

# Tiny neutron detectors boost homeland security

# Impact

When Douglas McGregor accepted the position as associate professor of mechanical and nuclear engineering at K-State, he had more to move than just his personal belongings. He brought along the entire Semiconductor Materials and Radiological Technologies Laboratory (SMART lab) from its previous location at the University of Michigan.

The SMART lab has now been reassembled within the mechanical and nuclear engineering department in Ward Hall in a convenient location near the TRIGA Mark II nuclear reactor. This is where McGregor will continue his nine-year project of producing semiconductor neutron detectors—devices that can be used for a variety of neutron measurement applications, including detection of unauthorized nuclear weapons and materials.

“Very few universities have operating nuclear reactors, but Kansas State has one in good standing,” McGregor said, “and I need a nuclear reactor to conduct my research.”

Nuclear reactors for research, such as K-State’s TRIGA Mark II, are typically used as a source for neutrons. Since over 80% of McGregor’s research focuses on novel neutron detectors, it was necessary for him to have a reliable source for neutrons.

The essence of the small, portable detectors is a small wafer developed by McGregor and Ray Klann at Argonne National Laboratory. The working part of the wafer, which is about the size of a collar button, operates by fabricating a diode out of semiconductor material similar to silicon. The devices are coated to make them neutron sensitive, and thus able to detect neutron-induced events.

“The increased interest in this research has a lot to do with the fear of weapons of mass destruction being moved into this country,” McGregor said. “Some nuclear weapons emit neutron radiation, and these detectors add to our ability to locate such devices, thereby increasing homeland security.”

Because of their small size, low power needs, and low cost to produce, the detectors can be deployed in places where people might not expect them to be. They are so small that security personnel can clip them onto their lapel or belt, or they can be hidden or concealed to covertly monitor people and cargo in transit.

“The bottom line is, they fill the bill for this type of use better than anything else currently out there,” he said.

Several patents on the detectors are pending. Two patents have been awarded, and companies are now in negotiations for licensing agreements to manufacture and deploy the devices.

“The detectors can be batch-produced at a low cost of only a few dollars apiece for some models,” McGregor said.

continued on page 3



Douglas McGregor, left, MNE, assoc. prof.; in background, students in clean room of SMART lab

## On the outside cover

2003 Open House torch runners, from left: Vince Cline, ARE; Keil Regehr, EECE; Andrew Burris, MNE; Dean Terry King; Katie Kuhn, CHE; Amy Urban, CNSM; Jared Barnhart, CE; unidentified student; Kelli Simmelink, IMSE; and Ed Larson, BAE

# Message from the Dean

*Education is the passport to the future, for tomorrow belongs to those who prepare for it today.*—Malcolm X

At the heart of these words is the message that education cannot be separated from preparation, resulting in “ownership” of the future. How then can we in this profession expect to succeed without planning and laying out the groundwork for that success?

Under the directive and impetus of the advisory council and college leadership team, we have recently put forth four key priorities of pursuit for the College of Engineering:

- Finding new sources of revenue
- Increasing diversity
- Increasing visibility and recognition
- Increasing faculty salaries

In the pages of this issue of *Impact*, you'll find evidence of our progress in these endeavors. In support of the first item, you'll notice the hiring of a new development team member, Kelly Levi. Further components of this priority will be strengthening our connections in Washington D.C. in order to capitalize on targeted investment opportunities, and always looking to increase our research agenda.

Women students make up 13 percent of our current enrollment. This should be a much higher percentage, judging from the numbers at our peer institutions. Fifteen percent of Kansas high school graduates are

minorities—our enrollment in that category is 6 percent. We are determined to do better in these areas. The Spainhour's funding of the WESP chair and our industry partners' support of our MEP program, on page 3, are two strong examples of our commitment to increasing diversity.

Publication and distribution of *Impact*, to more than 22,000 addresses, is a major thrust toward increasing our visibility and recognition. Each issue, and this one is no exception, its pages are filled with the successes of our students, faculty, and alumni. But we are also making a formal plea to this accomplished group to help us in another way. We're asking that they be willing to go out and speak at high schools and industries, to civic groups and state agencies, and support our claim that a K-State engineering education can make a difference, that our college has much to offer any or all of these entities.

We want our students to be educated by the top professors in the country—individuals like Douglas McGregor, who is featured on the inside cover. Providing competitive salaries is imperative if we're to attract and retain these outstanding faculty members, who not only contribute so much to the educational capital of our nation but to the overall benefit of our students.

Four separate, planned priorities, the success of one intrinsically linked to the success of the others. In pursuing each, we can succeed in all, and be ready to show our passport.

*Terry S. King*  
Terry S. King, Dean



## Seaton Society

Seaton Society members are those who contribute \$500 or more annually to any area in the College of Engineering. The college recognizes the following 2002 members:

Directors Level \$10,000 +	Steve McKinnis Ernest and Betty Nelson Bill and Joyce Owen Anthony Pianalto Donald and June Prigmore R Michael Rhoades Robert Sextro Howard and Patricia Sherwood Bob and Lila Snell Al and Mary Stecklein Matthias and Dorothy Strahm V Jim and Deborah Sylvester John and Jacquelyn Zidek David and Sharon Zimmerman John and Patricia Zimmerman	Daryle Hager Hekmat Hakimian John and Colleen Harrison Scott Heidtbrink Duane and Mary Henderson James and Barbara Hengelfelt Perry and Erin Henry Albert and Geneva Henry Jr James and Jada Hill Joe and Pamela Hodges Mark and Beth Hodges Joe and Nancy Holland Phil and Jeannie Hollis Carl and Terri Hopkins Rodney and Kay Horn Darrell and Nancy Hosler Henry and Chai-Chong Hwang Steven and Diana Janda Neal and Susan Johnson Dennis Kerschen James Keusler Mary Lee Kind Terry and Kathleen King David and Hope Krug Mike and Vera Lackey Don and Anne Lenhart Y Sean Lin Stephen Llamas Larry Martin Dana Mathes John and Nancy Matthews Thomas McMillen Jamie Meeks and Betsy Sloan-Meeks Marsha Meili Eugene and Mary Mingle Thomas and Joan Mistler Allen Moon Darci Moore Kyle and Betty Moran Phillip and Janice Morris Ed and Jeanne Mulcahy Jr Joe and Donna Murphy Don and Karen Norton Benjamin Olson Raymond Owen Nelson Parrish Greg Quigley Balaji Ramarao Jimmy Rash Alwin Rector Gerald Reitmayer Ann Ridge Jerry Robertson Clyde Rodkey Jr Michael Rogers Haven Rolander William Ross Louis and Dorothy Rotar Grover Rundell Dan and Marsha Ryser Fred and Barbara Sachen Donald and Ann Schaechtel Melanie Schaker Randell and Mary Sedlacek Dennis and Vicki Shanks Charles and Connie Sheppard William Shump Douglas and Cynthia Smith Douglas and Jane Smith	Robert and Peggy Smith Robert and Colleen Snell Jr David and Dorothy Soldan Fred and Lois Stoller Ernest and Susan Straub III Kenneth and Coleta Suiter William Swenson Kenneth and Janet Switzer Sean Szucs Norman and Donna Tetlow Gordon Thayer Bob and Bernita Thorn Eugene and Barbara Thorson Darrel and Angelika Toothman Jr Dwayne and Denise Vaughn Thomas Vaughn Rex Vernon James Walker Virg Wallentine Herb and Mary Sue Whitney Randell Wiechman Carl Wilson Wayne Wittenberger Joseph Young Jeffrey and Jane Zimmerman Robert and Patricia Zrubek	Charles and Joyce DeForest Daniel Denneler Kevin and Kimberly Diefenbach Scott Dodge Michael Dole Charles and Joan Dorgan Les Doty Icic Eisenhour Ronald Esau Keith Fager Gustave and Helen Fairbanks Joel Farrell Marc Feyh Vernon Fish Rex and Gloria Garrelts Willard Geiger II Jerry and Janice Gfeller Larry and Kathleen Gfeller Calvin and Joy Gooden Gregg and Cindy Greenwood Darwin and Beverly Guinn Kristi Hankley Richard Hanson Walter Hanson Todd and Janell Harman Greg Harms Jay and Therese Hathaway Richard and Barbara Hayter Clay Heady Bob and Susan Healy Brent and Bonnie Heidebrecht James Heise Dean Hiebert Ray Hightower Rex and Rebecca Hillman James and Betty Holman James Holub Jim and Mary Ann Hooker Michael and Bobi Hoover Robert Hubbard Jeremiah Hubbard Carl and Mary Ice Alex Intfen Don and Donna Jermain James and Judith Johnson Lois Johnson Byron Jones James Kamphaus Robert and Vickie Keverer Scott Kelley Jackie Kelly Ronald Kelly Michael Kelso Ray Kennedy William Kennedy Jr Dallas Kibbe Robert and Jean King Todd Korte Young and Jochun Lai James and Diane Lambie Chris Lewis Shane and Kelly Lutz Robert MacKendrick Jr Jeff and Wendy Macoubrie Mark and Debi Malone Jerry Marr Lewis and Marjorie Martin Charles May Sr Warren McElroy	Charles Medvitz Robert Meyer Warren and Elaine Miller William and Julie Miller Robert Moyer Kyle and Sharon Murdock Charles Neighbor Lawrence Nelson William Nixon Otto and Ruth Oberhelman Jr R J Osborn Larry Owen Lonnie Paquette Kenneth Pecis Max Peterson Ron and Sammie Pletcher Van and Sharon Pooler Keith Pugh Rick Ranhotra Jerry and Judy Reed Kirk Reid Tom and Karen Roberts Ken and Sue Roberts Douglas and Mary Robker Dennis Rogalsky Jim and Marlene Roth Ira Rundell Keith Schoonover Larry Schulte Jr Donald and Phyllis Schultz John Downey and Shannan Seely Martin Severance Richard and Marian Shimer John Shupe Jr Scott Skahan Randall Smischny Steven Spence Austin and Joan Stedham Christine Steichen Michael and Rosie Stevens John Stewart David and Julie Stewart Robert Stone Claire Stroede Kenneth Stuckey Donald Stuewe Robert Swenson Richard Teichgraber Ronnie Thomas Loren and Martha Tregellas Gary Turner Gary and Carla Van Hoesen Jeffrey Vander Laan Reuben and Helen Vanderwilt Jr Tony Veith Harold Volkmann Clarence and Jean Waters Marcia Watkins Vernon Wegerer Kerry Williams Clifford Wilson John and Mary Wilson Landra Wilson Athena Wong Margaret Yaeger Rodney Young	
Leadership Circle Level \$1,000 to \$2,499	Diane Johnson Adamec Mike Anderson Duane and Mildred Babcock P T and Tori Baehr Brian Bahl Jack and Alberta Bailie John Baker Paul Ballinger and Nancy Ruffcorn Sherri Barragree John and Ruth Bascom Larry and Judy Bennington Jerry and Barbara Boettcher Lyn Boyer Arden and Karen Bradshaw Bill and Cindy Brand Bill and Sandra Brungardt Jean and Marjorie Burton Michael and Alice Chen Te-Yu and Shu-Chen Chen Mau and Shu-Fen Chow Clyde K Rodkey Jr Howard and Alice Coleman Richard Cook Matthew Dassow Laurie Davidson Gary Dick Lionel D'Luna Robert Dubois James and Candace Duncan Terry and Ann Ecklund Dexter Eggers and Ann Zimmerman Blaine and Carolyn Englund Dennis and Deborah Fair Mont and Marsha Fair Jon and Mary Feldhausen Eddie and Carol Fowler Byron Freeby Lynn and Sally Frick Jerry and Donna Friesen Dan and Donna Fuhrman Bill Funk Richard and Linda Gallagher Sanjay Gattani Stevin Gehrke Donald Gemachlich Barry George Jr Jason and Stephanie Gillig Chris and Denise Govert Preston and Norma Goodwin Kurt Grier David and DeAnn Haake	Scott Aberle Joseph Allison Joan Ambrose Kurt and Kristen Anderson John and Beth Atherton Chance and Donna Bahadur Willis and Beth Barrett Willis and Ardyce Bell Norm Bennett Lisa Besa Robert and Renee Biby Kevin and Amy Boehringer Jeffrey Bone Russell Bone Michael and Kathleen Brindley Wesley Britson William and Mary Brooks Kim Brown Bob Brown Jr Donald and Mary Broyles William Bucher Wayne and Stephanie Buhner Mark Butler Richard and Wendy Cain Tom Carlisle David Carr Evan Carstedt Lyle Carter Marie Cecil Bong Chang Donald and Ilavere Chesnut Cheng-Ching Chi Edward Clements Ken and Opal Collins Warren Corbet Mike Cornett Mark Cross Clyde Dalrymple Jr Max DaMetz James and Patty Dancer	Colleague Level \$500 to \$999	Charles and Joyce DeForest Daniel Denneler Kevin and Kimberly Diefenbach Scott Dodge Michael Dole Charles and Joan Dorgan Les Doty Icic Eisenhour Ronald Esau Keith Fager Gustave and Helen Fairbanks Joel Farrell Marc Feyh Vernon Fish Rex and Gloria Garrelts Willard Geiger II Jerry and Janice Gfeller Larry and Kathleen Gfeller Calvin and Joy Gooden Gregg and Cindy Greenwood Darwin and Beverly Guinn Kristi Hankley Richard Hanson Walter Hanson Todd and Janell Harman Greg Harms Jay and Therese Hathaway Richard and Barbara Hayter Clay Heady Bob and Susan Healy Brent and Bonnie Heidebrecht James Heise Dean Hiebert Ray Hightower Rex and Rebecca Hillman James and Betty Holman James Holub Jim and Mary Ann Hooker Michael and Bobi Hoover Robert Hubbard Jeremiah Hubbard Carl and Mary Ice Alex Intfen Don and Donna Jermain James and Judith Johnson Lois Johnson Byron Jones James Kamphaus Robert and Vickie Keverer Scott Kelley Jackie Kelly Ronald Kelly Michael Kelso Ray Kennedy William Kennedy Jr Dallas Kibbe Robert and Jean King Todd Korte Young and Jochun Lai James and Diane Lambie Chris Lewis Shane and Kelly Lutz Robert MacKendrick Jr Jeff and Wendy Macoubrie Mark and Debi Malone Jerry Marr Lewis and Marjorie Martin Charles May Sr Warren McElroy	Charles Medvitz Robert Meyer Warren and Elaine Miller William and Julie Miller Robert Moyer Kyle and Sharon Murdock Charles Neighbor Lawrence Nelson William Nixon Otto and Ruth Oberhelman Jr R J Osborn Larry Owen Lonnie Paquette Kenneth Pecis Max Peterson Ron and Sammie Pletcher Van and Sharon Pooler Keith Pugh Rick Ranhotra Jerry and Judy Reed Kirk Reid Tom and Karen Roberts Ken and Sue Roberts Douglas and Mary Robker Dennis Rogalsky Jim and Marlene Roth Ira Rundell Keith Schoonover Larry Schulte Jr Donald and Phyllis Schultz John Downey and Shannan Seely Martin Severance Richard and Marian Shimer John Shupe Jr Scott Skahan Randall Smischny Steven Spence Austin and Joan Stedham Christine Steichen Michael and Rosie Stevens John Stewart David and Julie Stewart Robert Stone Claire Stroede Kenneth Stuckey Donald Stuewe Robert Swenson Richard Teichgraber Ronnie Thomas Loren and Martha Tregellas Gary Turner Gary and Carla Van Hoesen Jeffrey Vander Laan Reuben and Helen Vanderwilt Jr Tony Veith Harold Volkmann Clarence and Jean Waters Marcia Watkins Vernon Wegerer Kerry Williams Clifford Wilson John and Mary Wilson Landra Wilson Athena Wong Margaret Yaeger Rodney Young	
Executive Level \$5,000 to \$9,999	Bruce and Ruth Bachus Robert and Rita Dorgan Bill Dunn III Charles and Jean Eby L T and Eva Fan Mark and Susan Galyardt James and Susan Koelliker Mark Larson and Donna Kortwitz Ken and Ellen Lewis Sr Sandi Mauch-Bieber Marcella McDanel David Smoot Virgil and Jane Snell Bill and Susan Stannard Lawrence and Martha Stover Larry and Eleanor Strecker Debbie Swinney	Alice Fiedler Obed Fricke Gordon and Joyce Goering William Hauber Virginia Honstead Mark and Margaret Hulings Cleve Humbert Meilang and Ching-Lai† Hwang Bruce and Jeane Johnson Gary and Helen Johnston Linda Lee	Mildred Lee Tzi and Tsi Lin Harold and Olympia Lonsinger Mike and Cindy Manley Louie Marshall Kenneth and Kay Martin Dean and Lavon Morton Laree Mugler Elmer and Vivian Munger Phillip and Jean Myers Carl and Janet Nuzman	Dale Olson Gerald and Arlene Oppliger Clair and Sara Palmer LeRoy Paslay † Perry and Virginia Peine Ray and Virginia Richardson Stanley and Donna Rieb June and Ellen Roberts Jim and Linda Schroeder Gilbert and Debra Selsor Rhea and Pat Serpan	Hal and Mary Siegle Lloyd and Sarah Smith Howard Spainhour Charles and Karen Stryker Keith Steyer Robert and Ann Syler Del and Sharon Thielman Frank and Barbara Tillman Bob and Betty Tointon Frank Westerman Jr.	
Partner Level \$2,500 to \$4,999	Charles Bissey Bradley Blackman Hazel Dixon Martin and Melodee Eby Jr Jenny Erdossy Larry and Laurel Erickson Gilbert and Jane Ferguson Jerry and Rebecca Harkey Wayne and Barbara Harms Art and Georganne Hiser Kevin and Dianne Honomichl Edward and Ming Hsu Mel and Beth Kopf Bradley Kramer Tim Lenz Mary Lipper Scott Love	Richard Clarke Dick and Mary Elizabeth Corbin Carl* and Ruth Coonrod Roger and Mary Coulter Terry and Tara Cupps Stuart and Janie Curtis Dean Dillon Joe and Sherry Downey Loring and Kathryn DuBois Gary and Peggy Edwards Ike and Letty Evans	Founders Level: The Seaton Society awards lifetime membership to its founders. Each has made a commitment in excess of \$100,000 to engineering education excellence.	Founders Level: The Seaton Society awards lifetime membership to its founders. Each has made a commitment in excess of \$100,000 to engineering education excellence.	Founders Level: The Seaton Society awards lifetime membership to its founders. Each has made a commitment in excess of \$100,000 to engineering education excellence.	
Founders Level	Ray and Barbara Adee Arnold and Terrie Allemang James and Betty Allen Tom and Marilyn Barrett Vonnice Bateman Walt Bellairs Marlin Breer and Joan Russell Gray Briedenthal † Frank and Elizabeth Burke Chuck and Linda Burton Charles Carter	Richard Clarke Dick and Mary Elizabeth Corbin Carl* and Ruth Coonrod Roger and Mary Coulter Terry and Tara Cupps Stuart and Janie Curtis Dean Dillon Joe and Sherry Downey Loring and Kathryn DuBois Gary and Peggy Edwards Ike and Letty Evans	Alice Fiedler Obed Fricke Gordon and Joyce Goering William Hauber Virginia Honstead Mark and Margaret Hulings Cleve Humbert Meilang and Ching-Lai† Hwang Bruce and Jeane Johnson Gary and Helen Johnston Linda Lee	Mildred Lee Tzi and Tsi Lin Harold and Olympia Lonsinger Mike and Cindy Manley Louie Marshall Kenneth and Kay Martin Dean and Lavon Morton Laree Mugler Elmer and Vivian Munger Phillip and Jean Myers Carl and Janet Nuzman	Dale Olson Gerald and Arlene Oppliger Clair and Sara Palmer LeRoy Paslay † Perry and Virginia Peine Ray and Virginia Richardson Stanley and Donna Rieb June and Ellen Roberts Jim and Linda Schroeder Gilbert and Debra Selsor Rhea and Pat Serpan	Hal and Mary Siegle Lloyd and Sarah Smith Howard Spainhour Charles and Karen Stryker Keith Steyer Robert and Ann Syler Del and Sharon Thielman Frank and Barbara Tillman Bob and Betty Tointon Frank Westerman Jr.

# Spainhour Chair a 'gift' from the family

"This is a gift from all of us—Paul, Marilyn, and I are doing this as a family."

These were the words of Howard Spainhour, Lenexa, in describing the motivation behind establishment of the Spainhour Family Chair for Women in Engineering and Science.

"All of our family went to K-State, and all four of us came out with a good education in our chosen fields, which we appreciated," Spainhour said. "This is an opportunity for us to recognize the benefits of our K-State education."



Irma Spainhour

The purpose of the chair, established with a gift of \$500,000, is to cultivate the science and engineering interests of women from middle school through postgraduate levels. The gift is also to perpetuate the memory of Megan E. Taylor, daughter of Marilyn and Bill Taylor and granddaughter of Howard, who died in a bicycle accident in Germany while participating in a high school exchange program; and also the memory of Irma Lyle Stanbery Spainhour, Howard's late wife. The recipient will hold the title of Director of the Women in Engineering and Science Program (WESP) in the Colleges of Engineering and Arts and Sciences at Kansas State University.



Megan Taylor

The combined benefit to both colleges makes the gift a good fit for the Spainhours. Howard graduated with a degree in electrical engineering in 1935, and Irma that same year with a degree in arts and sciences. Their daughter, Marilyn, graduated in 1966 with a degree in modern languages and their son, Paul, graduated in 1969 in electrical engineering.

"For the Colleges of Engineering and Arts and Sciences, this presents an historical moment of great importance," said Suzanne Franks, founding director of WESP at K-State. "It is our chance to be a true leader in gender equity in U.S. engineering and science education."



From left, Paul Spainhour; Samatha Gangapuram, grad. student CS; Suzanne Franks, founding director, WESP; Howard Spainhour; Jennifer Whitlock, program assistant, WESP; Mitzi Richards, development director, College of Engineering; and Bianca Luna, sr. BioChem.

Mr. Spainhour's generosity has given us the gift of prestige, institutionalization, and resources."

Franks said the endowed position will make others "sit up and take notice that something good is going on at K-State because someone put up significant dollars to support it."

She also believes it helps to institutionalize the program and create stability. "In these times of economic stress and budget constraints that universities across the nation are now experiencing, programs like WESP can be

at real risk," she said. "But with an endowed director's chair, the program's survival and continuation are ensured."

"WESP seeks to serve young girls and women who are interested in science and engineering. Institutionalization of the program and the increase in resources and prestige mean that WESP can keep delivering the programs it has that are working well, as well as create and implement new ones."

—by Mary Rankin

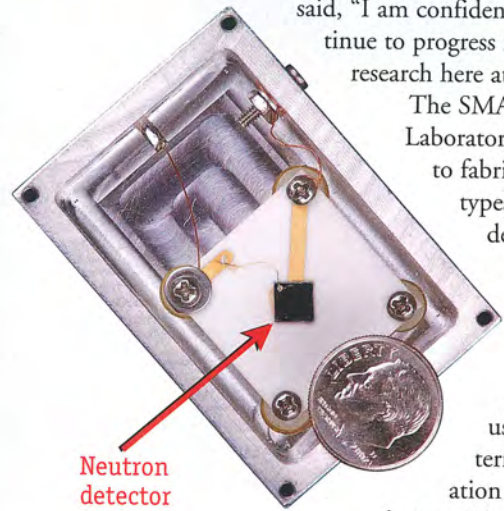
## Boost to homeland security

continued from page 1

Nearly 70 percent of McGregor's funding on the project has come from the U.S. Department of Energy and 30 percent from the Department of Defense.

"With the new SMART lab," he said, "I am confident I can continue to progress in my research here at K-State."

The SMART Laboratory is dedicated to fabricating various types of radiation detectors.



Neutron detector

Central to its make-up is a class 1000 clean room used for patterning the radiation detector designs. The clean room

houses photolithography equipment such as mask aligners and bake ovens, whereas the remainder of the SMART lab houses high-temperature tube furnaces, evaporative coating machines, and a variety of polishing and etching equipment. Additionally, it is equipped with radiation sources and electronic nuclear instrumentation to test and characterize the radiation detectors built in the processing areas.

McGregor's educational background includes both a bachelor's and master's degree in electrical engineering from Texas A&M University, and both an M.S. and Ph.D. in nuclear engineering from the University of Michigan.

When not working with both graduate and undergraduate students on his research projects, McGregor also teaches two courses in the college related to neutron detectors: Principles of Radiation Detection (NE 512) and Nuclear Reactor Laboratory (NE 648).

—by Mary Rankin with contributions from K-State Media Services



## Industry partners support MEP

Sara Barrientos, ME '00, system engineer with Black & Veatch, meets with students at a reception in the Engineering Complex Atrium hosted by the Multicultural Engineering Program (MEP) prior to the Feb. 5 Engineering Spring Career Fair. Thirteen companies and agencies provided support for the reception. More than 40 industries, representing all areas of engineering, computer science, and construction science from across the U.S. participated in the event jointly sponsored by MEP, the College of Engineering, and K-State Career and Employment Services.

## Grier appointed to Kansas Board of Regents

A K-State engineering graduate has been appointed to the Kansas Board of Regents.

James R. Grier III, CE 1960, was appointed by former Governor Bill Graves in June 2002 to serve on the board of regents for a term of four years and was confirmed by the Kansas Senate in January. Within the board, Grier serves on the Academic Affairs Committee, University Research and Development Enhancement Corporation Board, and the KSU Research Foundation Board.



James Grier

"I hope that I can help facilitate and improve education and training for the workforce as Kansans seek a more productive economy and a better life," he said.

Grier is the chairman and CEO of Martin K. Eby Construction Co., a general contracting firm he has been employed with since 1960. He is a national board member of the Associated General Contractors



Make plans now to attend the

Seaton Society Banquet & Hall of Fame Festivities

November 8, 2003

at the K-State Alumni Center

and a member of the American Society of Civil Engineers. Grier has served as a reserve officer in the U.S. Army Corps of Engineers for eight years.

He received the Alumni Fellow award in 1991 and was inducted into the College of Engineering Hall of Fame in 1993.

The Kansas Board of Regents is a 19-member body that governs the six state universities and approves programs and budgets of 19 community colleges, six technical colleges, four technical schools, and a municipal university. The board deals with educational policies, programs,

services, providers, and other systems in an effort to improve and maintain the high quality of post-secondary education in Kansas. The board also coordinates programs such as adult education, the qualified admissions curriculum for high school students, financial assistance for education, and many others.

—by Neely Holland

# 2003



Turning

# Potential



Clockwise from above, EECE "engi-nerds" kick off skit; Dean King with 2003 St. Patricia and St. Pat; Kubota tractor—gift to BioAg dept. from Barry Cowles, B and G Tractor Boyz, Louisburg, Kan.; "cutting-edge" scene from CNSM skit; ARE accepting Yellow Brick award; windy-day look for Steel Ring member Abigail Seim, ARE; visitor checks out CHE students' Chem E car.

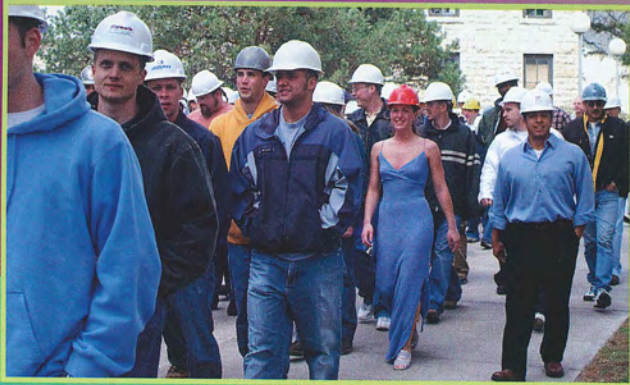
Left to right across bottom of page, future engineer(?) takes in parade and skit activities with Dad; Jimmie Schwartz, CNSM, wins Nissan Frontier pickup in Telefund drawing; solar car display on Durland lawn draws attention from visitors; ARE students do a take-off on the Jackson Five.



# Open House



Left to right, high school student studies circuitry setup in EECE display; young visitor enjoys BioAg water pumping system; CNSM students march in parade, formal attire optional; BioAg skit spoofs "The Dating Game."



## 2003 Open House Awards

Outstanding Dept.—CNSM  
 Yellow Brick—ARE  
 Best Tech Presentation—CHE  
 Best Open Class Display—CNSM  
 Best Limited Class Display—IMSE  
 Best Fresh/Soph. Display—CNSM  
 Best Curriculum Display—CNSM

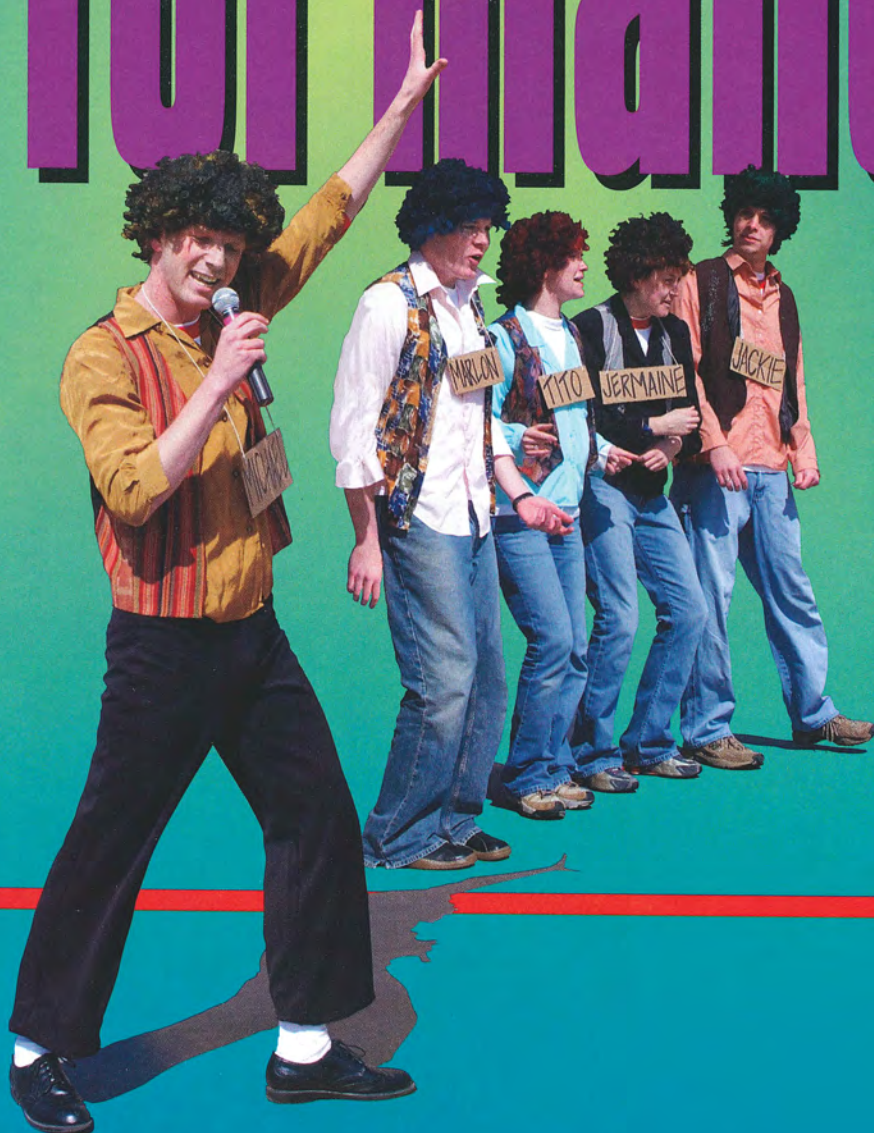
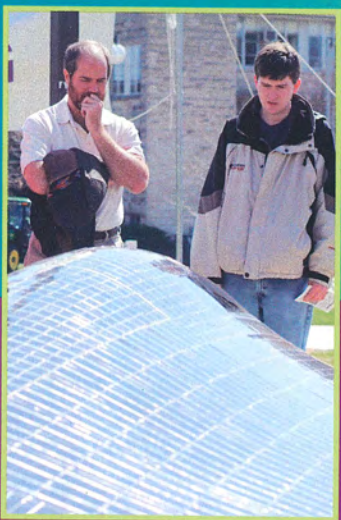
## Engineering Banquet Awards

Advisor of the Year—  
 Chuck Burton, prof., ARE & CNSM  
 W. Leroy Culbertson Steel Ring  
 Leadership Scholarship—  
 Julie Quackenbush, sr., IMSE

## St. Pat and St. Patricia

St. Pat—  
 Ben Sommers, sr., MNE  
 St. Patricia—  
 Heather Marcrum, sr., IMSE

# Into Performance



## Company/Leader of the Year



Patrick Connelly

The ICE Corporation of Manhattan, Kan., an electronic design and manufacturing company specializing in electronic systems and subsystems, was honored as the Tau Beta Pi Company of the Year at the organization's April 28 banquet. ICE is a privately held company that has been in operation since 1974. Its expanded product line provides custom-designed electronic controllers for a variety of

applications worldwide including the aircraft industry, agriculture industry, and the energy market.

ICE's president and CEO, Patrick W. Connelly, Jr., was chosen as Leader of the Year for his support and dedication to K-State engineering. He is well versed in all aspects of a high-tech business and provides significant insight into the problems and opportunities in the commercialization of high-tech products.

Connelly is currently on the board of the Mid-America Commercialization Corp., an advisory board member of the Advanced Manufacturing Institute, and a member of the Centers of Excellence Committee of the Kansas Technology Enterprise Corporation. He is a native Kansan who attended Kansas State University and served in the military.

"It is an honor for the college to have Patrick Connelly as our 2003 Leader of the Year," said Terry King, dean of the College of Engineering. "His availability to visit classes and speak with our students this spring was a valuable experience for them."

## NSF graduate fellowship for Thornton



Julie Thornton

With plans to continue her education at the graduate level, Julie Thornton, senior in computer science and mathematics, will have that pursuit greatly aided with the recent awarding of a nearly \$40,000 National Science Foundation Graduate Research Fellowship.

Thornton, who was named a Goldwater scholar in 2002, is currently a research assistant in the computing and information sciences department in the College of Engineering. She plans to pursue a master's degree in mathematics at K-State, and then continue her studies toward a Ph.D.

According to the National Science Foundation, the select students who receive the graduate research fellowships are expected "to contribute significantly to research, teaching, and industrial applications in science, mathematics and engineering."

## Stryker elected vice president



Travis Stryker

Travis Stryker, fifth-year student in ARE, was elected K-State student body vice president in March.

He and his running mate, John O'Hara, student body president, won the elections with 59.8 percent of votes.

Stryker credits the College of Engineering for much of his success.

"The College of Engineering offered me the opportunity to get involved and become a leader within different organizations," said Stryker. "Our faculty is always encouraging students to get involved."

In addition to student body vice president, Stryker is the privilege fee chair, and also served as an engineering senator for the past two years. He is a member of Steel Ring, the engineering senior honor society.

"The College of Engineering has enabled me to experience all levels of leadership and helped to get me to where I'm at now," he said.

—by Neely Holland

# Sylvester named Alumni Fellow

Alan L. Sylvester, CE '75, has been named the College of Engineering Alumni Fellow for 2003, in recognition of his distinguished career. He is a general manager with CITGO Petroleum Corp., a privately owned petroleum refining and marketing company in Tulsa, Okla.

Sylvester was on campus Feb. 24 and 25 where he took part in meetings with faculty and students, toured facilities and labs, and visited various classes in the college.

"Alan Sylvester is well respected in his field, and we are honored to have a person of his caliber be recognized as our Alumni Fellow," said Terry King, dean of the College of Engineering.

After earning his bachelor's degree from K-State, Sylvester went on to complete a master's degree in engineering management from the University of Tulsa. He is a registered professional engineer.

He has supported the recruitment and hiring of K-State engineering graduates throughout his career, which has included a variety of engineering and management positions with CITGO and other petroleum industry firms.



Alan Sylvester

## DSA 2003: Edward Mulcahy

Edward J. Mulcahy, CE 1959, was presented with the College of Engineering Distinguished Service Award at commencement ceremonies May 17. This award is given annually to a prominent person whose career has contributed nobly to his or her profession.

Mulcahy is a principal of Transystems Corporation, a national transportation consulting engineering firm with corporate offices in Kansas City, Mo. Prior to formation of Transystems in 1995, he was a founding principal of Johnson, Brickell, Mulcahy and Associates, Inc., a consulting engineering firm established in 1966 in Kansas City, Mo.

During his more than 43 years of engineering practice, he has received numerous awards and honors for service to his profession, industry, and community. These include the 2002 Professional Engineer in Private Practice award from the National Society of Professional Engineers; designation in 2001 as



Edward Mulcahy

a Fellow in the American Council of Engineering Companies; and the 2001 Private Sector Service Award from the American Public Works Association. In 1966, he was inducted into the K-State College of Engineering Hall of Fame.

Mulcahy's past service includes serving as president of each of the following: American Council of Engineering Companies of Missouri, Kansas City Chapter—American Public Works Association, Kansas City Section—American Society of Civil Engineers, and Institute of Transportation Engineers—Missouri Valley Section. At the national level, he is currently senior vice chair of the American Council of Engineering Companies.

In addition to his K-State degree, he has a B.A. in mathematics from St. Benedict's College, Atchison, and an M.S. in engineering from Arizona State University. He is a registered professional engineer in Kansas, Missouri, and Mississippi.

## Impact readers respond

Many thanks to those who contacted us with identity information on the photo below, featured in the fall 2002 issue of *Impact*. Eight persons responded to "A look back," with the first contact being an email from Thom Norbury (EE '64) Shawnee, Kansas, who wrote to say the "second person from the right" was his former roommate Arthur Christy. Seeing the picture prompted him to try and locate Christy, which he was able to do through the Internet and email. Christy (IE '63), Austin, Texas, emailed us a few days later to identify everyone in the photo as follows, left to right: John Foresman, Larry Loomis, Robert Tichenor, Donald Kosaka, Arthur Christy, and Robert Woods. He said the picture was taken while the group was "planning for the 1963 IE Open House," adding, "My thanks to you for causing the reconnect with an old friend."

Two others actually in the photo also wrote. John Foresman (IE '63), Islamorada, Fla., was "extremely surprised to find [his] photograph on page 7" of *Impact*. He was able to identify "Art Christy" and "Don Kosaka," saying also, "The others I remember vividly, but after 40 years the

names are gone." Larry Loomis (IE '64), Marion, Kan., wrote to provide all six names and said, "I do not know where these men are now," but that "Bob Tichenor passed away several years ago."

Vince Sweat (AgE '64) emailed to identify Larry Loomis, "a classmate in several classes," and Ernie Griffith (ME '64) recognized both Larry Loomis and Bob Tichenor. Jon A. Still was kind enough to photocopy and send a page from the 1963 Royal Purple that had the same picture (but no names in the outline), and then identify five of the six men by picking them out (with lettered red arrows) from a group photo (also on that page) of members of the American Institute of Industrial Engineers.

And then there was the email from Mike Drescher, Canton, Kan., who said it was "a real wild guess," but he thought two of the men looked a lot like people he had gone to school with from 1988 to 1992 at KSU—a Craig Murphy and a Bart Heinz—and just maybe those in the photo were the fathers of his two friends. He thought it might be worth a call to find out . . . . Appreciated the suggestion, Mike, but our mystery had been solved.

—The editor



# Alumni News

Noel, born July 2, 2002. Chris is an instructor at the Naval Nuclear Power Training Command in Charleston, S.C. chris323@bellsouth.net

## Deaths

**George Gray Breidenthal** died April 8, 2003, at the University of Kansas Medical Center. He attended Kansas State University, was an Air Force veteran of WWII, and retired as a Lt. Col. of the Kansas National Guard. He had a long and distinguished career in banking, retiring as president of Security National Bank in Kansas City, Kan.

A generous supporter of and lifelong friend to the College of Engineering, his donations to the institution totalled more than \$4.4 million. Breidenthal was a founding member of the Seaton Society. He was preceded in death by his wife, Maxine, and is survived by his son, George Jr., and two grandchildren.

### 1938

**Keith C. Walton** (EE) died Nov. 12, 2002, in Peck, Kan. He was a retired electrical engineer from Boeing Wichita. Walton is survived by his wife, Celia, a son, two daughters, five grandchildren, and two great-grandchildren.

### 1942

**Wilbert "Bill" Loewen** (ME) died Aug. 24, 2002, in Malvern, Pa. He worked for General Electric Facilities for almost 40 years. Loewen is survived by his wife, Dodie, a son, a daughter, and three grandchildren.

### 1944

**William R. Kimel** (ME) died December 5, 2002. He was a dean emeritus and professor emeritus of nuclear engineering at the University of Missouri-Columbia. Kimel had also been a professor and head of the nuclear engineering department at Kansas State University.

### 1949

**Robert Joseph Lehnen** (EE) died Nov. 16, 2002, in Gainesville, Fla. Lehnen was retired from General Electric Co. He is survived by his wife, Shirley, two children, and two grandchildren.

### 1951

**Walter Wilson Sondergard** (IE) died October 12, 2002, in Wichita, Kan. He worked as an engineer at Beech Aircraft Corporation in Wichita for 20 years and for Martin Marietta Corporation in Denver, Colo., for 15 years. Sondergard is survived by his wife, Joan, two sons, one daughter, and two grandchildren.

### 1950

**Phil Hurd** (AgE) retired from Hurd Engineering. He is now doing free consulting in foreign countries. maphurd@mailsmu.edu

### 1963

**John F. Foresman** (IE), Islamorada, Fla., retired in 2000. He was employed by the GM North American Car Group. jfforesman@aol.com

### 1979

**Patrick Nelson** (NE) founded Nelson Consulting Services, Inc., Los Alamos, N.M., in October 2001. The firm does environmental regulatory compliance work for industry and government. Nelson would love to hear from former classmates. patricknelson@qwest.net

### 1983

**Lorrie Blanchard Tietze** (NE) has been named manager of Interface Consulting, LLC. She provides training and consulting to increase productivity across human and technology boundaries. Lorrie, her husband, Kevin, and their family reside in Castle Rock, Colo. Lbtietze@interfaceconsultingonline.com

### 1984

**Todd A. Bednar** (CNSM) is the senior estimator at Turner Construction Company in Raleigh-Durham, N.C. He is responsible for all pre-construction activities in eastern North Carolina.

### 1985

**Randy Trautmann** (ME) is a senior applications engineer for Bosch Automotive in Farmington Hills, Mich. He and his wife, Stacy, have two children, Ryan and Chanelle. They would love to hear from former classmates. Rtrautmann@juno.com

**Robert Shuey III** (EE), Perry, Ga., was promoted to vice president and technical director for the MTC Engineering Group. He will be responsible for support of the U.S. Air Force Air Logistics Centers' sus-

tainment and aircraft modification business sector.

### 1986

**David W. Cooper** (ME) and wife, Kim, announce the arrival of their second daughter, Randi Marie. Cooper is a project engineer at Geoprobe Systems Inc. of Salina. kdcooper@kans.com

### 1988

**Bradley P. Badke** (EE) received a Ph.D. in electrical engineering from Arizona State University in December 2002. He is currently employed by Satloc in Scottsdale, Ariz., as a senior principal systems engineer.

### 1993

**Jack Carlson** (CNSM) is an engineering project designer for K-State Facilities Planning at Kansas State University. He was previously employed as the engineering technician senior for K-State Facilities Planning. jec@ksu.edu

**Alan Dyke** (EET) and wife, Denise, Plano, Texas, announce the birth of their daughter, Erin Nicole, born on September 27, 2002.

### 1996

**Steve Rogers** (ME) is doing flight controls research with the Institute for Scientific Research in West Virginia. He was previously employed by Raytheon doing missile guidance work and spent 12 years working on thermal controls for Boeing.

### 1997

**Richard Hendricks** (CMPEN) and wife, Angie (CMPEN), announce the birth of their first son, Ryan. Richard works for Intel and Angie works for Agilent Technologies in Austin, Texas. hedric@austin.rr.com

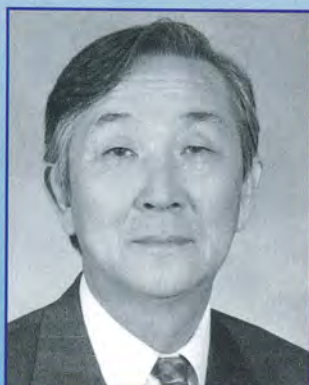
### 1999

**Lieutenant Junior Grade Chris Webster** (ME) and wife, Janet, announce the birth of their first child, Genevieve

## College of Engineering spring retirees



Charles R. Bissey, professor, retired after 33 years with the architectural engineering and construction science department.



Do Sup Chung, professor, retired after 38 years in the biological and agricultural engineering department.



N. Dean Eckhoff, professor, retired after 34 years with the mechanical and nuclear engineering department.



Charles K. Spillman, professor, retired after 34 years in the biological and agricultural engineering department.

## 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.

Want your classmates to contact you? Check the appropriate box below and we will include your address with your news. You must indicate that you want this information printed.

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# Callers set new record for Telefund

Student callers and alumni donors in the College of Engineering combined to set a new record of 3,335 pledges worth \$308,968 during Telefund 2003. Coordinated by the KSU Foundation, this annual event is the world's largest all-volunteer telephone campaign for higher education. The college's team of 320 volunteers made calls Feb. 9-13.

"Considering the economic and geopolitical challenges facing our nation, the success of Telefund 2003 is absolutely amazing," said Dean Terry King. "As an all-volunteer campaign, Telefund also helps our students gain a better understanding of the value of alumni support."

In the College of Engineering, Telefund revenue is divided with 80% of the funding providing student scholarships and 20% supporting student projects.

University-wide, pledge totals ran a record \$1,403,303 for 2003.



Lines were kept humming as Telefund volunteers seek alumni support.

## Levi joins development team



Kelly Levi

Kelly C. Levi has been named associate director of development for the College of Engineering. Her previous employment background includes four years as legislative director for Kent Glasscock, former Speaker of the Kansas House of Representatives; campaign manager for Glasscock's and former Attorney General Carla Sorell's gubernatorial campaigns during the 2001-02 election cycle; and community relations director for the Kaw Valley Girl Scout Council in Topeka.

Levi holds a bachelor's degree in journalism from Kansas State University, a second bachelor's in United States history from Wichita State University, and a master's degree in American studies from the University of Maryland in College Park.

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# Impact

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