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2002 Alumni Fellow— Charlie Stryker

To Charlie Stryker, the 2002 College of Engineering Alumni Fellow, it's all about relationships.

On the Web site of CAS Construction, Inc., the Topeka-based firm of which Stryker is president and owner, the message is clear: "We build relationships like we build projects . . . to stand the test of time."

Stryker founded CAS Construction in 1985, specializing in water and wastewater treatment facilities. The company has completed more than 350 such projects nationwide, with a significant number done on a design/build basis. It has received numerous awards for project recognition and safety performance, including the Associated General Contractors of America Year 2000 Safety Award.

"The relationships I have developed in professional engineering and business are the ones that I have done my best in nurturing and encouraging," Stryker, CE '71, said. "They are based on expectations of excellence and repeat activities to continue those relationships."

"I believe those of us in engineering and business need to consider the benefits of making that same commitment to the College of Engineering—establishing relationships with faculty and administration to encourage them to participate in current engineering methods and state-of-the-art endeavors. Those methodologies will then be transmitted to students, and as a result allow more contact and exposure to students, as well as high-end solutions to engineering and business issues."

Stryker, who also holds an M.S. in civil engineering from Texas A&M and is a licensed contractor in 19 states and a licensed professional engineer in five, has been able to nurture just such a relationship at K-State through several avenues during the course of his career. These include his membership in the Kansas Society of Professional Engineers, where he is currently president; and also his 12 years on the Kansas State Board of Technical Professionals, a post he had been appointed to by three governors for the statutory maximum of three, four-year terms.

He is a member of the College of Engineering Advisory Council, and in 1999 he established the Stryker Architectural Engineering and Construction Science and Civil Engineering Academic Excellence Funds for the K-State College of Engineering.

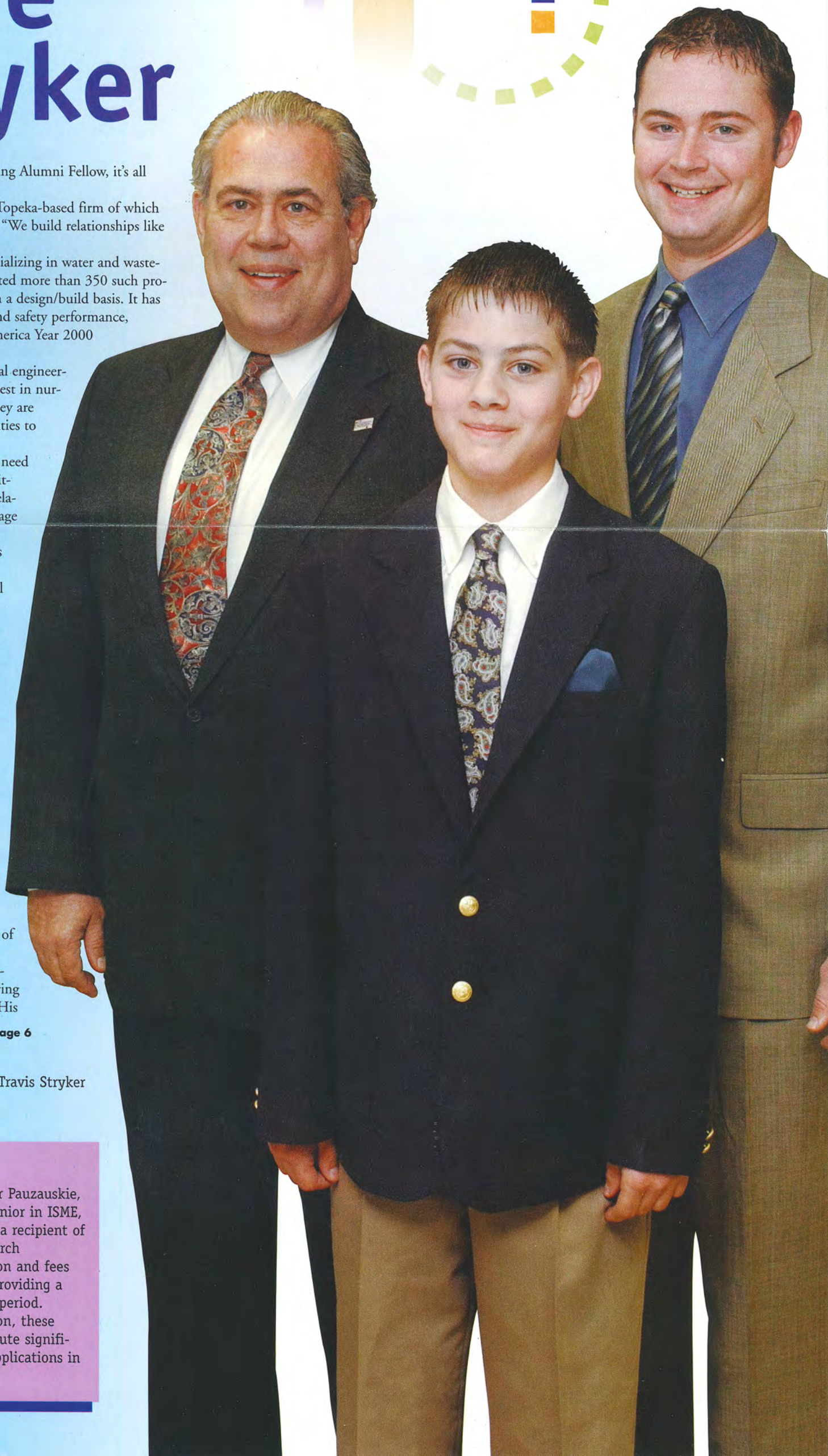
And then there are the family ties to K-State engineering—Stryker's father was a mechanical engineering student here in his senior year when WWII called. His

continued on page 6

Left to right: Charlie, Justin, and Travis Stryker



Impact

**On the outside cover:**

Dawn Dechand, senior in BAE, Topeka; Peter Pauzauskie, senior in ChE, Topeka; and Lesley Schaefer, senior in ISME, Wichita (left to right) have each been named a recipient of a National Science Foundation Graduate Research Fellowship. The award covers the cost of tuition and fees for three years of graduate study, as well as providing a \$21,500/year living stipend during that time period.

According to the National Science Foundation, these highly select students are expected to contribute significantly to research, teaching, and industrial applications in science, mathematics, and engineering.

Message from the Dean

John F. Kennedy once said, "Leadership and learning are indispensable to each other."

I couldn't agree more.

The ultimate role of our engineering and computer and construction science majors will be to move society forward. We are training them to look to the future, to better our way of life.

In educating these students, we not only focus on instruction in technical competence, but we are preparing them to be leaders.

One of our goals is that 100% of our graduates will have participated in teams, professional societies, etc., to gain practical experience in leadership while here.

This issue of *Impact* points to strong evidence of how we're doing (and how we've done) in developing this important trait.

We proudly claim newly elected student body president, Zac Cook. Of the nine residence



hall presidents on campus, four are from the college, as are 29% of the fraternity presidents. Add in the many governing board positions and campus-wide organization offices held by our students, and for representing only 15% of the student body, we hold an extraordinary number of leadership posts.

Our NSF graduate fellows, our newest Goldwater scholar, and our numerous other national scholarship winners clearly point out our leadership in academics.

Evidence of our technical leadership can be seen in the articles on L.T. Fan, Ben Voigt, and the EAQ program. Tau Beta Pi Company of the Year, Accenture, is an exciting enterprise, employing many of our graduates and driving innovation in other companies around the world.

Leadership from alumni continues to impact our profession and the world around us. While Charlie Stryker and Donna Kottwitz are highlighted, many names on the Seaton Society roster are filling that role as well.

Here at Kansas State, we are blending that "indispensable" pair of "learning and leadership."

Terry S. King
Terry S. King, Dean

Seaton Society

This list recognizes donations made in the 2001 calendar year.

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Scholarship fulfills intended purpose

For Donna Kottwitz, ChE '75, it was a way to pass the opportunity for an engineering career onto someone else.

For Ryan Keller, senior in ME, and Scott Harmon, senior in CIS, it was a generous and welcome contribution to their education at a crucial time in their studies.

The Donna Kottwitz and Mark Larson Engineering Scholarship, established by Kottwitz and her husband Mark Larson in 2000, was set up to be awarded to students of junior standing with financial need for the completion of their education. It is renewable through graduation, as long as the recipients maintain at least a 3.0 GPA.

"We specified junior and above," Kottwitz said, "because engineering students at that level have already demonstrated the capability and drive to complete their degrees. We wanted to have quality students, but the important point is that the scholarship is to aid those at risk of not being able to continue and finish their education."

Harmon and Keller were both in agreement that the scholarship had definitely allowed them to concentrate more on their studies.

"Before this scholarship," Harmon said, "I had to work almost full time. Plus it came in at my junior year, just when classes were starting to get harder. I was even

able to serve as a TA (teaching assistant) this semester for the Advance Operating Systems (CIS 722) class."

"This scholarship has been extremely beneficial to me," Keller said. "Since I don't receive any financial help from my parents, it allowed me to work minimal hours and focus more on my studies. I think it's one of the main reasons I've been successful in my college career."

Kottwitz is the manager of reservoir management at Agip Petroleum Co., Inc., Houston, where she is responsible for management of oil and gas reserves located offshore in the Gulf of Mexico. Her husband, Mark Larson, is also a chemical engineer (though not a K-State alum) and was able to take advantage of Dow Chemical Company's matching gift program for the scholarship, through his employment there.

"Mark and I have both been blessed with good careers," Kottwitz

said, "and when the all-university scholarship campaign began, we felt an engineering scholarship would be an appropriate way to help someone else get a college education."

"At this stage of our lives, many of our family and friends are putting their kids through college. Since we don't have children, we don't have that financial burden. I would not have been able to attend K-State without a good financial aid package, which included engineering



Ryan Keller and Scott Harmon

and general scholarships. Since I received assistance to get my degree, this scholarship is a way of helping someone else do the same."

Kottwitz was able to meet Harmon and Keller, the first two recipients of the award, at the 2001 Engineering Open House.

"I was really pleased to meet Ryan and Scott," she said, "and was impressed with

their maturity and sense of direction. Open House gave them a chance to show us around their respective departments and discuss their interests. I know that for both of them, the scholarship is making a difference in their lives, enabling them to reach their goals."

"They're definitely generous people," Harmon said. "It was really nice to meet them, show them around, have lunch, and get acquainted."

"Donna and Mark are very nice people and they have certainly set a good example for me by establishing this scholarship," Keller said. "By that, I mean that when I settle down in my career and am able to do so, I will definitely consider setting up a similar scholarship for students at K-State."

Kottwitz is a member of the KSU Presidents Club and was inducted into the Class of 2001 College of Engineering Hall of Fame.

"I have seen the College of Engineering grow and improve under the direction of Don Rathbone, and now Terry King," she said. "I appreciate their efforts to make it an outstanding program."

—by Mary Rankin



Donna Kottwitz and Mark Larson



Make plans now to attend the
Seaton Society Banquet & Hall of Fame Festivities
October 26, 2002

At the new K-State Alumni Center

Fan honored by his homeland

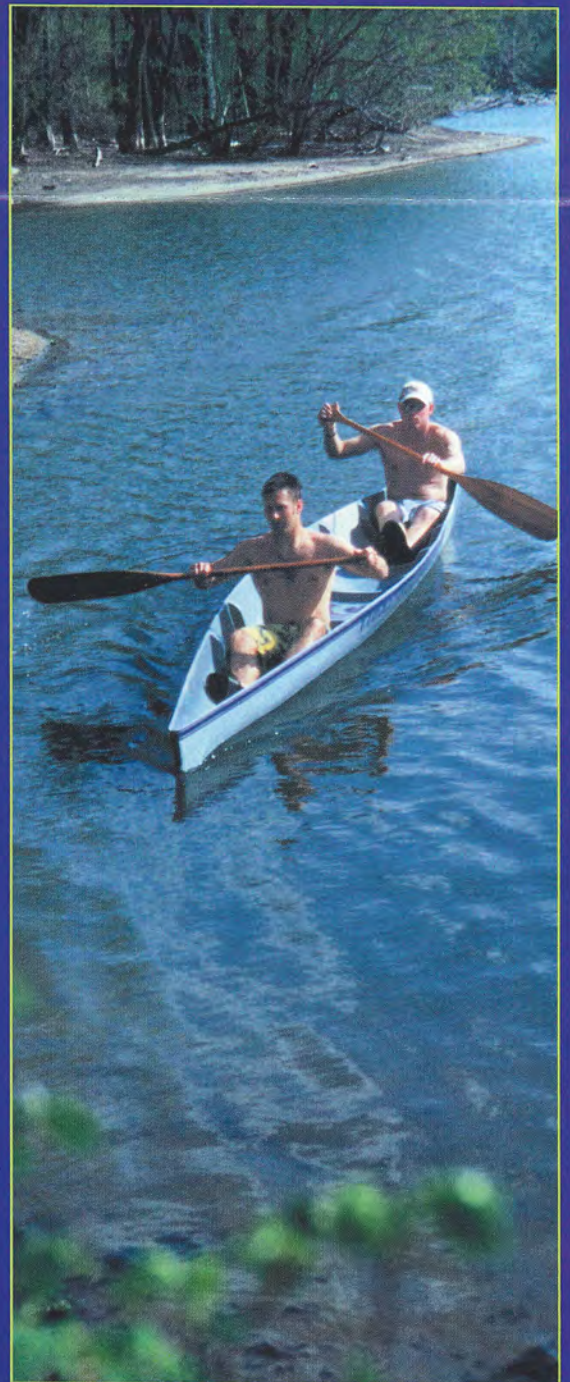
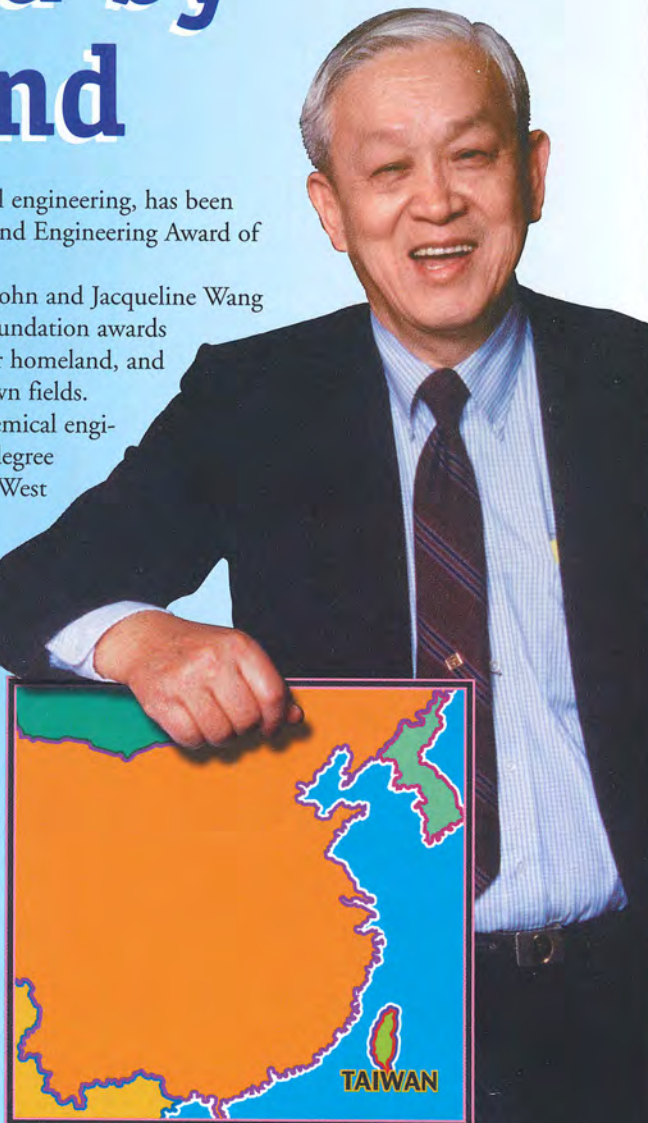
Liang-tseng Fan, K-State distinguished professor of chemical engineering, has been awarded the 2001 Taiwanese-American Foundation's Science and Engineering Award of Kenjohn Wang.

The foundation was established in November 1982 by Kenjohn and Jacqueline Wang of Long Beach, Calif., who are originally from Taiwan. The foundation awards and recognizes those who love Taiwan, identify Taiwan as their homeland, and who have achieved an outstanding accomplishment in their own fields.

A native of Taiwan, Fan received his bachelor's degree in chemical engineering from National Taiwan University in 1951, a master's degree from Kansas State University in 1954, a doctoral degree from West Virginia University in 1957, and a master's degree in mathematics from West Virginia University in 1958.

Fan serves as director of the Institute for Systems Design and Optimization. He served as head of the chemical engineering department for 30 years and was appointed University Distinguished Professor in 1968. He also holds the Mark H. and Margaret H. Hulings Chair in Engineering.

The Taiwanese-American Foundation's Science and Engineering Award selection is held every other year. Recipients are given \$20,000, which was shared by three co-winners this year, a medal, and plaque for their achievement. Fan received the award Nov. 17 at the Grand Hotel in Taipei, Taiwan. He was nominated by Shutsung Liao, a professor and biochemist at the University of Chicago, and the first winner of the award in 1983.



Test run

Members from the K-State student chapter of the American Society of Civil Engineers test their concrete canoe on Tuttle Creek. The craft and crew competed in the ASCE Mid-Continent Regional Conference concrete canoe competition, April 26-27 at the University of Oklahoma, Norman, and came home with a third-place trophy.

2002

K - State

Open



2002 Open House Awards

- Outstanding Department—CNSM
- Yellow Brick—BAE
- Best Technical Display—EECE
- Best Open Class Display—ARE
- Best Limited Class—ARE
- Best Freshman/Sophomore Display—CNSM
- Best Curriculum Display—CNSM

(above) St. Pat and St. Patricia candidates travel the parade route, flanked by departmental groups, as the 80th annual Engineering Open House kicks off April 5.

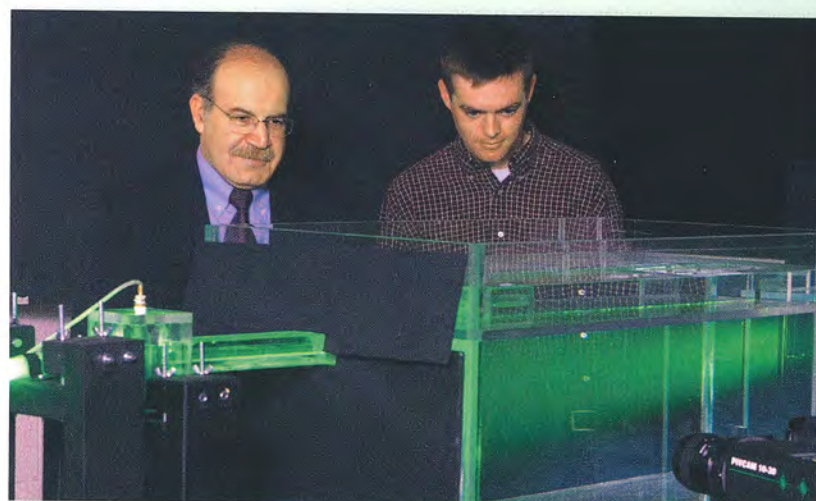
(left to right) ChE students whoop it up during their skit presentation in front of Seaton Hall. Daniel Frohberg, senior in BAE, accepts the Yellow Brick Award for his department's winning skit entry. Members of Steel Ring pour over score sheets as they finalize judging of the skit and float competitions.



Environmental Air

Focus on Research

years ago—a discussion that ultimately led to their seeking and receiving funding for establishment of the Environmental Air Quality (EAQ) program at Kansas State University.



Mo Hosni, department head MNE (left), and Steve O'Halloran, graduate student ME (right), work with the PIV system in the Ward Hall environmental air quality laboratory.

Now in its third year of support from both the university and a National Science Foundation EPSCoR grant, the program has developed into a broad interdisciplinary approach with research efforts involving

faculty from chemical, biological and agricultural, and mechanical engineering; as well as the departments of physics, biology, and chemistry, among others.

"It is our professional obligation and moral duty to protect people from possible contaminant attacks," Hosni said, in explaining the focus of his current research effort employing a particle image velocimetry (PIV) system.

If a substance such as anthrax is introduced into a closed space, how does it move and where does it go? What are the effects of temperature, air distribution, and time? Answering these questions, Hosni explained, is the role of the PIV system where these effects are measured in a fluid-filled, 1/10-scale Plexiglas™ room. Particles are introduced into the water, and the resulting fluid dynamic characteristics are measured in two successive digital photo images captured by a high-resolution camera.

The pictures enable researchers to track the path and time of contaminant movement. Why test in water? Hosni explained that fluid dynamic characteristics and the particulate transport mechanism are similar in water and air. Earlier air testing had been done in a large room and a

Even before events of 9/11, two faculty members at the College of Engineering had pondered the situation of how to handle and even protect against terrorist attacks that could inflict damage on innocent people.

The scenario that most intrigued Mo Hosni, department head and professor of mechanical and nuclear engineering, and Larry Erickson, professor of chemical engineering, was the possible release of biological or chemical contaminants into an aircraft cabin, a subway system, or a building.

How to guard against the effects of such an attack by preventing spread of the contaminant. How to most safely evacuate the people affected. How to get rid of the contaminant after its release. These were topics the pair had brainstormed about nearly three

Engineering

HOUSE

Engineering Banquet Awards

Advisor of the Year—Michael Hafling, asst. prof., ARE & CNSM
W. Leroy Culbertson Steel Ring Leadership Scholarship—
Nathan Oleen, sr., BAE

St. Pat and St. Patricia

St. Pat—Matt Corcoran, sr., ARE
St. Patricia—Lindsay Bose, sr., ARE

CHE



Superheroes to the rescue! EECE skit participants entertain the audience enjoying the day's events on the Union plaza.



(left to right) High school entrants in the LEGO® design competition diligently attack their task in Fielder Library. Visitors enjoy stopping to view construction science project, awarded "Best Curriculum Display" honors. The bridge-building design competition, hosted by civil engineering, attracts contestants each year from high schools around the state.

Quality Program

Boeing-737 aircraft cabin section, and detailed data had been obtained for validation of computer simulation models. The computer models are used to predict air movement and contaminant transport within a room and an aircraft cabin. Designers of both interior space and building HVAC systems can then use the simulation models to most effectively place duct work, etc., for maximum effectiveness, human thermal comfort, and safety.

Graduate students involved in the EAQ program and taking additional related courses can obtain EAQ certification, which, Hosni said, is "quite valuable to them" in their search for both jobs and research opportunities.

"K-State has long been a leader in the area of air distribution and human thermal comfort," Hosni said. "In the 1970s, mechanical engineering professor Paul Miller developed the air-diffusion performance index that is still used today by designers and manufacturers of air-distribution systems."

Another goal of the EAQ program, Erickson said, was to launch activities related to air quality in order to unite the expertise of many professionals on campus. A part of this successful effort has been funding

for the National Environmental Evaluation and Remediation (NEER) Consortium. NEER has linked several university research programs with relevance to environmental evaluation and remediation, including



Alec Frank (left) and Kaila Young (right), seniors in ChE, discuss their building air disinfection senior design project with Larry Erickson (center), ChE professor.

Nanoscale Materials, Inc., a leader in decontamination technology capable of neutralizing chemical and biological agents.

The EAQ program is also helping to support the

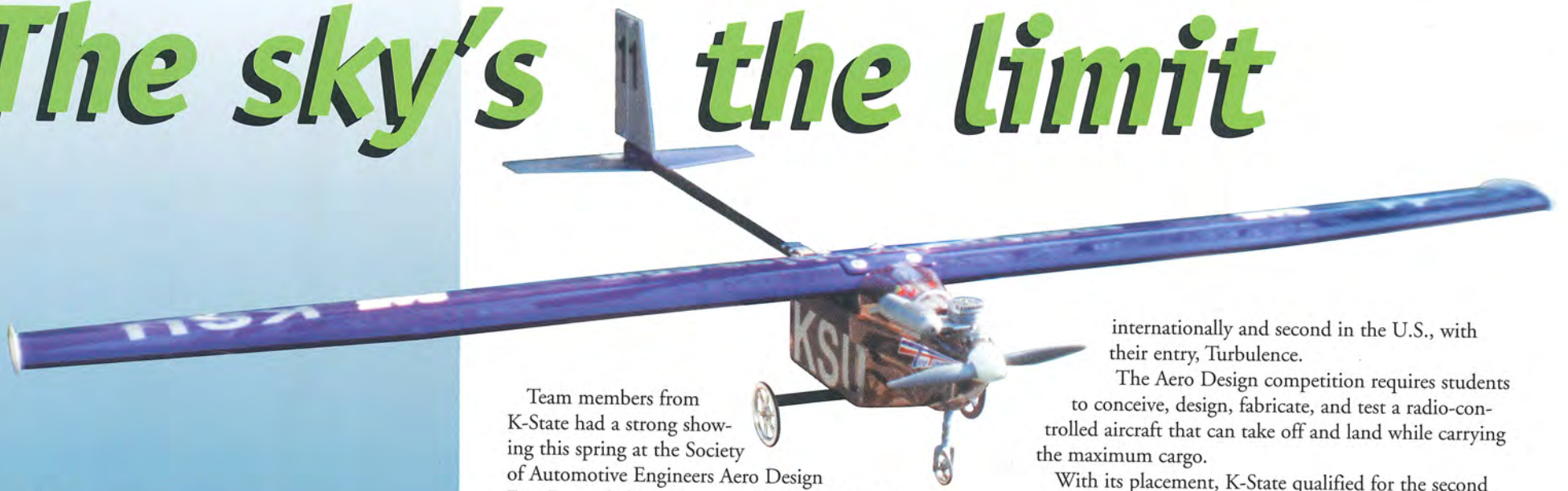
senior design project work of a team of three chemical engineering students this semester—a project that well exemplifies the result of uniting expertise.

"A guard at the door no longer guarantees protection for building inhabitants," Erickson said. Various contaminants can be introduced through the air-intake structure from the outside. The students' project, under Erickson's guidance, involves designing a system, incorporated into a building's HVAC components, that can use UV-light, reactive nanoparticles, and/or filtration technology to destroy contaminants before the air is distributed inside the structure. With this system in place, anthrax escaping from someone opening a letter inside the building, for example, would be prevented from being dispersed through the HVAC system.

"Ongoing research within the Environmental Air Quality program matters very much in today's world," Erickson said. "One concern, of course, is bioterrorism, but far more people are affected by naturally occurring dangers such as influenza, and the West Nile and hanta viruses. We're working on addressing those issues as well. The air we breathe is very important to our health."

—by Mary Rankin

The sky's the limit



Team members from K-State had a strong showing this spring at the Society of Automotive Engineers Aero Design East Event, held at Titusville, Fla., April 12-14. With 30 teams from the U.S. and around the world competing, KSU engineering students placed fourth

internationally and second in the U.S., with their entry, Turbulence.

The Aero Design competition requires students to conceive, design, fabricate, and test a radio-controlled aircraft that can take off and land while carrying the maximum cargo.

With its placement, K-State qualified for the second round of competition, June 7-9, in Palmdale, Calif., where 44 international teams will compete in the Aero Design West Event.

Stilson awarded Goldwater Scholarship



Julie Stilson, senior in CS, Wichita, has been awarded the Barry M. Goldwater Scholarship. Her goal is to earn a Ph.D. in computer science, become a professor, and conduct research in artificial intelligence.

Accenture, Ecklund honored by Tau Beta Pi

Tau Beta Pi members honored Accenture as Company of the Year at its annual banquet, April 15, 2002. The management and technology services organization handles consulting and outsourcing in key business areas for clients worldwide.



Terry Ecklund

Terry Ecklund, CS '84, was named 2002 Leader of the Year. He is a partner in Accenture's communications and high tech market unit. Ecklund joined the company in 1987 and has primarily served incumbent and emerging wireline and wireless clients in North America telecommunications and software technology industries.

Tau Beta Pi is the nation's second-oldest honor society, founded in 1885 to recognize students of distinguished scholarship and exemplary character. It is the only engineering honor society that represents the entire engineering profession.



(left to right) Tau Beta Pi president, Dan Summers, ARE; Accenture guests: Kristie Peppenhorst, sr. mgr., Perry Henry, sr. mgr., and Jodie Holsinger, assoc. partner; and Terry King, dean of engineering.

Spring 2002 retirees



Richard G. Akins

Richard G. Akins, professor, retired after 39 years with the department of chemical engineering.



Joseph Campbell

Joseph Campbell, instructor, retired after 20 years with the department of computing and information sciences.



Eugene R. Russell

Eugene R. (Gene) Russell, professor, retired after 28 years with the department of civil engineering.

Charlie Stryker—Alumni Fellow

continued from page 1

brother graduated in industrial engineering, and his oldest son Travis is in his fourth year in architectural engineering at KSU.

"My personal connection to engineering at KSU spans over 45 years, from the first time my father took me to KSU Engineering Open House," Stryker said. He attended 2002 Open House events as well, where he and his youngest son, Justin, 13, inspected Travis' lighting exhibit in the architectural engineering department.

"I've always encouraged Travis to engage in the full range of opportunities at KSU—technical, group activities, student political involvement, and social activities," Stryker said. "The friends he makes during his time here, he will find will be much of his network of contacts and support connections over his future career path."

Travis, a member of Steel Ring (like his father before him), a senator and the privilege fee chairman for the Student Governing Association, and a previous officer in his fraternity, said that while his father was a definite "influence," he had made no demands on his education choices.

"I've always felt I was lucky to live in Kansas where K-State offered one of the best ARE programs in the country. I didn't even look at other places, and I still feel very confident about my decision," Travis said.

"My approach was similar to Dad's—I grew up hearing about K-State engineering—I started coming to Open House when I was about Justin's age. I'd recommend this program for him, too. And if I'm living around here when the time comes," he said, "I'd like my kids to get involved in the same way."

One of the commitments in being named Alumni Fellow is to come back to campus and spend time with students and faculty in your respective college.

"That visit back was one of the highlights of my career," Stryker said. "I consider myself fortunate to have had the opportunity to get a more in-depth understanding of students and the pulse of the faculty."

"I was so pleased by the enthusiasm and excitement of the faculty," he said. "I was particularly struck by the number of professors that have had industry experience and now have the desire to be in full-time higher education."

"And the students—well they listened to my comments, but then they asked the questions that needed asking. As professionals we sometimes take for granted our educational and career experiences," Stryker said. "The students I visited with were excited to listen to the engineering/construction/business interface. Clearly, they are focused on career objectives that meet not only engineering skill sets, but also the ethical use of those skill sets."

And still, it comes down to relationships.

"I believe the reasons I'm on the career path I am," Stryker said, "is due to my family upbringing, the course work I pursued under the guidance of two KSU professors in civil engineering, and some advice I received from Bob Snell, former head of civil engineering, seven years after I graduated from K-State."

"My technical education was intermingled with opportunities for group activities, social interaction, and a strong emphasis on leadership skill refinement. I contend that focus, and frankly, the type of engaged and ethical students who attend here, make the KSU educational experience a springboard for career opportunities, and in my opinion, the best comprehensive college of engineering in the United States."

—by Mary Rankin

Alumni News

Announcements

1950

Richard C. Meyer (EE) is retired and resides in La Habra, Calif. He has been dealing with serious health problems, but looks forward to hearing from classmates and friends. 1810 Stearns Ave., La Habra, CA 90631.

1967

Charles Kuhn (ME) retired from Caterpillar Inc. in January. He was a senior project engineer for more than 34 years and worked in diesel engine development and application. kuhnchw@ix.net-com.com

1978

Kenneth D. Moore (ME) was recently named a principle engineer for thermal/fluid systems in GE Power Systems' air-cooled gas turbine group. ken.moore@ps.ge.com

1981

Bruce Hazeltine (ChE) has been the chief engineer for Voltaix in North Branch, N.J., since May 2001. He and his wife, Judy Walker Hazeltine, have two children, 4-year-old Tara Beth and 3-year-old Tyler.

1983

Sue Goss Biederwolf (IE) and her husband, Scott, announce the birth of their second child, Samantha Grace, born July 5, 2001. She was born in the backseat of Scott's car in Eanes Elementary School parking lot in Austin, Texas. Samantha

was welcomed by her sister, Paige. (512) 263-1265

1986

Jeff Daniels (NE) completed his master's in business administration at Rockhurst University last December and is employed with Aquila Energy in Kansas City, Mo., as a manager in the alternative risk group. He and his wife, Rebecca DeYoung ('86, '91), welcomed their fourth child, Nigel Christian, on March 18, 2001. He joins siblings Hope, 7, Ian, 5, and Grace, 3, in Overland Park, Kan. jefdanie@utilicorp.com

1994

Joe Hug (ME) and his wife, Roxanne, announce the birth of their first child, Alexander Stephen Hug, born Nov. 10, 2001. Joe is the technical services manager at Monarch Cement Company in Humboldt, Kan. joe.hug@monarchcement.com

1995

Charles E. Pawloski, Jr. (EE) was named October 2001 engineer of the month for Raytheon Aircraft.

1996

Justin Trawny (ChE) completed his master's in business administration at the University of Iowa last December. He is employed with Fisher Controls International, Inc. in Marshalltown, Iowa, as a hydrocarbon sales engineer. He and his wife, Deana, have been married for three years.

Deaths

Joseph Nathan Wood, died Dec. 10, 2001, at the Meadowlark Hills Health Care Center in Manhattan, Kan. Wood received his bachelor's degree in electrical engineering from Iowa State University in 1936. He taught at K-State for nearly 45 years. He retired as a professor of mechanical engineering in 1981. He was preceded in death by his wife, Marceil. He is survived by one son, two grandchildren, and two great-grandchildren.

1934

Aloysius J. Koster (ME) died Nov. 8, 2001 in Los Angeles, Calif.

1936

Howard E. Rhoads (CE) died Nov. 15, 2001. He retired from C.T. Braun Engineers in 1978. Rhoads is survived by his wife, Oda Mae, of St. Helena, Calif.

1949

Carl M. Coonrod (AE) died March 4, 2002, in Wichita, Kan. Coonrod, a retired general contractor and rancher, was serving as the co-chair of the West Seaton Renovation Campaign at the time of his death. Survivors include his wife, Ruth, and two sons.

1953

David H. Swanson (ME) died Dec. 13, 2001, in Moraga, Calif.

Leland Authur Block (ME) died July 31, 2001, in Wichita, Kan.

1955

Harry Daniel Peck Knostman (CE) died Nov. 12, 2001, in Manhattan, Kan. He received his master's degree in applied mechanics in 1961 from K-State and his doctoral degree in civil engineering from the University of Colorado. Knostman served as an associate professor in the K-State Department of Civil Engineering from 1975 to 1988 and as full professor in the K-State Department of Architectural Engineering and Construction Science from 1988 until his retirement in 1997. He is survived by his wife, Carolyn; two sons, one daughter, and five grandchildren.

Keep Connected

Take a few minutes to jot down job changes, births, deaths, professional or other activities, your retirement, or remembrances you'd like to share. Send your news to *Impact* by mail, e-mail, or fax, as listed below.

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BAE senior—new student body president

"I'm already lovin' it. I'm pumped, full of energy—ready to go!" These were the words of K-State student body president Zac Cook, Plains, five days into his term of office.

Cook, senior in BAE, assumed the duties of his post on April 4 and on April 5–6 was busily involved with Engineering Open House, hosting his limited display project for the BAE department.

But as Cook is quick to point out, benefits from his College of Engineering educational experience will come in handy during his presidency. Skills like time management and problem solving came quickly to mind.

"Engineering students learn early how to manage class hours, study hours, and extracurricular activity time," Cook said. "And we also learn to be flexible when it comes to problem solving. We learn how to approach a problem from different angles, and I think that will be a helpful trait when it comes to student government issues."

Though Cook had served as an engineering senator and even been student body president of his high school, he'd never really considered seeking the KSU student body presidency until returning from a semester-long Study Abroad program in the Czech Republic last spring.

"When I came back from the Czech Republic, it became a priority for me that more K-State students would have access to

an international experience either through the Study Abroad program, co-ops, or internships," he said. "I found myself in total agreement with Dean King's goal that at least 25% of engineering graduates be involved in international study."

Cook said he found other people who agreed with this idea, as well as the view that K-State needed to take better care of its international students here on campus. His platform for running for office grew from those early ideas, and his candidacy was born.

Following graduation in 2003, Cook's plans are to go into the Peace Corps, with the hope of living and working in a Spanish-speaking culture. "I see myself as a service-oriented person," he said, but quickly added he has "no plans" for anything further in politics.

"My personal downfall is probably being over-involved," Cook said. "I'll have to watch it next year not to get over-committed. But I'm looking forward to being on call and facing the scheduling challenges that I know will

be there."

Summer activities of his presidency include speaking daily to new student groups on campus for freshman orientation during the month of June, and attending the Ninth Annual Seminar in Israel for University Student Body Presidents, July 31–Aug. 10.

—by Mary Rankin



Zac Cook



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3, 2, 1... Lift Off!

Not many summer internships include a space launch, complete with astronauts, Mission Control, and the Hubble Space Telescope. But for one Kansas State University student, his internship experience has been like nothing else on Earth.

Ben Voigt watched the Space Shuttle Columbia launch March 1, 2002, and then worked with a team of NASA flight surgeons at Mission Control to analyze data from a ground-based analysis system he had helped upgrade during a summer internship.

Voigt, senior in EE, Lindsborg, spent the past two summers interning with Wyle Life Sciences, a biomedical systems supplier for the NASA Space Shuttle at Johnson Space Center in Houston, Texas.

Voigt assisted with development and integration of new electrocardiogram analysis systems, which monitor astronauts' cardiac cycles during exercise and activity outside their spacecraft. The system was tested at Mission Control during a space walk to repair the Hubble Space Telescope. "Our monitoring system worked extremely well," Voigt said.

NASA's data analysis confirmed the new system operates better under noisy conditions than the old system. Flight surgeons requested the new system be available for the April shuttle mission to the International Space Station as well.

"Ben was instrumental in making this a success," said Vernon McDonald, Wyle Life Sciences space medicine advanced projects supervisor.

Voigt helped identify emerging technologies and commercially available products that might be useful in space medicine applications.

"Using these commercial packages for space medicine presents several engineering challenges because Mission Control is not wired directly to patient leads, as in a terrestrial application," Voigt said. "Because of that, all communications to and from the shuttle and space station suffer a round-trip delay of several seconds."

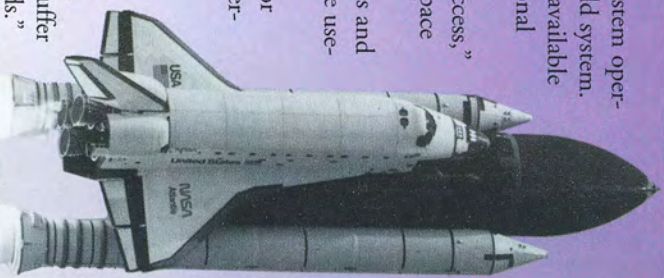
Voigt worked with flight surgeon Douglas Hamilton to develop a system to operate correctly and accurately despite time delay, which is important in helping astronauts during health emergencies.

"We developed software to accept data coming from equipment already installed in the Space Shuttle and International Space Station," Voigt said. "The software converts data into a format usable by commercial ECG analysis products available from GE Medical Systems."

Since 2000, three K-State students have interned with Wyle Life Sciences including Voigt, Matt Ownby, Olathe, and Jeff Lebak, Rose Hill.

—by Shannon Hartenstein

Ben Voigt



Voigt awarded fellowship
Ben Voigt's internship wasn't his only exciting achievement. Selected from over 2,000 applicants, Voigt received one of 166 American Society for Engineering Education National Defense Graduate Fellowships for 2002-2003. The fellowship covers tuition and fees for three years as well as a yearly stipend of \$23,000 for the first year, \$24,000 for the second year, and \$25,000 for the third year.

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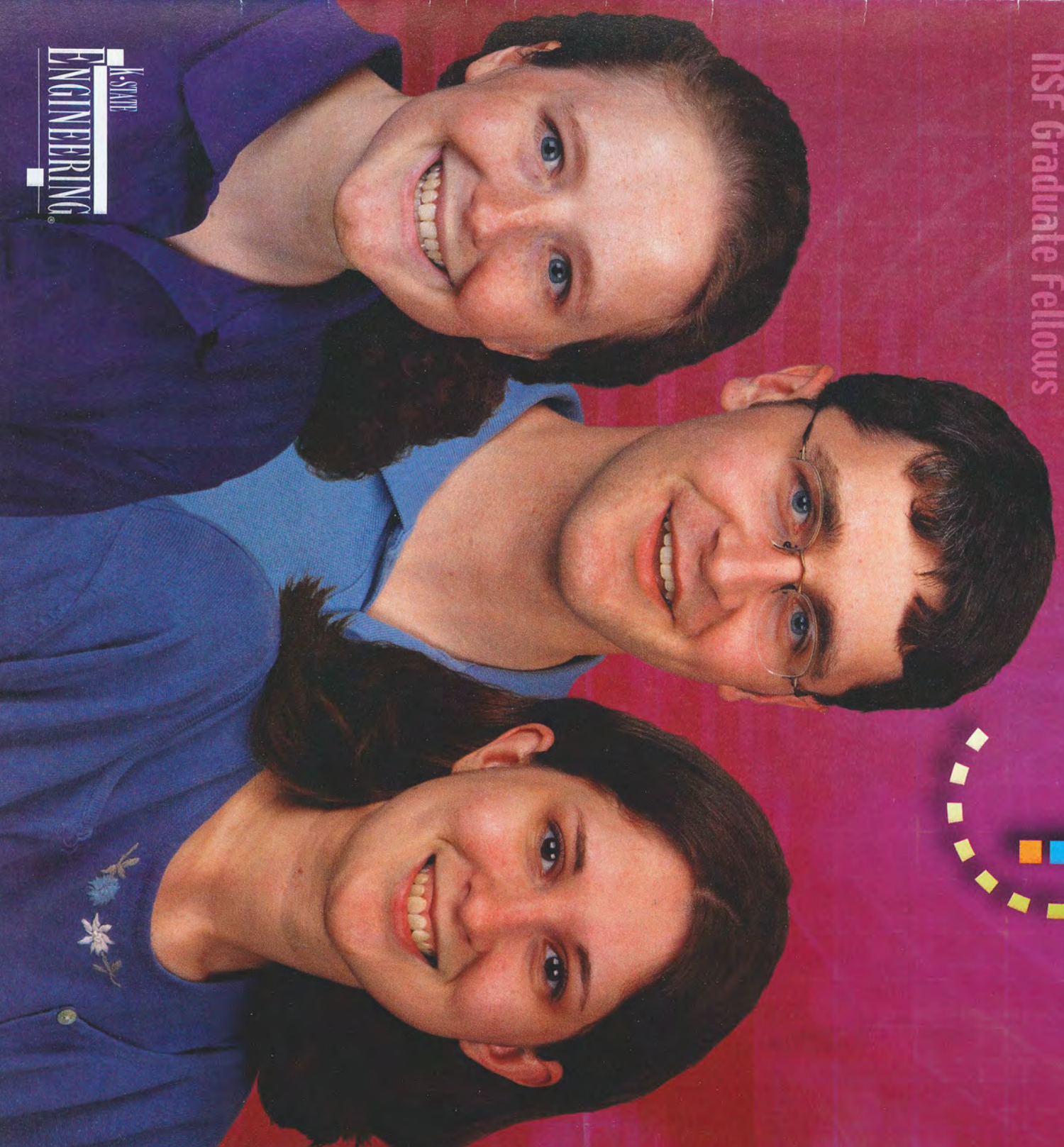


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