

# WAY TO THE FUTURE

## DEPARTMENT CHANGES NAME

This newsletter reflects news and events that occurred in 2002. We want to inform you, however, that in May 2003, the department received approval to change its name to the Department of Aerospace Engineering. Our 2003 newsletter will incorporate this update.

—Alison Weingartner, Editor

## 2002 AWARDS HONOR BOEING ENGINEERS, OUTSTANDING STUDENTS

Alumni from The Boeing Company, a faculty member, and several outstanding students were recognized at the 2002 awards dinner in April for the Department of Aeronautical and Astronautical Engineering. David Daniel, dean of the College of Engineering, and other officials from the University of Illinois at Urbana-Champaign were also at hand. Present were Myron Salamon, associate dean and director of the Engineering Experiment Station; Ellen Amberg, Assistant Director for Constituent Programs for the Alumni Association, and Kent Studer, the College of Engineering Assistant Director of Development. Also present were Mrs. Jo Lee Stillwell and Mrs. Gertrude McCloy (spouses of former faculty members, for whom two of the awards are named), and Ms. Artha Chamberlain, a former alumni coordinator for the department. AAE Department Head Mike Bragg ('76, MS '77) welcomed attendees to "possibly the last awards dinner for the Department of Aeronautical and Astronautical Engineer-

ing," referring to a proposed name change for the department.

### DISTINGUISHED ALUMNUS AWARD

*This award honors alumni and alumnae who have distinguished themselves by outstanding leadership in planning and direction of engineering and scientific work, by fostering professional development of young engineers, or by contributions to knowledge in the fields of science and engineering. The award was first presented in 1965.*

**Thomas J. Tobey**, '69, is the Director of Manufacturing Research & Development for the Boeing Commercial Airplane Company. He acquires and develops new manufacturing technology from around the world for current and future Boeing aircraft products. Tobey also directs manufacturing technology efforts for Boeing Phantom Works in the state of Washington.

Before this, he was director of the Interiors Responsibility Center,

### AE MOURNS PASSING OF BEDDINI

Robert Beddini, an associate professor in aerospace engineering, died Thursday, October 9, 2003. Condolences can be sent to Ann Beddini, care of the Aerospace Engineering Department. We will have a more complete memorial article in our next newsletter.

which designs and builds interior components for various Boeing commercial aircraft. Tobey has also served as director for both operations technology and continuous quality improvement for the Boeing Commercial Airplane Group and as director of program management for the fabrication division.

He joined Boeing in 1979 as manager of research and technology for Boeing Aerospace in Washington, D.C. In 1981, he moved to Seattle and served in various assignments in technology

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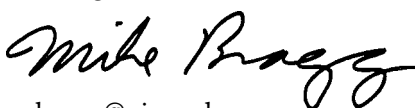
## FROM THE DEPARTMENT HEAD

In the last issue, we had several articles about a possible name change for the department to "Aerospace Engineering." We solicited your thoughts and comments and many of you responded by email. The comments were very thoughtful and were an important part of our process in considering whether to propose a name change. We also solicited comments from our undergraduate and graduate students, as well as others in the university community. The overwhelming majority of all groups solicited felt that it was time to change the department name to "Aerospace Engineering." The faculty met in May and voted almost unanimously to propose the name change. Of course, the department can't do this without university approval. The College of Engineering has approved the proposal, and we await approval by the university and the governing bodies in the state. We will keep you posted on the progress.

In the department, things keep moving forward despite a tight state budget. We continue to build our expertise in aerospace information with the addition of assistant professor Natasha Neogi (*read an introduction to Neogi in this issue*). There are many opportunities in this area for exciting research, and we look forward to fully integrating it into the department. We have also hired a new faculty member in experimental high-speed aerodynamics, who will start in January 2003. More on that in the next issue.

Overall, we continue to enjoy outstanding students and a vibrant research program. We look forward, as always, to your input and participation in the life of the department.

Best regards,



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development before becoming an assistant to the corporate vice president of engineering in 1987. He spent 10 years at McDonnell Douglas, with assignments in propulsion systems and field technical support.

In addition to his AAE degree, Tobey earned an MBA from the University of California in 1975. He has also completed executive development programs at the University of Washington and Columbia University. Tobey serves on AAE's alumni advisory board and is the Boeing executive focal for the University of Illinois.

April was a good month for **Lee H. Sentman**, '58. Not only was he nominated as a Distinguished Alumnus of the department, he was also elected a Fellow of the American Institute of Aeronautics and Astronautics (AIAA). At the time of the awards dinner, he was in Arlington, Virginia, being honored as an AIAA fellow at the Global Air and Space 2002 International Business Forum and Exhibition.

As a faculty member of the department, Sentman's research interests include the commercialization of high-energy chemical lasers, molecular dynamics, fluid mechanics, and kinetic theory and statistical mechanics. He directs the Chemical Laser Lab at AAE, conducting research into developing a fundamental understanding of the fluid dynamic, chemical kinetic, and radiative interactions that determine the performance of continuous wave chemical lasers.

After receiving his doctorate from Stanford University in 1965, Sentman joined AAE as an assistant professor. He became a professor in 1979. He was the associate department head from 1987 to 1999. Sentman has, at various times, worked in California as an engineer for Douglas

Aircraft Corp., Lockheed Missiles and Space Company, and in the Rocket Propulsion Lab at Edwards Air Force Base, as well as at Bell Aerospace in Buffalo, New York.

In addition to being an AIAA Fellow, his other honors include the AIAA Plasmadynamics and Lasers Award in 1999, AAE Teacher of the Year Award in 1995-96, and the College of Engineering Andersen Consulting Award for Excellence in Advising in 1993.

### OUTSTANDING RECENT ALUMNUS AWARD

*This award honors recent graduates who have distinguished themselves early in their careers. The award was first presented in 1973.*

Awards night for **Abdollah "Abdi" Khodadoust**, PhD '93, was a milestone of sorts. It was eight years ago to the day when he left the University of Illinois. He is now a principal engineer/scientist with Boeing, where "he is responsible for evaluating the effect of the atmosphere on the Space Shuttle during launch, and he must certify its safety before each flight," said Mike Bragg, his former adviser.

Khodadoust began his career at McDonnell Douglas in the advanced engineering group doing aircraft icing and applied aerodynamics. He received a Douglas certificate of recognition in 1997 for his work on the Blended Wing Body aircraft wind tunnel test. He then was involved in flight-testing for certification of the Boeing 717 and was recognized in 1999 for this work by then Phantom Works president, David Swain. Khodadoust received two awards, both in 2001, for his shuttle work, including a NASA award for outstanding technical contributions and a Boeing

Quality Award. As a student, he won the AIAA Ground Test student paper in the graduate category in 1992, and he received the Roger Strehlow award for outstanding graduate research accomplishments in 1993.

He is the current chair of the atmospheric environment technical committee at the American Institute for Aeronautics and Astronautics (AIAA). "I oversee the activities of 36 members . . . . With their input, I promote knowledge in all areas of science and technology relating to vehicular flight through the atmospheric and space environment," he said. Khodadoust was the technical program chair for atmospheric environment at the 40th AIAA Aerospace Sciences Meeting in January 2002. He served as the general program co-chair for the 10th American Meteorological Society's Aviation, Range, and Aerospace Meteorology meeting in May 2002.

### ROBERT W. MCCLOY MEMORIAL AWARD

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

**Tom Krenzke** of Lake Zurich, Illinois, is this year's McCloy recipient, maintaining his performance in academics even as he is involved in extracurricular activities. The junior, who is a James Scholar and an Illinois State Scholar, earns a grade-point average of 3.95 out of 4.0. Since October 2001, Krenzke has been a lab assistant in the computer drafting class, helping other students learn the Auto-CAD, Mechanical Desktop, and Inventor drafting programs. He is also an engineering learning assistant,

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*From left to right: Prof. Emeritus Shee-Mang Yen reminisces about the department's earlier days with Mrs. Gertrude McCloy, Mrs. Maria Yen, Mrs. Jo Lee Stillwell, and Prof. Rod Burton at the 2002 annual awards banquet.*

teaching an introductory class to incoming engineering students. He was named the outstanding initiate in the Tau Beta Pi engineering honors society in 2002. Krenzke also finds time to tutor math at Urbana High School, serve as an executive member of the student chapter of AIAA, and participate in the Design/Build/Fly team.

## H.S. STILLWELL MEMORIAL AWARD

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

It is a testament to **Leia Blumenthal's** accomplishments that two faculty members nominated her for the Stillwell award. The senior from Downers Grove, Illinois, has maintained an "exceptional" grade point average, according to her undergraduate adviser Mike Bragg, and she has been a James Scholar and on the Dean's List since 1999. "What really distinguishes her . . . is the degree to which she seeks out opportunities for learning outside of the classroom," wrote Prof.

Bruce Conway in his nomination letter. Blumenthal took advantage of the engineering coop program and worked as an engineering intern for Pratt & Whitney in her sophomore year.

Since May 2001, she has worked as a research assistant for Bragg in the NASA-funded Smart Icing Systems project. "Leia is . . . resourceful and needs little direction," said Bragg, recalling that Blumenthal diagnosed a problem in some software developed by a previous graduate student and came up with a

corrected version of the code. Bragg said that she also helped him prepare a presentation on unsteady aerodynamics of aircraft forebodies with very little guidance. "This presentation at NASA Johnson was in part responsible in the award of a new grant in this area," he said.

Blumenthal has also taught an introductory class to freshman engineers since March 2001 in her capacity as an engineering learning assistant (ELA). She has co-directed the ELA program since October 2001, training juniors and seniors who will teach other ELA classes. Blumenthal also devotes some of her time to the AIAA student chapter (where she currently serves as vice president) and Women in Engineering. She was on the College of Engineering Advisory Board in 2001 as the AAE undergraduate representative, and she developed and taught a course on space and rockets for an after-school program at an elementary school in Urbana.

Being the space enthusiast that he is, **Robert Travis Wendt** of Urbana fueled his enthusiasm by working for a year as an under-



*Prof. Larry Bergman (left) converses with AAE students who were recognized at awards night. From left to right: Leia Blumenthal, Kirk Kittell, Kevin Brown (seated), Meghan Meharry, and Tom Krenzke.*

Photos by Harry Zanotti

graduate research assistant on a space-related project for Prof. Victoria Coverstone. In 2000, he participated in a research project in the nonlinear systems group, under the guidance of Prof. N. Sri Namachchivaya.

Wendt has been a tutor of mathematics, physics, and chemistry to area high school and college students since fall 1998. He supervises and instructs small learning groups at the Spectrum Learning Center in Urbana. Since fall 2001, he has been a grader for three AAE courses. He has also worked for the Champaign Cycle Co. and as a lab technician for the Department of Crop Sciences.

The senior, who will receive a minor in mathematics when he completes his degree in May 2003, is a James Scholar and on the Dean's List. He is a member of various honor societies, including Sigma Gamma Tau, Phi Kappa Phi, Alpha Lambda Delta, and Phi Eta Sigma. Wendt is also a member of the Illini Space Development Society and the Float'n Illini, a multidisciplinary group of college students who conceive and carry out experiments in zero gravity.

## ROGER A. STREHLOW MEMORIAL AWARD

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

Over the duration of **Dhirendra Kubair's** research towards his doctoral degree, he developed "very sharp analytical and numerical skills," according to his adviser Philippe Geubelle. So sharp are Kubair's skills, in fact, that other graduate students in his research group often went to him when they needed an analytical solution to test their numerical schemes. Another Kubair charac-



*Diane Jeffers, AAE's Coordinator of External Relations, converses with an award recipient's parent at the awards dinner. In the background, Outstanding Recent Alumnus Award winner Abdi Khodadoust (left) speaks to Prof. John Prussing. Also shown is the Strehlow Memorial Award winner, Dhirendra Kubair.*

teristic is his intellectual curiosity. "He is always 'looking around' for extensions of his current work, or even for new types of research activities," said Geubelle, who sometimes had to rechannel Kubair's enthusiasm to the problem at hand. Kubair earned his doctorate in August 2001.

At AAE, his research activities were dedicated to the theoretical and numerical analysis of fundamental dynamic fracture problems, particularly in the effect of rate dependence on dynamic cohesive failure, intersonic crack propagation under mixed-mode conditions, and extrinsic versus intrinsic cohesive failure models. His research activities have resulted in four journal papers. Two have been accepted for publication in the *Journal of the Mechanics and Physics of Solids*, which is "regarded as the top journal in the field of solid mechanics," according to Geubelle. Another paper will appear in *Engineering Fracture*, and the fourth has been submitted to the *International Journal of Solids and Structures*.

At Bangalore University in India, Kubair graduated first among the class of 150 graduating seniors in July 1993, with a bachelor's degree in mechanical engineering. In 1992, he received first prize in the 23rd National Student Design Competition, conducted annually for juniors and seniors in engineering by the National Design and Research Forum, which is part of the Institution of Engineers (India). He received a master's in mechanical engineering from the Indian Institute of Science-Bangalore in 1996. Kubair has worked as a senior scientist in the Aeronautical Development Agency, a national defense lab in India; and at Caterpillar, Champaign, as a summer intern. He was a teaching assistant in finite element analysis of aerospace structures for Prof. Geubelle and a tutor for solid mechanics for Prof. John Lambros. Kubair is now a postdoctoral research associate at the Princeton Material Institute at Princeton University, working on failure

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