Float'n Illini Get Another Crack at Proving Zero-G Hypothesis

The Float'n Illini, a group of students who are game to subjecting themselves to an airborne roller-coaster ride in a KC-135 to achieve microgravity, got another chance to rerun their fluids experiment in March 2000.

This year's group comprised 15 students, 10 of whom are from AAE. They are advised by Professor Henrique Reis of General Engineering. Mark Wallace, a junior in AAE and the fluids experiment project leader, explained what the Float'n Illini did during spring break 2000 at the Johnson Space Center in Houston, Texas: "We were doing two experiments this time. (The fluids experiment) was a continuation of last year's project, which was looking at the flow characteristics of immiscible fluids in microgravity. We basically flew the same experiment again, but this time we modified the equipment and the injection parameters to fix some of the problems we experienced last year."

"(The sonochemistry experiment) was looking at how a plume formed by ultrasonic cavitation changes shape under different gravities," he said. "(The second group) was initially going to look at some of the chemistry that ultrasonic cavitation can drive, but the reaction they had designed for was not going to work. This was discovered too late in the process for them to be able to look at other reactions, so they decided to look at the shape of the plume. Their hypothesis was that the plume would get larger under microgravity and smaller in two-gravity."

Senior Jim Knohl and freshman Amanda Kinney in front of the Float'n Illini's microgravity experiment on immiscible fluids.

Two groups of four students each flew in NASA's KC-135, which is used primarily for training and short-term microgravity experiments. Flyers were Melissa Bradley, Amanda Kinney, Jim Knohl, Joannah Metz, and Jenny Stuart (all from AAE); Willie Hedrick (LAS); Graeme MacDonald (ECE / Astronomy); and Nidhi Patel (Physics). The rest of the group acted as ground crew: Chris Dotson, Johnson Liu, Ann Peedikayil, Larry Skorski, and Mark Wallace (all from AAE); Kevin Lewis (Life Sciences, Pre-Vet); and Jim Waldemer (Chemistry).

The students also got their story told on the local public radio and television station, WILL. Wallace explained: "As part of our participation, NASA encourages each team to have a journalist along, . . . (who) gets to train and fly with the team. Todd Gleason was our journalist this year." Gleason is a media / communications specialist with the College of Agricultural, Consumer and Environmental Sciences (ACES). He released a two-minute video featuring the Float'n Illini from the College of ACES, which aired on 170 TV stations nationwide through a daily agricultural program, called AgDay, out of South Bend, Indiana. Gleason said he is in the process of developing a half-hour documentary on the trip for airing on public television.

The Float'n Illini first competed in the Reduced Gravity Student Flight Opportunities program in March 1999. Wallace said the team will not submit a proposal for August 2000 but plans to compete again in March 2001. The program is sponsored by NASA and administered by the Texas Space Grant Consortium.

CLASS NOTES

1960s

Edward G. Wilson, '64, retired as a director of engineering at McDonnell Douglas in April 1997. He has since been doing some limited consulting in aircraft structural technology and taking care of his wife, Janet (née Williams, '62 Commerce), in her recovery from cancer.

Ron Schuh, '66, recently moved to Maryland when Southwest Airlines opened its new pilot base at Baltimore / Washington Airport. Schuh, a captain at Southwest, has been with the company for 19 years. Before that, he was in international marketing for General Dynamics, where he was responsible for marketing the F-16 fighter in the Middle East, and for Canadair, for whom he was marketing the Challenger business jet in Europe and Africa. He retired recently from the U.S. Air Force Reserves, where he flew fighters and recruited cadets for the Air Force Academy.

Dale Frank, '69, is a senior aerodynamicist at DaimlerChrysler in Detroit, Michigan, working in production vehicle applications with a specific emphasis on competition vehicles. He writes that after graduation, he was hired into Chrysler in its Institute Program, which resulted in a master's degree in mechanical engineering from the University of Michigan, along with internal training in automotive engineering. Frank joined Chrysler's automotive aerodynamics group, where he remained for 10 years. "We formulated the many processes for applying aerodynamic test and development to automotive design," he said. He joined American Motors in 1979, performing much the same work for this company. During this time, he also began consulting in aerodynamic development for all forms of motorsports. He became part of Chrysler again in 1989 after the company acquired American Motors. Frank has been on the Society of Automotive Engineers' Road Vehicle Aerodynamics Committee for many years. This international body sets the procedures for the standards that are currently being used in the global development of new automotive products. He says that he was fortunate to receive his training in aerodynamics just as the technology was in its infancy in the automotive industry. Frank credits Prof. Ormsbee for "assisting me in pursuing low-speed incompressible aerodynamics . . . in a time when most students were thinking orbital insertions and supersonic flows."

Steve Nagel, '69, was on campus in February 2000 to present an update on the NASA space program. He spoke to students and faculty on the current status of the International Space Station and the future of human space flight. Nagel moved to NASA's Aircraft

Herman Honored with Warburg Prize

Kenneth Herman, '57 (Division of Special Services for War Veterans), was one of seven Allied Air Force veterans honored with the Eric M. Warburg Prize on June 26, 1998 in Berlin, Germany. The other honorees included veterans from Australia, France, South Africa, and the United Kingdom. The 1998 Warburg awards were presented by the Atlantik-Brücke (Atlantic Bridge) on the occasion of the 50th anniversary of the Berlin airlift. Herman flew a total of 190 trips from West Germany to Berlin, carrying coal for the Berliners. He served with the U.S. Air Force for 24 years, retiring with the rank of colonel.

The Warburg prize was created in 1988 to honor Eric Warburg, a member of Hamburg's oldest and best-known families, who was driven out of Germany by the Nazis and returned there in 1945 as a lieutenant colonel in the news service of the American air force. From then on, he worked to create a bond between Germany and the United States. The prize is given out once every two years; other recipients have included former Secretary of State Henry Kissinger and former Chancellor of the Federal Republic of Germany, Helmut Kohl.

The Atlantik-Brücke is a private, nonpartisan, and not-for-profit organization founded in 1952 by German chancellors Konrad Adenauer and Helmut Schmidt and other German statesmen and leading figures from industry and banking. It serves as a point of contact between politicians, business leaders, journalists, and academics on both sides of the Atlantic.

Roman Herzog, president of the Federal Republic of Germany, greets alumnus Kenneth Herman (Colonel, U.S. Air Force retired) on the occasion of the 50th anniversary of the Berlin Airlift. Looking on is Squadron Leader Alan D. B. Smith of the Royal Air Force (retired). Herman was one of seven Allied veterans who were honored with the 1998 Eric M. Warburg Award.

FACULTY NEWS

Lawrence Bergman was appointed technical editor of the Transactions of the American Society of Mechanical Engineers, *Journal of Vibration and Acoustics*. His appointment, which began January 1, 2000, will run for five years.

John Buckmaster, **Rodney Burton**, **Bruce Conway**, **Philippe Geubelle**, and **John Prussing** were all included in the fall 1999 listing of teachers ranked as excellent by their students. Faculty members who were nominated to the spring 2000 list included **Philippe Geubelle**, **Ki Lee**, and **John Prussing**.

Three AAE faculty members were recipients of the Engineering Council Award for Excellence in Advising for 2000: **Bruce Conway**, **John Prussing**, and **Scott White**. They and selected outstanding students were recognized at a banquet sponsored by Andersen Consulting at the Holiday Inn in Urbana on February 28.

Undergraduate engineering students selected **Philippe Geubelle** as recipient of the 2000 Everitt Award for Teaching Excellence. Established in 1968 to honor retiring Dean William L. Everitt, this prestigious faculty award honors engineering faculty members for their outstanding undergraduate teaching. Geubelle received the award at the College of Engineering's awards convocation on April 7.

N. Sri and **Beth Sandore Namachchivaya** became first-time parents on July 25, 1999, with the birth of their daughter, Anura Androa. The baby weighed 7 lb 2 oz.

Allen Ormsbee, '46, has begun his second term as secretary of the Accreditation Board for Engineering and Technology (ABET). The accreditation board is a federation of 28 engineering and professional technical societies, which has provided quality assurance of engineering education since 1932. Ormsbee and other officers for 1999-2000 were installed at a ceremony during the annual meeting of ABET's board of directors in October 1999. Ormsbee is a professor emeritus at UIUC. He retired in 1999 as professor and chair of the Aerospace Engineering Department at Embry-Riddle Aeronautical University in Daytona Beach, Florida, where he had worked since 1995.

A paper by **John Prussing** and **Jang-Won Jo** (PhD '97), "*Necessary and Sufficient Conditions for Optimal Control Problems with Scalar Terminal Constraint*," was selected as the Best Paper presented at the AIAA / AAS Space Flight Mechanics meeting that was held in February 1998 in Monterey, California. Prussing was presented the award at the AIAA / AAS Astrodynamics Specialist Conference in Girdwood, Alaska, in August 1999.

Operation Division in 1996, where he performs duties as a research pilot. He has been working to modify the inlets on T-38s to increase take-off and low-speed performance. Nagel retired from the U.S. Air Force and the Astronaut Office in 1995 to assume the position of Deputy Director of Operations Development, Safety, Reliability, and Quality Assurance at NASA's Johnson Space Center. Among other duties, he has been a test pilot at Edwards Air Force Base and a NASA astronaut, flying on shuttle missions at various times as a mission specialist, pilot, and commander.

1970s

James Kessler Jr, '71, retired 7 years ago from McDonnell Douglas, where he worked for 32 years as a rocket scientist. He now volunteers with the University of Illinois Extension program as a master gardener.

Carroll Slusher, '72, was appointed in February 1999 as vice president for the North American operations of Insituform Technologies, Inc. He joined the company as director of North American pipe rehabilitation in 1997. Before that, he spent 25 years with General Electric Company, beginning as a field engineer and ending his career at GE as a regional manager. Insituform Technologies is a worldwide provider of proprietary, trenchless technologies to rehabilitate and improve sewer, water, gas, and industrial pipes.

Pam Van Blaricum, '72, MS '74, PhD '77, was on campus in June 1999 for freshman orientation. Her daughter is a freshman in civil engineering.

Kenneth Atkins, PhD '74, was awarded NASA's Outstanding Leadership Medal for his management of the space agency's Stardust mission to a comet. Atkins has managed the project from its conception, design, assembly, launch, and current flight of the spacecraft to Comet Wild 2 to capture a sample of material for return to Earth in 2006. NASA Administrator Daniel Goldin presented the medal to Atkins in June 1999.

Saeed Farokhi, '75, has been named a fellow of ASME International (American Society of Mechanical Engineers). Farokhi is a professor in the aerospace engineering department of the University of Kansas. The grade of "fellow" is conferred upon an ASME member with at least 10 years of active engineering practice who has made significant contributions to the field. Farokhi is also a member of the American Institute of Aeronautics and Astronautics, American Physical Society, Society of Automotive Engineers International, and American Society for Engineering Education.

Michael Micci, '75, MS '77, visited the campus in March 1999 for a two-day workshop on rocket propulsion. Micci is a professor in the Department of

Aerospace Engineering of Pennsylvania State University.

Karen Green Mackall, '76, and her husband, Dale Mackall ('77, Engr. Physics), were endorsed by Elgin Community College (ECC) as its nominees for the 1999 Distinguished Alumnus Award of the Illinois Community College Trustees Association (ICCTA). The award recognizes the success stories of Illinois's community college graduates who received an associate degree, certificate, or diploma before June 1993. The Mackalls both graduated from ECC in 1973, she in science and he in electronics technology. Karen Green Mackall spent her three years at UIUC as a cooperative engineering student, alternating her time between the university and NASA Dryden Research Center at Edwards Air Force Base in California. She went on to work for NASA Dryden after graduation. There, she is facility manager for the flight loads laboratory. The Mackalls were honored at an ICCTA awards banquet in June 1999, together with award winners from other community colleges.

Bruce Theron Goodwin, MS '78, PhD '82, gave a presentation recently on campus on the symbiotic development of nuclear weapons and supercomputers. Goodwin is the B Division and B Program Leader at the Lawrence Livermore National Laboratory in Livermore, California. He returned to campus on April 13 to receive AAE's 2000 Distinguished Alumnus Award (*see related story*).

1980s

Robert King, '86, is now an assistant professor in the Department of Aerospace Engineering at Mississippi State University. King received his master's and doctorate from the Naval Postgraduate School, Monterey, California.

Wayne Rezzonico, '86, and Susan Sass-Rezzonico ('87 LAS) are the parents of a son, Joseph James, born October 16, 1999. Joey joins his big brother, Anthony, at home. Rezzonico is a major in the U.S. Air Force, currently assigned as Operations Officer for the 7th Space Warning Squadron at Beale Air Force Base, California.

Terry Jaggers, '87, received a master's of science degree in June 1999 in natural resource strategy from the Industrial College of the Armed Forces, National Defense University, Washington, D.C. The guest speaker at the graduation ceremony was Republican senator and recent presidential hopeful John McCain of Arizona, an alum of National Defense University. Jaggers was employed at the Kennedy Space Center after graduating from Illinois. He then worked for the Department of Defense (DOD) as a logistics and computer coordinator for the Armed Forces. He and

Harry Hilton Devotes 50 Years to AAE

Harry Hilton (PhD '51) walked the halls of the Transportation Building when the Department of Aeronautical and Astronautical Engineering was just in its infancy. He taught with the likes of H. S. Stillwell, Robert McCloy, and **Allen Ormsbee** ('46), names that AAE still remembers today.

Hilton's career in AAE began in 1949, when he was here on campus completing his PhD in theoretical and applied mechanics, with a minor in mathematics. Currently a professor emeritus in AAE and senior academic lead for computational structural and solid mechanics at the National Center for Supercomputing Applications, he reached the 50-year milestone on September 1, 1999. He continues to teach graduate AAE courses.

Over the course of five decades at the Urbana-Champaign campus, he has held various departmental and college positions. He was the AAE department head from 1974 to 1985. During the summers of 1989–90, he was an assistant dean of engineering. He retired in August 1990 but that didn't mean the end of career and the beginning of leisure for the transplanted New Yorker. If anything, he may have more time now to refine his pursuits. He is still actively involved in teaching, advising, research, and public and professional service. He is presently working on an advanced graduate book on viscoelasticity, his area of expertise, with **Sung Yi** (PhD '92) of the Nanyang Technological University in Singapore.

He remains committed to professional and public service. On campus, he is a member of the UIUC Senate, of the policy committee of the local chapter of American Association of University Professors (AAUP), and of Sigma Xi, the national research honor society. Hilton is a director of Sigma Gamma Tau, the national aerospace honor society; faculty adviser to two student organizations; and a faculty friend in a residence hall. He is a member of several international and national committees that organize conferences, including the Structures Technical Committee of the American Institute of Aeronautics and Astronautics (AIAA). Off-campus, he is similarly actively involved—he is a steering committee member of the Champaign County chapter of the American Civil Liberties Union, treasurer of the board of directors for A Woman's Fund Foundation, and past member and chair of the City of Champaign Human Relations Commission.

Alumnus Establishes Stillwell Scholarship

Thanks to the generous gifts of an AAE alumnus (who wishes to remain anonymous), the H. S. Stillwell Scholarship in Problem Solving has been established. This scholarship is named for H. S. "Shel" Stillwell, founder of the AAE Department. Professor Stillwell served as the department head from 1944 until his death in 1976. The endowment is a tribute to Professor Stillwell and the role that he played as a mentor to students.

Scholarship recipients are AAE students with a "B" average or better entering their junior year. Preference is given to students who exhibit good problem-solving skills.

The first recipient is **Mark Wallace** from Skokie, Illinois. Wallace is an AAE junior who is also minoring in history. In addition to the usual course load, he is very active in extracurricular engineering projects and organizations. For the past two years, he has been a team member of the Float'n Illini, this year serving as the team's president and principal investigator of the fluids project. Wallace is very active in the Illini Space Development Society (the local chapter of the National Space Society) and is a writer and an editor for the *Illinois Technograph*. In fall 1999, he began working with Professor Rod Burton and the Electric Propulsion Group. His research work will continue this year when he spends six-months at JPL as a co-operative engineering education student.

Mark Wallace is the first recipient of the H. S. Stillwell Scholarship in Problem Solving, established through the gift of an alumnus. Presenting the award is Michael Bragg, AAE's department head.

his family now reside in Burke, Virginia, where he continues to work for DOD.

R. Timothy Kanoy, '87, was featured in a story in the *Mascoutah Herald* on October 28, 1999. Members of the media were invited to a refueling mission of the Air National Guard 126th Air Refueling Wing, which had relocated from Chicago to Scott Air Force Base, Illinois. Kanoy co-piloted one of the two KC-135 Stratotankers deployed during the exercise. Their mission was to refuel four F-16s above Macomb, Illinois, and an RC-135 forty miles north of Omaha, Illinois. Kanoy has been a pilot for almost nine years. The story describes the refueling operation, highlighting the precision and inherent dangers involved. [Some interesting information included in the story: Seven tons of fuel can be carried in each of the tanker's "cells," fashioned of nylon fabric less than 1/16" thick. A KC-135 tanker can pump more fuel through its boom in eight minutes than a gas station can pump continuously in 24 hours.]

Daniel Jensen, '88, completed a six-month special assignment in October 1999 in Derby, England with Rolls-Royce Derby. Jensen is a senior project engineer with Rolls-Royce Allison in Indianapolis, Indiana. He was the first American chosen to work as a technical assistant to Phil Ruffles, Director of Engineering and Technology for Rolls-Royce and a member of the Rolls-Royce board of directors. During his assignment, Jensen helped Ruffles in preparing government, academic, and strategic engineering papers. He is now working in the mechanical systems team on the Rolls-Royce AE3007 turbofan, which powers the Embraer ERJ-135 and ERJ-145 regional jets.

Erik Johnson, '88, MS '93, PhD '97, is an assistant professor of civil engineering at the University of Southern California in Los Angeles. His teaching and research areas are structural control, structural health monitoring, and random vibration.

Brian Kamm, '88, and Holly Jepson were married on October 22, 1999, in Belleville, Illinois. Kamm is a captain with Skywest Airlines; she is a flight attendant with Skywest. They reside in Vancouver, Washington.

Curt Zimmerman, '88, MS '94, and Kathleen Skemp were married on August 14, 1999, in Dubuque, Iowa. Zimmerman is an engineer at NASA's Marshall Space Flight Center in Huntsville, Alabama. His wife is currently employed as assistant state's attorney of Morgan County in Decatur, Alabama.

Tonia Timlin, '89, is a physics and mathematics instructor at Lake Land College in Mattoon, Illinois. She teaches her students physics and math concepts and manipulative skills, as well as providing them with lab experiments that reflect problems in everyday life so that they can apply their knowledge and use appropriate technology to analyze these problems.