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Levi joins development team

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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.
Tiny neutron detectors boost homeland security

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.
Education is the passport to the future, to be sure. Let us 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 meet this need 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:

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

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 introduction of a new development team member, Kelly Farrier. Further components of this priority will be strengthened our connections in Washington D.C. in order to capitalize on targeted investment opportunities and always looking to use our research agenda.

Women students make up 15 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 make this a higher priority, as we prepare for it today.

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“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 Sciences Program (WESP) in the Colleges of Engineering and Science Program (WESP) in the Colleges of Engineering and Arts and Sciences at Kansas State University.

The combined benefit to both colleges makes the gift a good fit for the Spainhous. 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 prestige, institutionalization, and resources,” 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. We at K-State are now experiencing, programs like WESP can be 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 created and are working well, as well as create and implement new ones.”
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 Dutland lawn draws attention from visitors; ARE students do a take-off on the Jackson Five.

2003
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 Colbertson Steel Ring Leadership Scholarship—Julie Quackenbush, sr., IMSE

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

Left to right, high school student studies circuity 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.”
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 control systems 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 a native Kansan who attended Kansas State University and served in the military.

“During the past two years, Patrick has shown an excellent commitment to K-State engineering. He is well versed in all aspects of a high-tech business and provides significant insights 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.

“Patrick Connelly has been a valuable asset to the engineering community at Kansas State University, both professionally and personally. He has contributed nobly to his or her profession.

Patrick Connelly

Travis Stryker elected vice president

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 help those in need where I’m at now,” he said.

—by Neely Holland

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). Shawnne, 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 Chryste, which he was able to do through the Internet and email. Chryste (EE ’63), Austin, Texas, wrote a few days later to identify everyone in the photo as follows, left to right:

John Foresman, Larry Loomis, Robert Tichenor, Donald Krouka, 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 reconnection with an old friend.”

Two others actually in the photo also wrote. John Foresman (EE ’63), Islandora, Fla., was “extremely surprised to find [his] photograph on page 7 of Impact. He was able to identify “Art Christy” and “Don Krouka,” saying also, “The others I remember vividly, but after 40 years the names are gone.” Larry Loomis (EE ’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 (AgrE ’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 cutline), 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 Dreshler, 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
Deaths

George Gray Breidenbach 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.

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.

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.

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.

Walter Wilson Sondergard (EE) 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.
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