



# AEROCONTACT

A E R O S P A C E E N G I N E E R I N G

A newsletter for  
alumni and friends of  
the Department of  
Aerospace Engineering

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## Space Systems Lab takes ASTEP in the Right Direction



NASA's Astrobiology Science and Technology Experiment Program (ASTEP) will be utilizing the department's space robotics technology to build a dexterous robot arm for deep submergence activities onto the Woods Hole Oceanographic Institute's SeaBed and ultimately the Arctic ice cap.

Drs. Dave Akin and Ella Atkins, and the Space Systems Laboratory announced in November that the department has received an Astrobiology Science and Technology Experiment Program (ASTEP) award from NASA. The award is valued at over \$3 million for the next three years. The ASTEP program will combine the science and technology communities to enable future space missions to examine and determine whether life exists or has existed outside of the Earth. By analyzing the Earth's extreme environments, researchers can be

**continued on page 2**

## Academy of Distinguished Alumni Inducts Four New Members

On November 1, 2003, the Department of Aerospace Engineering welcomed four alumni into the department's Academy of Distinguished Alumni.

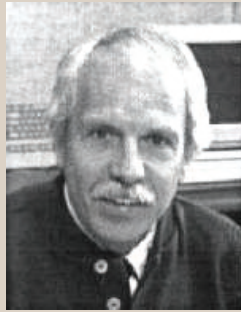
William S. Bissell, '52, George F. Orton, '64, Dr. Norris J. Krone, Jr., '74 and Dr. Michael S. Torok, '86, '89, were honored on a rare warm November night at the College Park Aviation Museum by faculty, staff, students, fellow alumni, along with family and friends. The event celebrated not only this new class of Academy inductees, but also the 100th Anniversary of Flight, the 55th Anniversary of the Department, Homecoming weekend and the John Anderson Scholarship Fund.

The evening began with a welcoming reception outside of the museum's gallery where attendees were surrounded by sights and sounds of the Wright Brothers and past College Park Airport accomplishments. They proceeded to the gallery filled with original and reproductions of aircraft dating back to the early 1900's.

Dean Nariman Farvardin welcomed everyone to the museum and the evening's events. "The story of the Wright brothers is one of experimentation, persistence and courage," he

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# Message From the Chair



I HOPE THAT YOU WILL ENJOY reading the information that appears in this latest newsletter from the Aerospace Engineering Department here at Maryland. It is an exciting and challenging time for us. The state of Maryland is

undergoing hard economic times that have resulted in our budget being decreased significantly from the state. At the same time our student body continues to grow, both in numbers and quality.

The University has accepted 170 students into our program for Fall 2004 from areas around the nation. Their average SAT is 1346 and grade point average of 3.99 – weighted of course. Our current student population stands at about 320 undergraduates and 150 graduate students. Last year the University accepted 150 students into our freshman class and 60 percent of them chose to enroll in fall of 2003. If our yield is the same this year as it was

for last year, we will be looking at approximately 100 new students entering our freshman class. At the same time our faculty has decreased in number. As you saw in the last newsletter, Dr. Vizzini resigned his position here to become Chairman of the Aerospace Department at Mississippi State University and Dr. Darryll Pines is on a two year loan to DARPA. Dr. Barlow will be retiring at the end of this academic year, and although he will continue to be the Director of the Glenn L. Martin Wind Tunnel, he will no longer be teaching courses. On the bright side, we have been given permission to replace these faculty members and are hoping to hire three new faculty members over the next year.

The research program continues to do very well with Dr. David Akin and the Space Systems laboratory attracting two new, and rather large, research programs. One involves working on a smaller version of the Ranger robot for DARPA's use in space exploration and the other is from NSF and involves working on a robot that will be used at extreme ocean depths to investigate biological forms deep beneath the polar

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## Headline story from front page

better prepared to understand analogous systems such as Mars and the Jupiter moon, Europa.

The Space Systems Laboratory will be adapting its robotics technology to build a dexterous robot arm specifically for deep submergence activities. Off the coast of Massachusetts, the manipulator will then be integrated onto the Woods Hole Oceanographic Institute's SeaBED. SeaBED is an Autonomous Underwater Vehicle (AUV) built under the sponsorship of the Office of Naval Research, and the National Science Foundation's Censis Engineering Research Center. SeaBED will then be sent under the Arctic ice cap

to examine and sample marine life around hydrothermal vents at a depth of 4,000 meters. "If successful," states Dr. Atkins, "this mission will require the fully-autonomous robotic manipulation, a first both for undersea and space communities."

The first stage of development planned by the SSL is to build an robotic actuator and test it in a pressure chamber at the Woods Hole Oceanographic Institute (WHOI). This is anticipated to take place over the next six to eight months. By the end of the year, WHOI will give the team SeaBED (<http://www.whoi.edu/DSL/hanu/seabed/>) to use in the tanks for testing.

Almost two decades ago, scientific and

public interest was generated by the discovery of deep volcanic vents in the mid-Pacific and mid-Atlantic ocean rifts. These rifts support rich biological environments without relying on sunlight. Volcanic vents have been discovered recently under the ice cap in the Arctic; however, technology does not currently exist to sample the life forms around these vents. This collaborative project will be the first to obtain pictures of and samples from the Arctic. These will then tell scientists how much commonality in evolution exists between hypothermal ecosystems in widely separated areas. "Arctic hydrothermal vents are considered the holy Grail of oceanography," exclaims Brian Roberts, Research Associate in the SSL. "Everyone

cap. Both of these programs are highlighted in this newsletter. In addition, a team headed up by Drs. Inder Chopra and Pines has recently won an Army MURI to research the development of micro hovering UAV's. Look for more information over the summer and fall from the department. Dr. Mark Lewis's research into the next generation launch vehicles also continues to thrive. In addition, our connection with Georgia Tech, VPI, UVa, NC State, and NC A&T (The National Institute for Aerospace) is growing. We have hired Dr. Robert Tolson as a Liaison Professor the National Institute for Aerospace and he has attracted more than a million dollars in research from NASA Langley to support himself and his students who will be getting their degrees from Maryland while located at Hampton. Dr. Tolson is highlighted in this spring newsletter.

As you will also see in the body of this newsletter, we inducted four new members into our Academy of Distinguished Alumni which brings the total number of members to nine. It gives me great pride to see the accomplishments that have been achieved from the graduates of this department. You will also see that a scholarship in honor of Dr. John Anderson has been successfully established and we

will soon be supporting some of our outstanding undergraduate students from funds that this endowment will generate. I thank all alumni, faculty and friends of the department who contributed to the fund.

Again, I hope you will enjoy reading about what is happening here within the department. I invite you to stop by any time you are in the area to see what has changed since you were here or to communicate with me either by phone (301) 405-1129 or email [four@eng.umd.edu](mailto:four@eng.umd.edu) if you have questions or concerns.

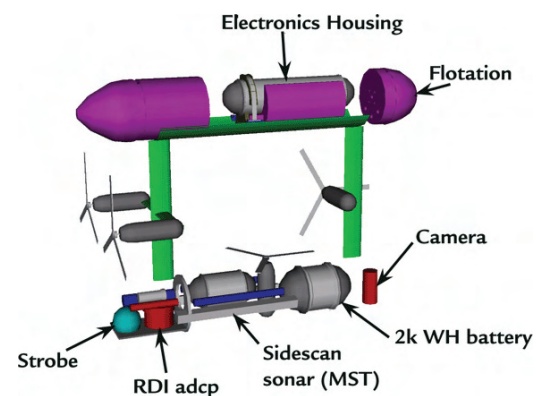
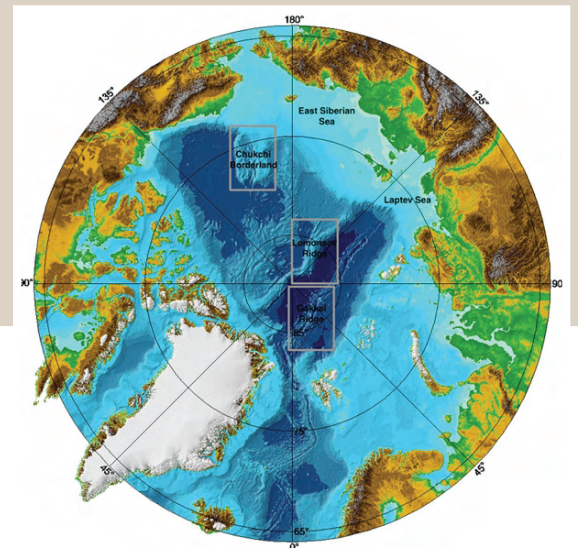
around the world wants to be the first to find them. The team is confident they will be the first to find them."

Once the robotic arm is built and tested, the team will integrate it on SeaBED. According to Roberts, "We will do some testing in our tank where the arm will autonomously grab a sample. We will also do some testing off the coast of Massachusetts or anywhere else WHOI is taking SeaBED for an expedition." Discussions are underway to integrate an arm on JASON II, a remotely operated vehicle from WHOI, to do some additional testing (<http://www.whoi.edu/marops/vehicles/jason/>). The team's ultimate goal is to be ready to go the Arctic

with a UMCP/SSL robotic arm on SeaBED and obtain samples from the hydrothermal vents. This is planned to happen in 2007.

If you would like to learn more about the University's involvement in this program, please visit the team's web site at: <http://robotics.ssl.umd.edu/astep/>

*Upper right, a map of the Gakkel Ridge, the region in the Arctic where the team will be going in 2007; lower right, the SeaBED AUV; photos courtesy of WHOI. Photos on front page courtesy of NASA.*





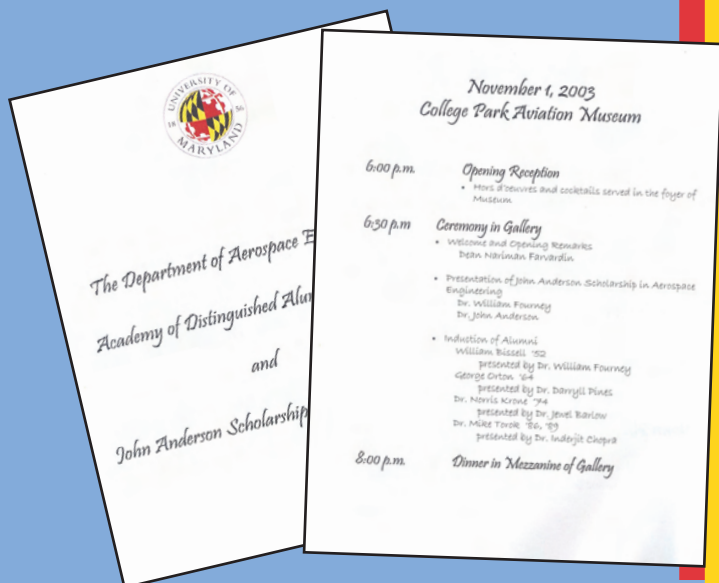
## Headline story from front page

told the attendees. "The four alumni we will be honoring tonight have demonstrated these same characteristics that subsequently have propelled the Department of Aerospace Engineering into one of the top-ranked programs in the country."

Department Chairman Bill Fourney introduced and presented Mr. Bissell; Dr. Darryll Pines presented Mr. Orton; Dr. Jewel Barlow presented his close friend Dr. Krone, and Dr. Inderjit Chopra presented his former student, Dr. Torok. Each alumni gave thanks to those in attendance and to their family friends, sharing fascinating, historical and often humorous stories and anecdotes about their times at Maryland and following graduation. Following the ceremony, dinner was served on the mezzanine of the gallery, overlooking the gallery and with a beautiful view of the airport.

The Academy of Distinguished Alumni was established in 1999 to honor University of Maryland alumni who have made significant contributions to the field of Aerospace Engineering. In the Fall of 1999, the Department of Aerospace Engineering inducted four graduates, as well as aviation pioneer Glenn L. Martin. This year's inductees join fellow Academy members Dr. Kevin Bowcutt, '82, '84, '86; Gary Curtin, Major General U.S. Air Force (Retired), '65; Dr. Michael Griffin, '77; and Bastion "Buz" Hello, '48. Dr. Griffin was on hand November 1st, to welcome his fellow inductees.

During the next year, a display of the Academy inductees will be constructed and prominently displayed in the Aerospace Department conference room, located in Glenn L. Martin Hall. The display will feature pictures and biographies of each inductee for visitors and students of the department to view.



Above, the 2003 Academy Inductees (l to r): George Orton, Dr. Michael Torok, Dr. Norris Krone, Jr., and William Bissell. Below, the ceremony attendees sit in the museum's gallery surrounded by items and reproductions of aviation's history. Bottom, Dr. Fourney and Dean Nariman Farvardin present William Bissell with a plaque and commemorative medallion, which each recipient received, honoring their induction into the Academy of Distinguished Alumni.



## Anderson Scholarship Raises Over \$16,000

On November 1, 2003, Dr. Fournery honored Dr. John Anderson and the John Anderson Scholarship in Aerospace Engineering at the Academy of Distinguished Alumni Induction ceremony. Since its inception in 1999, the scholarship fund has raised over \$16,000\* in Dr. Anderson's name, almost \$5,000 of which was received during the summer and fall of 2003.

The funds have been donated by alumni, faculty, friends, family and colleagues of Dr. Anderson, as well as corporations and other aerospace businesses. The fund now becomes endowed and therefore scholarship money can be awarded by Dr. Anderson and the department to students in the near future.

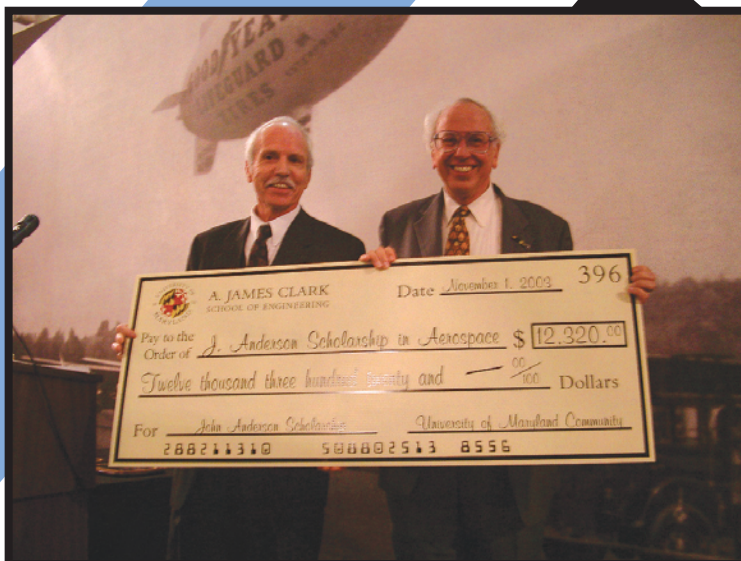
If you would like to contribute to the Anderson Scholarship fund,  
please contact Radka Zach at 301.405.8072

The Department and Dr. Anderson would like to thank the following contributors to the John Anderson Scholarship in Aerospace Engineering\*:

Sarah Allen Anderson  
Donald W. Ausherman  
Jewel Barlow  
Suresh Chander  
Christopher Cadou  
M. Kathleen Cruse  
Ramachandra Diwakar  
Simhaprasd S. Dodbele  
Marjorie G. Draper-Donley  
Karl T. Edquist  
Gregory M. Gatlin  
Edmund M. Glabus  
Elmer G. Gleske

Donald S. Gross  
Eric R. Hedlund  
Alexander L. Holder  
Edna O. Hokenson  
Yu Kao Hsu  
Shahid Khan  
Jennifer Lynn Knack  
Ajay P. Kothari  
Robert H. Korkegi  
Mary Kae Lockwood  
Michael Metzger  
Jack Minker  
Martin K. Minthorn

Christopher York Northam  
George F. Orton  
James Daniel Ott  
Clifford B. Smith  
Michael Stickler  
Naruhisa Takashima  
Christopher & Elaine Tarpley  
Anita L. Tracy  
Norman M. Wereley  
Michael E. White  
Jennings B. Wilson Jr.  
General Motors Corporation  
(\* As of February 1, 2004)



Department Chair, Dr. Bill Fournery presents Professor Emeritus, Dr. John Anderson with a check in the amount of \$12,320. This was the amount as of November 1, which had been raised for the John Anderson Scholarship in Aerospace Engineering. This presentation followed a rigorous campaign by the Clark School of Engineering appealing to alumni and friends of the School.



### Lee Acknowledged for Contributions

Dr. Sung Lee, Professor of Aerospace Engineering, has been selected to receive the T. H. H. Pian Medal from the International Conference on Computational & Experimental Engineering and Sciences. The medal will be awarded in July at the ICCES'04 conference in Madeira Portugal. Prof. Lee was selected for "his outstanding contributions to the development of mixed finite element methods for the analysis of shell structures in aerospace engineering."



### Wereley Awarded Best Paper Award

Dr. Norman M. Wereley, Associate Professor of Aerospace Engineering, was recognized for one of his most recent publications in the *AIAA Journal of Aircraft* entitled "Semi-Active Vibration Isolation Using Magnetorheological Dampers." This manuscript, first presented at the 2002 SPIE Smart Structures and Materials Symposium in San Diego, California, was recently awarded the 2002 ASME Adaptive Structures and Material Systems Best Paper Award.

This award was selected from a list of outstanding papers nominated by the organizing committees of seven conferences co-sponsored by the ASME Adaptive Structures and Material Systems Technical Committee. This represents a collection of over 500 conference papers from which the nominations were drawn, as well as any AIAA or ASME journal contributions in the topical area. Dr. Wereley, along with his two co-authors, Dr. Young-Tai Choi, and Dr. Young-Sik Jeon, were presented with the award at the 2004 SPIE Smart Structures and Materials Symposium in San Diego, California in March.



### Han at Maryland as Visiting Scholar

Dr. Yong O. Han is currently a Visiting Assistant Research Scholar with the Department of Aerospace Engineering. Dr. Han has been a professor in the School of Mechanical Engineering at Yeungnam University since 1980. He is working with Dr. Gordon Leishman in the Alfred Gessow Rotorcraft Center and will be at Maryland until September of 2004.

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### New Faculty



Dr. Robert Tolson is the University of Maryland Liaison Professor to the National Institute of Aerospace at Langley Research Center. Dr. Tolson began his duties during the 2003-04 academic year. He received his B.S. Aeronautical Engineering, and M.S. Physics, from Virginia Polytechnic Institute and State University; and his Ph.D. Engineering Mechanics, at Old Dominion University. Dr. Tolson has over forty years of research, management, and educational experience in aerospace science, engineering and technology. He has received the Medal for Exceptional Scientific Achievement, NASA's highest scientific award and has served as the Chief Scientist of the Langley Research Center.

During his early career, Dr. Tolson performed guidance, navigation and trajectory analyses for the Lunar Orbiter, Apollo and Viking missions. He was either a principal investigator or a co-investigator on several space missions including the Lunar Orbiter Selenodesy Experiment to map the gravity field of the Moon, the Viking Radio Science Team that determined atmospheric, gravitational and aerophysical properties of Mars, the Pioneer Venus Aeronomy experiment that explored the upper atmosphere of Venus, the GEOS-3 radar altimetry mapping of the terrestrial oceans. He was the originator of the Viking Phobos-Deimos Encounter Experiment during which the Viking Orbiters passed within 30 km of Phobos and 100 km of Deimos, thereby determining the mass of both satellites and providing images with resolution below 1 meter. Professor Tolson has other experiences analyzing and interpreting Earth and planetary observation data including the Nimbus-6 measurements of stratospheric ozone.

At NASA, Dr. Tolson acted as head of two research branches and a division level office that was focused on interdisciplinary research for aerospace vehicles including rotorcraft, hypersonic vehicles and large, flexible space structures. He has performed other management functions including Navigation Manager for the Viking Mission to Mars responsible for all navigation from the Earth to the landing on Mars. (continued on page 7)



## Astronaut Stephanie Wilson Speaks with Freshman Class



Students in ENAE 100 were treated with a guest lecture by NASA Astronaut Stephanie Wilson in early October. Prior to speaking with the class, Ms. Wilson toured the Space Systems Lab, met with Dean Nariman Farvardin and attended a reception to meet with faculty, staff and students, answering questions and talking informally with those in attendance.

During her time with the class, Ms. Wilson showed a video on the duties of today's astronauts, and spoke on numerous topics such as the astronaut selection process and training. She also spoke candidly with those in attendance about the Columbia Shuttle tragedy, the status of the space flight program, and the sacrifices an individual in the astronaut program makes to pursue their dreams.

Selected by NASA in April 1996, Stephanie Wilson reported to the Johnson Space Center in August 1996. Having completed two years of training and evaluation she is qualified for flight assignment as a mission specialist. She was initially assigned technical duties in the Astronaut Office Space Station Operations Branch. More recently, she served in the Astronaut Office CAPCOM Branch, working in Mission Control as prime communicator with on-orbit crews. Wilson is assigned to the crew of STS-120.

Ms. Wilson is a 1988 graduate of Harvard University with a Bachelors degree in engineering science, and in 1992 received her Master of Science degree in Aerospace Engineering from the University of Texas. Her appearance was arranged by Dr. Darryll Pines, Associate Professor in the Aerospace Department.

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Dr. Tolson was a Professor at George Washington University from 1991 through 2003. He was the PI for both the Windmill Experiment to characterize the aerodynamics in free molecular flow and the Termination Experiment to characterize transitional flow. Space flight experiences, include the Venus Magellan atmospheric science experiment to determine properties of the upper atmosphere of Venus. More recently he and his students were involved in real time operations during the aerobraking phase of the Mars Global Surveyor and the Mars Odyssey missions.

During these missions, real time analysis and interpretation was performed using accelerometer and other telemetry data to determine aerodynamic/atmospheric properties at aerobraking altitudes. Results of these studies were used by the project to make daily orbit maneuver decisions. Post flight analysis have been performed to characterize aerothermodynamic/aerodynamic/atmospheric properties for future atmospheric flights. Other space flight experiences include developing structural characterization methods for the Space Station culminating in the Shuttle-Mir structural dynamics experiment, MSX drag and mass spectrometer data analysis to improve drag prediction capability to enable maintenance of the orbiting object catalog during solar storms, Pathfinder entry analysis and post flight reconstruction, ARGOS satellite air glow data for real time atmospheric model updating, and Earth satellite drag data to identify anthropogenic carbon dioxide cooling of the upper atmosphere. Current spaceflight interest is in preparation for the entry phase of the Mars '03 mission.

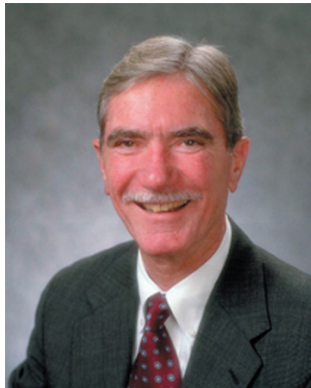
Professor Tolson's current research activities include recovering zonal winds on Mars from the Odyssey inertial measurement unit accelerometer data, the aerobraking phase of the Mars Reconnaissance Orbiter mission, studies under the Revolutionary Aerospace Systems Concepts program, and entry aerothermodynamics and flight mechanics studies for both the Mars Science Laboratory and the Phoenix mission. *(Information for this article was obtained from Dr. Tolson's website at <http://research.nianet.org/~rtolson/>)*

## Dr. Victor Lebacqz, Associate Administrator for NASA Aeronautics, Serves as Guest Lecturer

- written by  
Dr. Fred Schmitz

On the morning of November 20th, Dr. Victor Lebacqz was kind enough to come to the University of Maryland, College Park campus to give a guest lecture for our undergraduate aerospace honors course, 283H. Dr. Lebacqz, who was Acting

Associate Administrator of the Office of Aerospace Technology at the time, has recently been selected to become the new NASA Associate Administrator for the re-organized Aeronautics



Directorate, working directly for NASA Administrator, Mr. Sean O'Keefe.

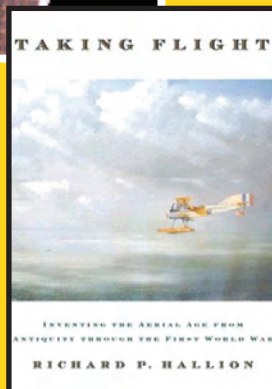
Besides giving the students a short overview on NASA's exciting new programs, Dr. Lebacqz conveyed to the class what it is like to work for and at NASA. Using his

own research career as an example, he reviewed some of his best accomplishments as a NASA researcher. Dr. Lebacqz also pointed out future developments for Space and Aeronautics. The students asked many questions, creating a good give-and-take dialogue, covering many topics of interest to possible future employees of the aerospace profession.

Dr. Lebacqz also made himself available for a discussion with the faculty at an early informal 'brunch meeting' in the Aerospace conference room. His straightforward manner, genuine interest in technology, and management philosophy left the UMCP Aerospace faculty quite impressed, confirming that he is a good choice to lead this Nation's civil aeronautics program.

## Distinguished Historian of Flying Visits Maryland Campus

Dr. Richard P. Hallion, a distinguished international authority on aviation, author of numerous award-winning books and formerly the U.S. Air Force Historian, conducted a Book Talk in November at the McKeldin Library. Dean of Libraries Charles Lowry welcomed the program attendees and Dean of the College of Arts and Humanities James Harris introduced his former student. A reception and book signing concluded the event.



Dr. Hallion teaches widely at American and foreign universities and defense colleges. He has gained flying experience as a mission observer in a wide range of civil and military aircraft, served as a NASA historian, and in 1974, joined the Smithsonian Institution as one of the founding curators of the National Air and Space Museum. He also has broad experience in museum development, historical research and management analysis and has served as a consultant to various professional organizations.

A 1970 graduate of the University of Maryland, Dr. Hallion, teaches and lectures widely and is the author of 16 books relating to aerospace history. His latest book, *Taking Flight: Inventing the Aerial Age from Antiquity Through the First World War*, has drawn critical praise from a number of prestigious publications including the *New York Review of Books* which wrote: "Richard P. Hallion, a distinguished historian of flying, has written what aspires to be the standard reference work on the subject. . . . *Taking Flight* represents the best-informed, most balanced aviation history now available in English. Hallion overlooks no important figure in Europe or the United States and deals expertly with key technical puzzles like wing-warping." (Information for this article was obtained from the McKeldin Library Press Release.)



## In Memoriam

### Clem Coleman Weissman, Former Professor

Clem Coleman Weissman, 85, an aeronautical engineer who retired in 1972 from the office of the chief of naval operations, died December 25 at Greenspring Village in Springfield, where he lived. He had Parkinson's disease.

Mr. Weissman's interests included seaplanes and flex-wing aircraft, helicopters and vertical takeoffs and landings. He taught aircraft design at the University of Maryland in the mid- to late 1980's. He also taught at the U.S. Naval Academy. He was born in Newark and graduated from the Georgia Institute of Technology. He served in the Navy during World War II. After the war, he settled in the Washington area and began work as an aeronautical engineer for the research division of the Bureau of Aeronautics.

From 1955 until 1959, he was aircraft development coordinator in the Office of Naval Research. From 1959 until he retired in 1972, he was assistant director for the technical analysis and advisory group of the office of the chief of naval operations. In the Tauxemont community of Fairfax County, where he lived for many years, Mr. Weissman was volunteer waterworks commissioner. He designed and built his home in Tauxemont. He was a founder of the wood shop at Greenspring Village and founder of a support group for those with Parkinson's disease.

Survivors include his wife of 62 years, Ruth Sazer Weissman of Springfield; four children, Michael Weissman of Santa Barbara, Calif., Jon Weissman of Granby, Mass., Steven Weissman of Koh Phangan, Thailand, and Ellen Weissman of Sandpoint, Idaho; and five grandchildren.

Speaking to the Congressman that day, Dr. Dave Akin discussed satellite refueling/repair mission and the SSL's Ranger Robotics mission; Dr. Mark Lewis spoke on next generation launch vehicles and Maryland's URETI program; and Dr. John Baras presented space/terrestrial hybrid communication networks.

"America's space program needs a visionary goal, such as the moon and Mars exploration missions outlined by President Bush to capture the imagination of the American people and to inspire new generations of scientists, engineers and mathematicians," said Congressman Bartlett, who has a Ph.D. in human physiology and holds 20 patents. "We must increase the number of America's best and brightest studying and entering technical fields in order for the United States to maintain America's technological superiority, ensure our national security and military superiority and to promote economic prosperity in the 21st Century."

Congressman Bartlett is serving his sixth term and is an 11-year veteran of the House Science Committee and the Subcommittee on Space and Aeronautics. Dr. Bartlett earned both a Masters and Doctorate in human physiology from the University of Maryland. As Director of its Space Life Sciences Division at Johns Hopkins Applied Physics Lab (APL) between 1962 and 1967, he

supervised a team of 30 scientists and engineers on projects for NASA's Mercury, Gemini and Apollo missions to land a man on the moon.

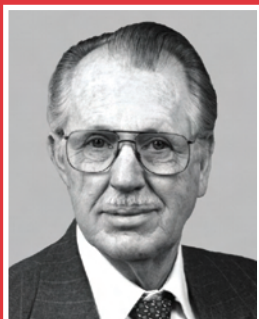


### Congressman Bartlett Visits Department

Congressman Roscoe G. Bartlett (R), visited the campus in August 2003 to learn more about space science at the University of Maryland. The campus community spoke and demonstrated to Mr. Bartlett about research being performed in the fields of aerospace, astronomy, meteorology and physics. Congressman Bartlett received a presentation from each of these disciplines, concluding with a tour of the Neutral Buoyancy Tank and Space Systems Lab.

*Verification of information for this article was obtained from the office of Congressman Bartlett.*

*Photo above courtesy of the Cosmic Ray Physics Group and Dr. Eun-Suk Seo, pictured above with Mr. Bartlett and staff in the Cosmic Ray Research Laboratory.*





Pictured left to right, Erin Halferty, Alice Ryan, Anubhav Datta, Sadie Michael, and Suneel Sheikh

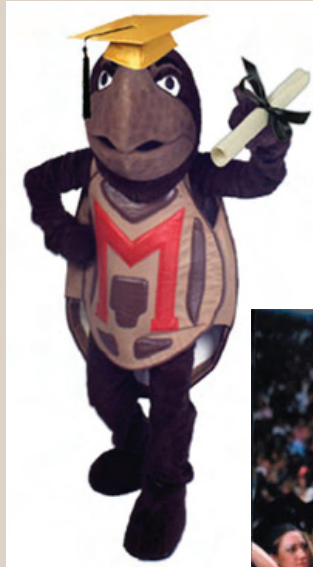
**Erin Halferty**, a senior undergraduate student, was invited and recognized at the New Student Welcome Ceremony held last August. The Ceremony was held on McKeldin Mall and is at the beginning of each fall semester. Erin was one of five University students showcased from a range of colleges and activities. She was highlighted to those in attendance as an exemplary student who has achieved both academically and otherwise, illustrating to the entering class an example of the success they may achieve during their time on campus. Erin is currently President of Tau Beta Pi, and was chair of the Mid-Atlantic AIAA Regional Conference in 2003.

**Alice Ryan**, a senior undergraduate student, has received the 2003 C. Norman Eckbert Outstanding Engineering Student Award from Maryland Beta Chapter of Tau Beta Pi. This award is based upon merit, service to the Chapter, University campus and community, honors and awards, future career plans and a personal statement. Alice was presented with a \$ 400 award last December.

**Anubhav Datta**, doctoral candidate, and Dr. Inderjit Chopra received the Best Paper Award in the AHS Dynamics Session for the second consecutive year. They received the award at the 2003 AHS Forum 59. Their paper was titled **Validation of Structural and Aerodynamic Modeling Using UH-60A Flight Test Data**. This paper decoupled the physics of rotor aerodynamics and structural response in high-speed forward flight. A copy of their paper can be found at: <http://www.vtol.org/pdf/dyna59.pdf>

**Sadie Michael**, masters student, received the Tau Beta Pi Fellowship for the 2003-04 academic year. This fellowship is in the amount of \$10,000. All Tau Beta Pi Fellowships are awarded on the competitive basis of high scholarship, campus leadership and service, and promise of future contributions to the engineering profession. The Fellowship Board of Tau Beta Pi, the engineering honor society, announced the selection of 35 young engineering graduates from 195 applicants for graduate fellowships in April 2003. Eighteen of this year's winners received cash stipends of \$10,000 for their advanced study. Sadie graduated from the University of Maryland—College Park as the top student in aerospace engineering last May. Her own research project, funded by the Women in Engineering research program, resulted in two conference papers. She was a semifinalist to present at the national conference for the Society for the Advancement of Material and Process Engineering in May. Sadie will graduate in August 2004.

**Suneel Sheikh**, doctoral candidate, has received a AIAA Foundation Graduate Student Award. The Guidance, Navigation, and Control Award is presented to promote the areas of guidance, navigation, and control by rewarding promising graduate students who have demonstrated interest in one or more of these areas. Suneel's research focus is the investigation into the use of X-ray pulsars for spacecraft navigation. He was presented with the award in August, 2003 at the AIAA Guidance, Navigation, and Control in Austin, Texas.



# Summer & Fall Graduation



## Summer 2003

### **Bachelor of Science**

Charity E. Asuquo  
Joseph K. Conroy  
Drew Hykin

### **Master of Science**

Mustapha Chehab	Chia-wei Kuo
Pascal F. DeMarmier	Jacob S. Park
Walter R. Eppler II	Julien Trihan
Shaju John	

### **Doctor of Philosophy**

Christopher M. Mairs  
*Aerodynamic-Structural Model of Offwind Yacht Sails*; Advisor, Dr. Jewel Barlow

Hun Park  
*A Nonlinear Solid Shell Element Formulation for Analysis of Composite Over Homogeneous Metallocene Catalysts*; Advisor, Dr. Anthony Vizzini

Paul D. Samuel  
*Helicopter Transmission Diagnostics Using Constrained Adaptive Lifting*; Dr. Darryll Pines

Joseph R. Schultz  
*Stability of Flexible Spacecraft During Shallow Aeromaneuvers*; Advisor, Dr. Darryll Pines

## Fall 2003

### **Bachelor of Science**

Raphael T. Austin	Alexandra B. Langley
Sandra Ghattas	Mehdi C. Nematollahi
Aubrey L. Goodman	John Ruzala
Peter Hughes	Eric S. Samson

### **Master of Science**

Jayasimha Atulasimha  
Daniel Chavez-Clemente  
William Facey

### **Doctor of Philosophy**

Rendy Po-Ren Cheng  
*A High-Order, Linear Time-Invariant Model for Application to Higher Harmonic Control and Flight Control System Interaction*; Advisor, Dr. Roberto Celi

Jinwei Shen  
*Comprehensive Aeroelastic Analysis of Helicopter Rotor with Trailing-edge Flap for Primary Control and Vibration Control*; Advisor, Dr. Inderjit Chopra

Jayanarayanan Sitaraman  
*CFD Based Unsteady Aerodynamics for Rotor Aerobatic Analysis*; Advisor, Dr. James Baeder





Astronaut Stephanie Wilson visited the Department in Fall 2003 to speak to ENAE 100, The Aerospace Profession. Right, Ms. Wilson answers students' questions about her time during the application process and subsequent training in Houston, Texas. Above, Ms. Wilson proved to be a popular person, providing photo opportunities and signing autographs. (See corresponding article on page 7)



The Aero Graduate/Faculty/Staff intramural football team won their entire league this past fall. The team dedicated their season to Swaminathan Gowrisankaran - a former team member who drowned last summer.





Above, in October, University President C. Dan Mote held his annual welcome reception for new Banneker/Key students. This is a major event in the President's Colloquium series and is held at he and Mrs. Mote's home each fall. This year, the Aerospace Department has three freshman Banneker/Key students, Holly Schurter (on left), Zakiya Tomlinson (on right) and Prasa Kutty (not pictured), all of whom are from the state of Maryland. The Banneker/Key Scholarship, awarded to the highest achieving entering freshman from Maryland and across the nation, covers the full cost of tuition, mandatory fees, room and board, and a book allowance for four years.

Below, Carol Stewart present Suneel Sheikh with the 2003 AIAA Foundation Guidance, Navigation, and Control Graduate Award from AIAA's Honors & Awards Liaison on August 12, 2003 at the AIAA Atmospheric Flight Mechanics Conference, Austin, Texas. Dr. Darryll Pines, Suneel and Suneel's wife, Kristen, enjoy dinner at the conference.



Right, last fall, the Alfred Gessow Rotorcraft Center celebrated another AHS International Helicopter Design Competition win. Pictured are team members, faculty advisors, Dean Farvardin and Mrs. Elaine Gessow.

Right, the ASTEP team out on the ice just off the coast of Woods Hole: Stephen Roderick, Dave Hart, Walt Smith, Brian Roberts, Dr. Dave Akin, Dr. Ella Atkins, Jean-Marc Henriette, Dr. Craig Carignan, Dr. Rob Reves-Sohn (WHOI). (See front page article)



# Homecoming Events Celebrate Anniversary of Flight

University of Maryland alumni, students, family and friends were invited to celebrate the 100<sup>th</sup> Anniversary of Flight with the Aerospace Engineering Department at Homecoming. Under the Family Tent, interactive and fun activities about flight took place to educate and excite children of all ages. Titled 'Up, Up and Away – Celebrate 100 Years of Flight,' children's activities included Make Your Own Windmill, Make a Paper Rocket, Build a Four-Wing Paper Boomerang, a Dr. Seuss book reading of 'There's No Place Like Space,' and floor puzzles of spacecraft. A coloring contest was also held with a copy of Dr. Seuss' book awarded to the winners of each age group.



Pictured that day are Academic Coordinator, Nicole Roop and Aerospace students (l to r) Andrew Howard, Sara Corbitt (with son Issac), Ethan Eagle, Kristen Kirk, Antonio Arancibia, Jeffrey Marquart, Christina Ferrari, and Dan Proffen.



## Forum Comes to Maryland

Make plans now to attend the AHS International 60<sup>th</sup> Annual Forum & Technology Display "Vertical Flight Transformation" which will take place June 7-10, 2004, at Baltimore, Maryland's Inner Harbor. University of Maryland faculty, staff, and students will be attending the Forum, welcoming Maryland alumni back to the 'Old Line State.'

The Department will be hosting a University of Maryland Alumni Social on Tuesday, June 8 at approximately 7:30 p.m. following the AHS exhibits and hall reception. At this social, alumni can connect with students, faculty and each other, and we will be celebrating the 23 years of excellence demonstrated by the Alfred Gessow Rotorcraft center.

Watch your mailbox and in box for more information, or contact Nicole Roop at 301.405.8959 or [nroop@umd.edu](mailto:nroop@umd.edu).

***See you in June!***





# Alumni Association Awards Gala

## Aerospace Alum To Be Honored

alumninotes

**Ryan Leo, '04**, has received a Learn to Fly scholarship from the American Institute of Aeronautics and Astronautics (AIAA) Evolution of Flight campaign. These scholarships enable promising aviation students (ages 16–25) to begin or continue the pursuit of their private pilot license.

To recognize Orville and Wilbur Wright's aero-



nautical achievements, AIAA, in partnership with Cessna Aircraft Company, awarded 60 Learn to Fly scholarships to the next generation of pilots and visionaries. Award winners received a \$1,000 scholarship, which will be administered through a Cessna Pilot Center in the recipient's local area.

In addition to the monetary award, winners received a complete Cessna private pilot multimedia training system from Cessna Aircraft Company. This computer-based program is an integrated system that combines flight-training material with accompanying flight lessons in a sequence designed to provide the best pilot training possible.

**The Fifth Annual Alumni Association Awards Gala:**

### *Celebrate Our Shining Stars*

will be held on April 17, 2004, from

6:00PM to 11:00PM

at the UMUC Inn

and Conference

Center, 3501

University Blvd.

East, Adelphi,

MD. The evening

will start with a

6 p.m. Cocktail

Reception, preceding a

7 p.m. Dinner and Awards

Ceremony. After the Awards

Ceremony, there will be music

and dancing in the Grand

Ballroom.

At this event, aerospace

alumni, Norris Krone, '55, '74

Ph.D., will be honored as the

2004 A. James Clark School

of Engineering Distinguished

Alumnus. This follows his

induction into

the Aerospace Distinguished Academy of Alumni last fall.

The University of Maryland

Alumni Association invites you

to celebrate our shining stars—an

opportunity to

recognize the

remarkable

achievements

of 18 individ-

uals and

their

impact

on society.

Awards will be given by the

alumni association as well

as participating colleges and

schools. Join us for this grand

affair to congratulate these

well-deserving alumni.

**This is a black tie event**

**and RSVP is required.**

**Contact Linda Roth at**

**301.403.2728**

**ext. 22 or**

**800.336.8627.**



DR. NORRIS J. KRONE, JR.





# What I Did on My Summer Vacation

- written by Kevin Eisenhower

Watching the Mars Exploration Rovers launch from beautiful Cape Canaveral, working at the NASA Kennedy Space Center, presenting to Center Director Kennedy in person, living on Florida's wonderful beach, gaining tremendous insight on life science in space; these are only a few of the great memories I have from my internship in the Spaceflight and Life Sciences Training Program (SLSTP). My experience last summer taught me oodles about NASA, space-related engineering, teamwork, biotechnology, and even ecology. SLSTP is an unparalleled opportunity for anyone interested in furthering their career in the aerospace industry.

SLSTP takes place every summer for six weeks at the Kennedy Space Center (KSC), which is absolutely the best place to work - on Earth! Approximately 30 to 40 outstanding undergraduate students are selected to the program, which is actually called a "traineeship" because, rather than receiving a stipend, the program pays for students' travel, living, and housing expenses. The program aims to educate and develop its participants in leadership, communication, professional etiquette, as well as academics. This is accomplished through learning modules, state-of-the-art field and laboratory research, lectures from prominent NASA scientists, and oral presentations.

Other program activities include tours of KSC facilities, social events, and great networking opportunities. Most program activities are coordinated by the NASA Spaceflight and Life Sciences Academic Partner Alliance (NSAPA) and academic partner Tuskegee University, who



also provide wonderful personnel, and reward participants six academic credit hours upon completion of their research.

What I enjoyed most about SLSTP is the people I met and connections I made. Living and working with students who have the same interest and enthusiasm about NASA and space research as me was unique and invigorating. I will always have bonds with my colleagues and mentors in the Biomedical Research Laboratory where I worked. SLSTP also fosters diversity and promotes collaboration amongst its participants, aspects I can truly appreciate being an engineering student at the University of Maryland.

I encourage any interested students to find out more information at <http://slstp.nasa.gov>. I am sure your experience will be unequaled and unforgettable.



**AEROCONTACT** is published several times a year for alumni and friends of the Department of Aerospace Engineering at the A. James Clark School of Engineering.

Your alumni news and comments are welcome. Please send them to:

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[www.enaе.umd.edu](http://www.enaе.umd.edu)

Department Chair: Dr. William Fournеу



#### CALENDAR OF EVENTS

- |             |  |
|-------------|--|
| April 14    | A. James Clark School of Engineering Honors and Awards Ceremony<br>7:00 p.m., Stamp Student Union                                  |
| April 17    | 5th Annual Alumni Association Awards Gala - <b><i>Celebrate Our Shining Stars</i></b><br>6:00 p.m., UMUC Inn and Conference Center |
| April 24    | Maryland Day, 10:00 a.m. - 4:00 p.m.   |
| May 20      | Spring University Commencement<br>7:00 p.m., Comcast Center  |
| May 21      | Engineering School Commencement<br>1:00 p.m., Cole Field House   |
| June 7 - 10 | AHS International Forum<br>Baltimore, MD   |



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