

## Awards, *continued*

ing. The foundation established the fellowship program to allow “the nation’s most promising professors to pursue science and engineering research early in their careers with few funding restrictions and limited paperwork requirements.” Each year, the presidents of 50 universities nominate two professors each from their institutions for this recognition.

Johnson is a member of the American Institute of Aeronautics and Astronautics, and an associate member of the American Society of Mechanical Engineers (ASME) and the American Society of Civil Engineers (ASCE). At ASCE, he is a member of the committees on probabilistic methods, dynamics, dynamics task group on structural health monitoring, and dynamics task group on structural control benchmarks, all in the Engineering Mechanics Division. He is also on the structural control committee in the society’s Structural Engineering Institute. At IASSAR (the International Association for Structural Safety and Reliability), he sits on the committee on stochastic methods in structural engineering, and on the subcommittee on computational stochastic mechanics. He has shared chairing and organizing duties at multiple conferences since 1995, has published or submitted 10 articles for refereed journals since 1997, was principal or co-author in 16 articles in other refereed publications, and published in numerous conference proceedings, assorted reports, and technical seminars and tutorials.

## Stillwell Memorial Award

*Two awards presented annually on the basis of students’ outstanding scholastic achievement and extracurricular activities.*

**Kelly Jo Griswold** of Eldorado, Illinois, worked the summer of 2002 as a mechanical design intern for Ball Aerospace and Technologies Corporation (BATC) in Boulder, Colorado. She interned at Ball Aerospace too in summer 2001. In 2001, she helped to write proposals, summarized mission descriptions and technical requirements, and created and gave technical presentations. She also designed and coordinated a local intranet site.

By 2002 at Ball Aerospace, Griswold had advanced to modeling and making detailed drawings for various parts to support the Pluto Exploration Remote Sensing Instrument (PERSI) for NASA’s New Horizons mission. She presented material that she designed through several stages of review and wrote systems engineering reports for various modeled parts.

Before the summer of 2002, Griswold spent four months as a structural analysis intern at the Caterpillar Simulation Center in Champaign. There, she learned how to use various software programs to perform engineering model development and simulations, and to analyze the results. She put her knowledge to use during her summer 2002 internship with Ball Aerospace, after which she again returned to Caterpillar as an intern.

Griswold graduated with her bachelor’s in AE in May 2003.

When **Melanie Lang** of Rochelle, Illinois, is not in class, she is busy with a host of extracurricular activities. Since January 2002, she has been a fitness instructor at Campus Recreation at the University of Illinois. She is president of the Kappa Theta Epsilon honor society and vice president of the Society of Cooperative Engineers. She is a member of the aerospace engineering honor society, Sigma Gamma Tau; chairperson of the Illini Union Board, a Boeing



Harry Zanotti

*Kelly Jo Griswold (left) and Melanie Lang (right), recipients of the Stillwell award, flank Mrs. Jo Stillwell, after whose husband the award is named.*

student ambassador, a volunteer for Boeing Volunteer Programs, and a member of Intervarsity Christian Fellowship.

Lang has kept up with her studies even as she spends time on extracurricular pursuits. She is a James Scholar and on the Dean’s List, and was a Knight of St. Pat nominee. She also received a Boeing Pride Award in 2001.

She spent the summer of 2000 as an intern at an engineering firm, honing her technical writing skills. From January to May 2001, Lang was a cooperative education student at Boeing Phantom Works, where she developed and maintained a department Web site and the weapon systems database. She returned to Boeing in 2002,

where she spent another semester as a coop student, working on a competitive assessment of the F/A-18E/F.

Lang plans to graduate in May 2004.

## McCloy Memorial Award

*Presented annually to a junior or first-semester senior student in recognition of outstanding academic performance.*

**Niraj Patel** of Morton Grove, Illinois, spent a very interesting three months as a research assistant at the von Karman Institute for Fluid Dynamics in Belgium. "My research experience this summer (May to July 2003) was extraordinary," said the senior, who conducted experiments in the field of hypersonic transitional flow. "It was a great learning experience. The institute had many rare facilities such as Mach 6 and Mach 15 wind tunnels, in addition to a 1200 kW induction plasmatron." The institute established a short training program for qualified undergraduates in 1976. "Every year, it chooses approximately 60 students from 13 nations (those countries that are part of NATO) to participate in the program. Each student is assigned to work independently on a research project in one of the institute's facilities."

Before heading off to Belgium, Patel spent four months as a research assistant for the U.S. Army's Construction Engineering Research Lab (CERL) in Champaign. There, he conducted tensile tests on fiber-reinforced polymer composites. Currently, he is in the beginning stages of a project with faculty member Greg Elliott. "This will be a two-semester endeavor, where we hope to design and build an innovative micro-aerial vehicle (MAV)," he said.

Patel expects to graduate in May 2004 with a major in aerospace engineering and a minor in mathematics. He has been on the Dean's List for five semesters.

## Benny Poh Chieh Poon

leads a very busy life and is leading it well, by all accounts. Not only is the senior majoring in aerospace engineering, he is also majoring in economics and doing a minor in international engineering. Poon, a Singaporean, came to the University of Illinois in August 2001 and has been occupied ever since. He has been involved in community service through various organizations such as Volunteer Illini Projects and Tau Beta Pi. He devotes time to peer tutoring and serves as the membership vice president for the campus chapter of the aerospace honorary, Sigma Gamma Tau. On the academic side, Poon is an undergraduate researcher: he is researching high strain-rate testing of materials with the Aerospace Engineering Department and is investigating the application of the German healthcare system to the United States with the Economics Department.

Poon has been named a James Scholar every year since 2001 and on the Dean's List every semester. In 2002, he became a member of the National Society of Collegiate Scholars; member of Tau Beta Pi, the honorary society for engineers; and member of Sigma Gamma Tau, the aerospace engineering honorary.



Harry Zanotti

*From left to right: Niraj Patel (McCloy award), Vincent Lee and Kara Huffman (Sigma Gamma Tau members), and Benny Poon (McCloy award) pose for the photographer.*

## Strehlow Memorial Award

*Presented annually to a graduate student in recognition of outstanding research accomplishments.*

**Seunggil Choi** is researching the dynamics of randomly perturbed systems for his doctorate. He has been attached to faculty member Sri Namachchivaya's Nonlinear Systems Group since August 1998. His areas of research include applying nonlinear dynamics in problems related to plates and shells, rotating shafts, and spinning disks. He also studies stochastic dynamical systems and stability.

Choi received his first degree, in aerospace engineering, from Inha University, Korea. He graduated in 1998 with a master's in mechanical engineering from Rensselaer Polytechnic Institute, New York. He is a member of several professional organizations, among them the American Institute of Aeronautics and Astronautics, Society for Industrial and Applied Mathematics, Society for Experimental Mechanics, and the American Society of Mechanical Engineers.

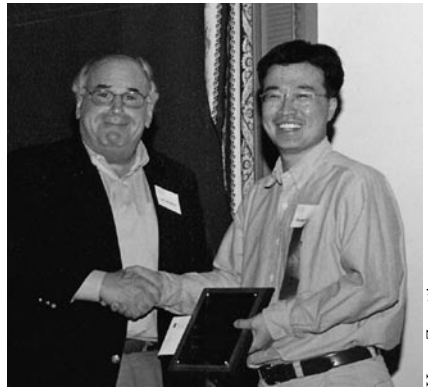
## Awards, *continued*

He graduated in 2003. He is a senior research engineer with Hyundai Automobile Company in South Korea.

**Holly Gurbacki**, originally of Cheektowaga, New York, also received the Strehlow award. In 2000, she also gained another sort of recognition: she received a patent for a sensing system for aircraft surface contamination, using control surface hinge moment measurements.

Gurbacki has gained many awards for her academic excellence throughout her career at AE. She received a Jean Monnet scholarship in 1999 and interned for half a year at ONERA (Office National d'Études et de Recherches Aéropatiales), Chatillon, France. In 2001, she received the Mavis Scholarship, and from 1998 to 2000, the Amelia Earhart Fellowship. She has also received fellowships from NASA and SURGE, the College of Engineering's fellowship program that supports under-represented groups in engineering.

Gurbacki was a research assistant from 1996 to 1998, and again



*Prof. Larry Bergman presents the Strehlow award to Seunggil Choi.*

from 1999 to 2003. She designed and completed a series of wind tunnel experiments on instrumented, iced airfoils. She also performed surface flow visualizations and investigated unsteady hinge-moment coefficient as a warning parameter of airfoil performance.

From May 2001 until recently, Gurbacki was the Webmaster and coordinator of student contests for the college's Academy for Excellence in Engineering Education. She designed and coordinated a student contest to help improve certain engineering courses, and

researched areas of education and engineering for the dean of the College of Engineering.

Gurbacki is a peer tutor, mentors undergraduate women, and volunteers for Habitat for Humanity. She has also instructed students at the Illinois Aerospace Institute, the department's summer camp for high schoolers. She is a member of the Sigma Gamma Tau aerospace engineering honor society, the Delta Delta Delta sorority, and the Dean's Student Advisory Committee in the Engineering Council. She is a recruitment counselor for the Illini Space Development Society and publicity chair for the Society of Women in Engineering.

Gurbacki received her master's in aerospace engineering from the University of Illinois in 2000, and is currently a PhD candidate in the department. She plans to earn her doctorate in 2004.

## Margerum Memorial Award

*Presented annually to an undergraduate student for outstanding leadership qualities as exemplified by his or her participation in departmental extra-curricular activities.*

**Ann Peedikayil** refined her people skills before she enrolled at the University of Illinois, selling in an electronics store, helping patrons and staff at the Chicago Public Library with computers and the Internet, and making presentations for local and state government offices. Peedikayil, of Chicago, drew on those skills when she came to Urbana. Before earning her bachelor's in 2003, she had been a member of the AIAA Design/Build/Fly team; a member of the NASA Reduced Gravity team, the Float'n Illini; and group leader of the Purple



*Cetan II, the human-powered hydrofoil project, won first place for legacy project in the 2003 Engineering Open House. Holding the award is team leader Kevin Brown. From left to right, some other members of the team at the ceremony are Kirk Kittell, Brian Richardson, Dan Eckiss, and Jeff Bookland.*

Chickens, an aero design team that built a model radio-controlled aircraft for the Society of Automotive Engineers' Aero West competition.

Peedikayil taught Engineering 100 as an engineering learning assistant and served as the community service director for

the Society of Women Engineers for two years. She has been both treasurer and president of the UI chapter of the American Institute of Aeronautics and Astronautics.

In her junior year, she conducted flight simulation research for the smart icing project; in

her senior year, she carried out research in smart structures.

Peedikayil graduated with a major in aerospace engineering and a minor in international engineering. She now works for Caterpillar in Champaign.



## 60th Anniversary Celebration

April 29–30, 2005

**Friday 4/29** Stillwell seminar  
Welcome reception

**Saturday 4/30** Symposium, Coordinated Science Lab B02  
Lab and campus tours  
Banquet and awards program at Holiday Inn, Urbana



*Detailed information will be in the next newsletter.*

## Here's How to Support Your Alma Mater

In support of high-quality education in the Department of Aerospace Engineering, enclosed is my gift of:

\$1,000  \$500  \$250  \$100  Other \_\_\_\_\_

I have enclosed a check in the above amount made payable to:  
 UIF/AE unrestricted fund (lab improvements, student activities)  
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## Aerospace Faculty Derive Control Strategy for Solar Sail

This year's anticipated launch of the Planetary Society's "Cosmos 1" spacecraft may usher in the long-awaited age of solar sailing. The performance of such spacecraft could be optimized with a simple control strategy developed by scientists at the University of Illinois.

Powered by the sun, solar sails require no onboard propellant, making delivery of huge payloads across vast distances of interplanetary space possible. "For example, a solar-sail spacecraft could ferry provisions and equipment to Mars in advance of a manned expedition," said Victoria Coverstone, a U of I professor of aerospace engineering.

In a project funded by the Jet Propulsion Laboratory, Coverstone and John Prussing, also a professor of aerospace engineering at the U of I, investigated the feasibility of using a solar sail to escape Earth's orbit and venture out to the planets.

The researchers derived an efficient control algorithm to continuously orient the sail in three dimensions in order to maximize the component of sail force along the desired trajectory. Their findings have been published in the *Journal of Guidance, Control and Dynamics*.



*A 47-foot blade, a replica of one of eight blades that make up the Solar Sail spacecraft, is deployed in New York City's Rockefeller Center as part of a recent "Centennial of Flight" exhibit in July and August 2003. The blade gave the public its first opportunity to see this technology. Photo by Philip Greenberg, (c) The Planetary Society and Cosmos Studios.*

"The solar sail does not sail on the solar wind—the stream of charged particles that produces the familiar glow of auroras," Coverstone said. "Instead, the solar sail uses sunlight in much the same way as a sailboat uses wind. Sunlight striking the sail will apply a force, which can be directed by tilting the sail."

When launched into Earth orbit, the Cosmos 1 spacecraft will unfurl a solar sail consisting of 600 square meters of lightweight, aluminized mylar. The sail will be divided into eight "blades" or "petals" roughly triangular in shape.

The actual mission—the first solar-sail flight of its kind—is scheduled for launch in the fall of 2004.

Headquartered in Pasadena, California, the Planetary Society was co-founded by Carl Sagan, Bruce Murray, and Louis Friedman in 1980 to advance the exploration of the solar system. With more than 100,000 members in 140 countries, the society is the largest space interest group in the world.

—courtesy of James E. Kloeppel, University of Illinois News Bureau