospitals, and professor & chair of the department of emergency medicine at Oregon Health Sciences University.

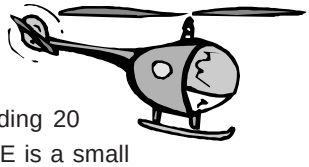
Anita Gale (BS 73, MS 74) worked at Rockwell in California until Boeing bought the division, when she was transferred to Space Shuttle Payload and Cargo Integration responsibilities in Houston. Anita is co-chair of judging activities for the California State Science Fair. She is also co-founder of Space Settlement Design competitions, which have provided engineering proposal experience for high school students since 1984.

As shuttle program manager, **Ronald Dittemore (BS 74, MS 75)** had the difficult job of serving as NASA's spokesperson after the tragic crash of the space shuttle Columbia in February. However, no one could have been more knowledgeable, dedicated or compassionate than Ron, who has been with NASA for more than 25 years.

Mark Simon (BS 83, MS 85) is director for PerkinElmer, an aerospace components and systems business in the DC area, where he lives with his wife and three children.

Artemio (Tim) Cacanindin (BS 84, MS 85) reports that he has had a string of enjoyable jobs working as a DOD civilian for the USAF at Edwards AFB testing airplanes. His positions and projects include F-16 LANTIRN Auto terrain following, B-2 flight controls/flight dynamics chief, Israeli Air Force F-15I, flight test manager, F-16 Combined Test Force deputy chief engineer, and Joint Strike Fighter avionics chief. In his "spare" time, he's involved in roller hockey, kids' soccer, and playing in a blues band.

Mark Simon (BS 83, MS 85) is director for PerkinElmer, an aerospace components and systems business in the DC area, where he lives with his wife and three children. Sixteen years ago, Tim married his college sweetheart Connie, also a UW alum. They have 3 boys and 1 girl. He reports that many UW A&A alumni are making a huge impact on USAF testing and evaluation at Edwards AFB, and he encourages us to, "keep churning out the excellent grads!"



Tom Walker (MS 86) is a managing member of NSE Composites, which he joined in 2000 after spending 20 years with the Boeing Commercial Airplane Group. NSE is a small firm that provides structural analysis, applied research, and consulting services related to advanced composite materials.

Michael Aarnio (BS 88, MS 89, PhD 94), now chief engineer at Pratt & Whitney Seattle Aerosciences Center, presented a seminar to A&A graduate students in February on "Pulse Detonation Propulsion Proof of Concept Test Article Development."

Frederick Swanstrom (BS 88) is a senior manufacturing engineer at Boeing. Since 1992, he has been working on the 777 Composite Empennage in Frederickson, WA. He spends most of his time on design for manufacturing and assembly projects focused on reducing the cost of composites and the 777 empennage. He also supported the Sonic Cruiser development efforts**.**

After graduation, **Jeff Slostad (BS 89, MS 93)** spent 8 years in Los Angeles, mostly with JPL. He came home in 2001, and is now chief engineer for Tethers Unlimited, Inc.

Kamal V. Desai (BS 90, MS 91) is a software engineering instructor for WindRiver Systems in California.

Richard Welnick (BS 90) is a technology integration manager for the 7E7 Airplane Program at Boeing.

Tadashi Mabee (BS 91, MS 93) left his position at Boeing and Seattle in 2001 to go to Avions de Transport Regional, a European aircraft manufacturer, where he has been the regional sales director for North America. He says that he enjoys that side of the business, but don't ask him how to solve those fluid dynamics equations anymore!

Todd Morris (BS 91, MS 92) is working on design/development of avionics and power supplies as a mechanical engineer at General Dynamics in Redmond, WA, which he joined after leaving the Naval Postgraduate School.

Jon Upham (BS 91) is currently operating and maintaining the highest resolution commercial imaging spacecraft, as well as working issues with future spacecraft, as a spacecraft engineer for DigitalGlobe in CO.

Dayton Griffin (BS 92, MS 93), who is working as a design and analysis engineer for Global Energy Concepts, LLC in Kirkland, presented a seminar to A&A graduate students in February titled, "Current Research & Development Efforts for Large Wind Turbine Blades: Aerodynamic Modeling & Structural Design."

Kevin Mahn (BS 92, MS 95) is senior engineer for Quietly Superior, Inc., a small acoustical engineering firm in Kirkland which works on reducing the noise in aircraft (exterior and interior), condos, and office buildings. They are also involved in the FAA certification of new aircraft.

Tom Imrich (BS 93, MS 95) stopped by to visit the office. He was showing his wife, Jennifer, his old stomping grounds in A&A. Tom is an F-16 pilot in the Air Force.

Quinn Smithwick (MS 93, PhD 02) has accepted a postdoctoral position at Schepens Eye Research Institute, affiliated with Harvard Medical, to develop a portable scanning laser ophthalmascope.

Mark Yee (BS 93, MS 95) is working as an engineer at The Boeing Company.

John Hinkey (PhD 94), technical director for Ramgen Power Systems, Inc., presented a graduate seminar in April titled, "Small Company High Risk Technology Development," during which he shared some of the technical and managerial lessons he's learned in his professional life.

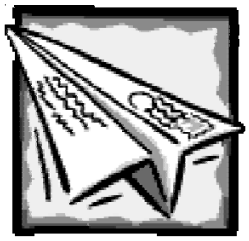
Gregory Williams (MS 95) stopped by to say hello this spring. He is an engineering analyst at Belcan Corporation in Florida.

After many years as an assistant professor at the US Air Force Academy in Colorado, **Brenda Haven (PhD 96)** is now chief of the policy maintenance branch of the US Air Force at Wright-Patterson Air Force Base in Ohio.

Ki-Seuk Lee (BS 96, MS 98, MEngr 00) and his wife are living in Seoul, where he is the coordinator for international affairs and foreign certifications for the Korea Testing Laboratory (KTL). Ki-Seuk travels around the world representing the Korean government. Last year he was in Geneva, and this year in Milan to attend the Worldwide System for Conformity Testing and Certification of Electrical Equipment conference.

Alum News & Updates

David Rathbun (MS 96, PhD EE 01) was co-author of a paper awarded the Best In Conference prize for the 21st Annual Digital Avionics Systems Conference held in Irvine, CA in Oct. 2002. The research paper, (co-authored with alum **Brian Capozzi (MS 96, PhD 01)**, Sean Kragelund (MSEE 02) and Anawat Pongpunwattana (ME), was titled, "An Evolution Based Path Planning Algorithm for Autonomous Motion of a UAV Through Uncertain Environments." David recently accepted a position with The Insitu Group in Bingen, WA.



Scott Carpenter (MS 97) is on the staff of the Spacecraft Structures and Dynamics Group at Jet Propulsion Laboratory in Pasadena, where he finished up stress analysis of the Mars Exploration Rovers that were launched recently. In addition, he is pursuing a Master of Divinity degree at the King's Seminary in Los Angeles. In August, he traveled to Cambodia as a part of an evangelical team that provided medical care.

Chris Chuhran (BS 97) and his wife, Heidi, will be moving back to Puget Sound in November. Chris will be stationed at the Puget Sound Naval Shipyard in Bremerton. They are happy to be moving back among family and friends and green mountains and orcas. Chris will be receiving his MS in mechanical engineering from the Naval Postgraduate School in Monterey, CA.

Wee-Ping Gui (BS 97) is in Singapore, working for ST Aerospace. He started out as an engineer, but has since moved on to do business development. His position allows him to travel extensively. The company, which specializes in airframe, engines & components maintenance, repair and overhaul for both commercial and military jets, has facilities in Mobile, AL; San Antonio, TX; and Dallas, TX. His role in the company is to link up with OEMs, airlines, and other 3rd party service providers to enter into partnerships or joint-ventures.

Ben Diedrich (BS 98, MS 01) stopped in over the holidays while on vacation from his job as a software engineer in control systems at Lockheed Martin Space Systems in CA.

Laila Elias (BS 98) stopped in to say hello on a trip "home" for the holidays. Laila is at MIT pursuing her PhD, along with alums **Mark Hilstad (BS 98)** and **Seung Chung (BS 99).**

Rob Grover (MS 98) is working at JPL, and has been involved with the Mars Odyssey spacecraft as well as the two Mars Exploration Rover missions. He sends wonderful updates and photos of the launches.

Vin Lenbury (BS 98) is a co-pilot for Thai Airways International Co., Ltd, flying regional and domestic routes on an Airbus 300-600R, and is based in Bangkok, Thailand.

Sutthiphong "Spot" Srigrarom (MS 98, PhD 01) is an assistant professor in the Division of Thermal and Fluid Engineering of the Mechanical and Production Engineering Department at Nanyang Technological University in Singapore. Spot recently travelled to Taiwan, where he saw several of our former students, **Ikun Chang, Evan Chan (MS 01), Lawrence Ting (MS 01)** and **Ming-Wang Tsai (MS 02)**.

Brian Covey (BS 99) is an instructor pilot in a T-38A at Vance AFB, in Oklahoma. Despite working long hours, he enjoys flying, and finds his job fun and rewarding.

Ben Davenport (BS 99) stopped by the A&A department to say hello. Ben, who loves his job as a helicopter pilot in the Marines (flying CH-46 (PHROG), CH-53 Superstallion and AH1W (COBRA)), is waiting to be deployed.

Farshad Forouhar (BS 99) and **Arti Nadkarni (BS 00)** were married last summer in Bellevue, WA in a beautiful wedding ceremony incorporating both Indian and Iranian traditions, food and music. Their wedding was also a mini-reunion for some of the A&A alumni and staff.

Chris Hickok (BS 99) stopped by Spring Quarter with his wife and two daughters from Corpus Christi, TX. Chris is flying for the Air Force, and was recently deployed to the Middle East.

Thiemo Kier (MS 99) is working on his PhD at DLR, the German Aerospace Center near Munich, where, in conjunction with Airbus, he is involved in the predesign of a vertical tailplane under particular consideration of loads and aeroelastic aspects.

Laki Vlachos (BS 99) and his wife came to Seattle for a holiday visit. Laki is working as a systems engineer in the communications and software solutions division of Titan Corporation in California.

Ivan Anckaert (MAE 00) is working in Belgium as a consultant at Accenture, an engineering consulting firm.

Matt Craw (BS 00, MS 02) is working as a dynamics engineer at Stirling Dynamics, Inc. in Kirkland.

Huw Edmunds (MS 00), who is a software engineer for The Automation Partnership in the UK, married his long-time girlfriend, Kate in August. The newlyweds honeymooned in Mauritius.

Josh Bloom (BS 01), who teaches high school science and astronomy at Gunn High School in Palo Alto, CA, has applied to be an educator astronaut. NASA has officially requested nominations and applications for this new breed

Alum News & Updates

of mission specialists, and plans to select a half-dozen or so to join their next class of astronauts. The Columbia tragedy did not deter Josh; in fact, he wrote some inspiring words for his students about the astronauts' bravery, dreams, and passion for their work. He believes that "if they were to leave this Earth and not return, they surely would have wanted it to be in response to their calling, in service to their vision for us all."

Paul Choe (BS 01) is a flight test engineer in electrical/mechanical systems for Boeing Commercial Airplane Group. Paul says he is, "still trying to talk them pilots into pulling an invert on twin isle jumbos during test."

Nujoud (Judy) Fahoum Merancy (BS 01) is working as a systems engineer in Systems Integration for Guidance, Navigation and Control on ISS for the Boeing International Space Station project in Houston where she participates in activities related to station integration and international partners. She also provides support to the ISS Mission Evaluation Room in the Mission Control Center at JSC.

Ray Hansen (BS 01) is working at Aerojet in Redmond, WA.

Warren Jones (MS 01) is moving into his final rotation in aerodynamics (the area in which he hopes to focus full-time) at Ford Motor Company in Dearborn, MI.

Vincentz Knagenhjelm (MS 01) stopped in to say hello this spring. He was visiting from California, where he works as a software engineer at Lockheed Martin. However, he is taking a one year leave of absence to go to St. Petersburg, Russia to study the Russian language! In addition, he recently returned from a trip to Iceland.

David Meller (MS 01) is working at JPL in CA, but at the end of the year, he and his fiance, Mairah, are moving to Phoenix, Arizona, where David will begin a PhD program in Bioengineering at Arizona State University.

Satomi Ohno (MS 01) joined the mechanical engineering department at UC Berkeley to pursue her PhD, where she is currently building a vacuum chamber for plasma deposition.

Lawrence Doan (MS 02) and his wife Marilyn had a baby girl on October 30th. Baby Marcella weighed 6 lbs. 7 oz.

Paul Forquera (BS 02) is working at Lockheed Martin in Sunnyvale, CA as a systems engineer in the Defense Meteoroligical Satellite Program. In addition, Paul is working on his Master's degree at Stanford University.

Chris Keeler (MS 02) recently accepted a position as a propulsion engineer for Spectrum Astro in Arizona.

Krystal ParkerMeyer (MS 02) received the Abe M. Zarem Award for Distinguished Achievement in Astronautics on January 7, 2003 at the AIAA Aerospace Sciences meeting in Reno, NV, for her graduate research on characterizing the plume of a pulsed plasma thruster under the guidance of her advisor Professor Uri Shumlak, who was also recognized with an award for his role in guiding her research.

Professor Uri Shumlak, Krystal Parker and Abe Zarem

Valerie Stanley (BS 02) is working as a component engineer and buyer at Aerojet in Redmond, WA. She and her fiance, Charlie McHenry, are going to be married next July.

Devin Kipp (BS 03) was on Wheel of Fortune last year. He did very well on the show, which aired on November 14th. He won a Ford Focus and a cash prize. He bought a round of drinks for classmates who helped him celebrate on the night it aired.

Adam Wuerl (BS 02) and **Melissa Senger (BS 03)** were married July 5th. You can see wedding photos on their website: www.senger-wuerl.com. Adam works for Andrews Space in Seattle. Melissa just accepted a position with Lockheed Martin in CA.

Adam and Melissa

A paper written by Adam titled, "A Genetic Algorithm and Calculus of Variations Trajectory Optimization Technique," was accepted for publication in the *AIAA Journal of Spacecraft and Rockets*.

Jeremy Wimer (MS 03) was married in June 2002. He and his wife, Renee, honeymooned in the Caribbean. Jeremy began the pilot training program at Sheppard Air Force Base in Wichita Falls, TX.

Jeremy and Renee

In Memoriam

During the last two years, we lost some beloved members of our department. Each of them leaves a unique legacy here, and all of those whose lives they touched will always remember them. Our thoughts are with their families and loved ones.

Professor Emeritus **Abraham Hertzberg** passed away on March 27, 2003 after a brief illness. Professor Hertzberg, who received his BS at Virginia Polytechnical Institute and MS at Cornell University, became a member of the A&A faculty in 1966, and established the University's Aerospace and Energetics Research Program. In addition to his teaching and research in the department, Professor Hertzberg was a scientific advisor to the Air Force, NASA, Los Alamos National Laboratory, the National Research Council and the National Academy of Sciences. He was also a member of the National Academy of Engineering.

Professor Emeritus **Robert Joppa** passed away on April 16, 2002. He received his BS from the UW Aeronautical Engineering Department in 1945, and his PhD from Princeton University in 1972. Professor Joppa taught here from 1949 to 1988, then taught at the National University of Singapore for two years. While in A&A, he taught courses in aerodynamics, aircraft design, flight mechanics and stability and control. A focus of his research was wind tunnel testing. One of his lasting legacies is a replica of the Wright Flyer, built with the help of his students, which now hangs in the Museum of Flight in Seattle.

George C. Martin (BS 31) passed away on May 21, 2003 at the age of 93. George entered the A&A department at the prompting of his grandfather who told him, "the future is in the air." He went on to become one of the major contributors to aviation science in the Pacific Northwest. During his 41 year career at Boeing he rose to the position of vice president of engineering, and was an expert in the structural design and analysis for the B-17 Flying Fortress and B-29 Superfortress bombers. In recognition of Mr. Martin's contributions to aviation science, Boeing funded a chair in his name in the UW's College of Engineering.

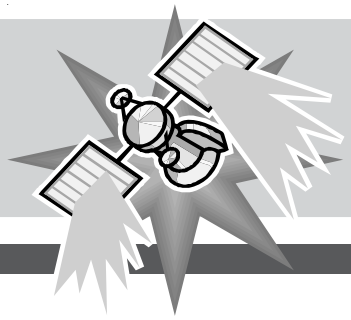
After a long illness, **Nancy Mattick**, former manager of the Aerospace and Energetics Research Program, passed away on March 11, 2003. Nancy, who graduated from the UW with a degree in Sociology, worked in the Department of Aeronautics and Astronautics for nearly thirty years before retiring in July of 2001. Nancy enjoyed traveling, gardening, and antiquing. During her time in A&A and the College of Engineering, Nancy managed a variety of demands with skill and poise, and was well liked by faculty, staff and students.

Alumnus **Vinod Modi (MS 56)** passed away on March 8, 2003. After earning his master's degree in our department, Dr. Modi went on to receive his PhD at Purdue University. Professor Modi was a member of the faculty of the University of British Columbia. He did pioneering work on the use of solar energy to power satellites in space, and designed a liquid damper system for skyscrapers and bridges that reduced vibrations caused by earthquakes and high winds. Dr. Modi was the first Canadian to be named a member of the International Academy of Astronautics.

George Snyder (BS 31) passed away On October 30, 2002. George worked for the Boeing Company from 1931 to 1972, where he rose to the position of vice president of engineering for the 747 program, during its design and initial production. George was the recipient of the College of Engineering Alumni Achievement Award in 1995, and was the A&A department Distinguished Alumnus in 1996. He remained closely involved with A&A, establishing the George and Anita Snyder Fellowship in Aeronautics and Astronautics. In his further generosity, he donated a beautiful totem pole (named "Wings Over the World"), which now hangs in the lobby of Guggenheim Hall.

Jack Steiner (BS 40), who was known as the "father of the 727" for having designed the airplane for Boeing, passed away on July 29, 2003. He was also the chief engineer of the 737 (co-holding the patent with A&A alums Joseph Sutter BS 43 and Lynn Olason BS 43), and vice president of engineering and product development during the inititation of the 747 program. Jack was the A&A Department's first distinguished alumnus in 1978, and was honored as the UW Alumnus Summa Laude Dignatus the same year. In addition, he was a Fellow of the National Academy of Engineering and Britian's Royal Academy of Engineering.

Professor Emeritus **Robert Street** passed away on October 5, 2002. Professor Street graduated from Rensselaer Polytechnic Institute in 1933, and received his PhD from Harvard University in 1939. He was a member of the A&A Faculty from 1949 to 1980, during which time he taught many graduate and undergraduate courses, particularly aerodynamics and gas dynamics. His research focused on the areas of aerodynamics, gas dynamics, space mechanics and fluids. Professor Street had a lifelong love of the outdoors and was active in boating, mountaineering, and conservation groups.



Thank You, Donors

Gifts, cash, and in-kind contributions were received from the following alums and other friends between 1/1/02 and 12/31/02. We very much appreciate your support and the confidence in our program that it conveys. Thank you!

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The A&A Department Annual Banquet and 75th anniversary kickoff will be held May 14, 2004

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