The bachelor’s degree program in engineering at the University of Southern Indiana has received accreditation from the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET), the recognized accreditation body for college and university programs in engineering, applied science, computing, and technology.

The accreditation is retroactive from October 1, 2004. The announcement caps a process that began with a self-study in 2005, graduation of the first class of four-year engineering students in May 2006, and a two-day site visit in October 2006.

Eric Sprouls, chair of the Department of Engineering, said, “With accreditation, we have proved the quality of the program. It validates that we are doing what we should be doing to produce quality engineers to work in the profession.”

Sprouls said the site visit team was impressed with the support the engineering program receives from the University, the community, and the legislature.

“They also said they were happy to see the cooperation between departments in the Pott College — that we meet each week and talk back and forth with the math and physics people. These programs are very supportive to us,” Sprouls said.

Pott College to offer program in advanced manufacturing

An undergraduate degree program in advanced manufacturing to be administered by the Pott College of Science and Engineering was approved by the University of Southern Indiana Board of Trustees in September.

The expected implementation date for a bachelor’s degree program in advanced manufacturing is spring 2008 pending approval by the Indiana Commission for Higher Education (ICHE).

Eric Sprouls, chair of the Department of Engineering, said interest is strong for the advanced manufacturing program, especially among graduates of area high school programs in technology and transfer students from community colleges. Plans are to develop a free-standing manufacturing facility on the east side of campus to support the new program.

The program in advanced manufacturing evolved from ICHE recommendations. In 2002, the commission endorsed the agreement between Purdue University and USI for delivery of engineering education.

Pott College to offer program in advanced manufacturing

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Letter from the Dean

Welcome to the first edition of The Periodic Review, the newsletter of the Pott College of Science and Engineering. With an ever-growing vibrant and productive group of faculty, increasing enrollments, increased engagement activities, and outstanding students, the future looks bright! This past year resulted in the initial phase of development for several new academic programs, the accreditation of our engineering program, the funding for the new Business and Engineering Center, the beginning of a multi-year assessment program, and the development of the College Advisory Board and Student Advisory Board.

Recently, the college has undertaken many new initiatives to meet our vision of leadership in undergraduate science, technology, engineering, and mathematics (STEM) education. We have developed a strategic plan that will guide us in achieving our vision and have accepted a leadership role in the Indiana STEM Resource Network to improve K-12 student achievement in STEM areas.

Please enjoy The Periodic Review newsletter.

Dr. Scott A. Gordon
Scott A. Gordon, Dean
Pott College of Science and Engineering

“Engineering” continued from page 1

The department has purchased equipment and software to provide faculty and students with the most up-to-date facilities for teaching and learning.

“We are able to upgrade to the highest level. We are upgrading all the time,” Sprouls said.

Graduates

As of spring 2007, the engineering program has graduated 32 students. Ninety percent of the graduates are employed in their field; 76 percent are employed in the Tri-State region. Six students are on target to graduate in fall 2007 and another six in spring 2008.

Twenty-five different employers have hired Pott College engineering graduates. Sprouls said some graduates have earned starting salaries of more than $50,000. He expects employer demand to continue and even increase with ABET accreditation.

One company of the Pott College engineering program.

Collaboration

In addition to the new industrial engineering option, the engineering program is collaborating with the USI College of Business to explore the feasibility of an academic program that combines business and engineering. The proposed Business and Engineering Center will provide space and laboratories for students in business and engineering to work collaboratively on developing entrepreneurial ideas, including the design and marketing of new products.

Sprouls said an engineering physics option is also under discussion.

Demand

The Pott College introduced the engineering program in response to regional demand. The 1995 President’s Task Force on Workforce and Economic Development indicated a shortage of engineers.

USI President H. Ray Hoops said, "Perhaps no other program has the ability to have greater impact on a region in terms of economic development than engineering. USI expects this program to have a major effect on the region."

The engineering program has graduated 32 students. Ninety percent of the graduates are employed in their field; 76 percent are employed in the Tri-State.
New Business and Engineering Center to double engineering laboratory space

A new $29.9 million Business and Engineering Center will be the home for the engineering program, providing space for growth of the program as well as collaborative work with students and faculty in the College of Business.

Bonding authorization for the building was approved in 2007 by the Indiana General Assembly and groundbreaking will take place in 2008. The USI Foundation is concluding a $2 million campaign for supplemental support.

Completion of the center is expected in 2010.

The 117,000 square-foot classroom and laboratory building will serve both business and engineering programs with individual and shared space. Architecture, Helmut, Obata & Kassabaum (HOK, Inc.) of St. Louis and Hafer Associates of Evansville, are designing the building.

The center will offer twice the laboratory space that the present Technology Center provides for the engineering program. The engineering program will have 12 new laboratories, an engineering design center, and classroom space in the building. Located on the new quadrangle between the Liberal Arts Center and the Technology Center, the Business and Engineering Center will overlook Reflection Lake.

Dr. Scott A. Gordon, dean of the Pott College of Science and Engineering, said the location of business and engineering programs in the same building offers new opportunities for collaboration. Business planning, product design, and marketing are increasingly intertwined in today’s economic environment.

Gifts to the USI Foundation’s Campaign for the Business and Engineering Center will fund programmatic needs of the new building. Major gifts to date to support the engineering program include the following:

- Daniel M. and Janet L. Fuquay – $50,000, engineering design center
- Richard H. Merrick Family – $25,000, heat/thermodynamics laboratory
- Morley and Associates – $25,000, surveying laboratory
- Sterling Boiler and Mechanical Inc., Daniel G. Felker – $50,000, materials testing laboratory
- Victor V. Schriefer Jr. – $50,000, communications laboratory

Naming opportunities

Many naming opportunities are available for those who contribute to the Campaign for the Business and Engineering Center at the $25,000 and above level. A multi-year payment option for major gifts is available. A donor recognition display in the O’Daniel Atrium of the center will recognize gifts of $1,000 and above.

Doss, Scheller recognized with faculty awards

Dr. Paul K. Doss, associate professor of geology, and Dr. Kent W. Scheller, associate professor of physics, have been recognized recently with prestigious faculty awards.

Doss is the Integra Distinguished Professor for 2007. His ability to merge research, teaching, and service to the benefit of students, peers, and the public earned him the award, which was presented during USI Commencement in May.

Scheller is the 2007-08 H. Lee Cooper Core Curriculum Teaching Award winner. Scheller received ringing endorsements from faculty and students who cite his dynamic demonstrations that engage students’ imaginations and encourage them to apply physics to their daily lives.
USI STEM Education Center to offer summer programs

New summer programs for K-12 teachers, students

The University of Southern Indiana STEM (science, technology, engineering, and mathematics) Education Center will offer summer programs in 2008 for K-12 teachers and students.

Teachers will have the opportunity to attend curriculum alignment and development programs where they will study the gaps in curriculum and develop hands-on, inquiry-based science exploration activities to improve student achievement.

The STEM Education Center programs for K-12 students are designed to encourage more students to pursue careers in STEM areas. The 2008 programs may include a session just for girls that would concentrate on science and engineering-related topics which may be of special interest to them.

USI recently was chosen as the lead institution for southwestern Indiana in a statewide consortium to improve STEM education. The Indiana Science, Technology, Engineering, and Mathematics (I-STEM) Resource Network announced in May that it had received a $3.4 million operating support grant from Lilly Endowment. The grant supports the development of the STEM Education Center at USI.

The I-STEM Resource Network of higher education institutions is dedicated to improving K-12 student achievement in the STEM disciplines by focusing on professional development for K-12 STEM teachers, the creation of formal relationships between K-12 STEM teachers and institutions of higher education, and hands-on activities and learning opportunities for students and families. It will also focus on the relationship of STEM studies as an important factor in regional workforce development.

The USI center administered by the Pott College of Science and Engineering will offer outreach including professional development for science and math teachers, continuing education and graduate courses in science, math, and technology, and a content-rich and interactive Web site for students, teachers, parents, and policymakers. Plans also include creating a traveling laboratory that will take science to schools. Over the next several years, the STEM Education Center will seek corporate and private partnerships at a variety of sponsor levels for many activities.

The I-STEM Resource Network developed from an express concern about the supply of future engineers and scientists. Dr. Scott A. Gordon, dean of the Pott College, said, “The knowledge-based economy of our nation, state, and region depends upon a strong foundation in the STEM areas and the jobs created therein. “Take a look at any publication analyzing the ‘hot jobs’ or ‘in-demand occupations’ and you will find that most are either directly within or highly dependent upon STEM areas.”

A search of the Hoosier Hot 50 Jobs for Economic Growth Region 11 — Dubois, Gibson, Knox, Perry, Pike, Posey, Spencer, Vanderburgh and Warrick counties — reveals about 46 of the 50 top employment growth areas have a STEM component.

Pott College dean attends national STEM conference

Dr. Scott A. Gordon, dean of the Pott College of Science and Engineering, recently attended the National Leadership Development and Strategic Planning Symposium on K-16 Science Education in Washington, D.C., as part of a five-member Indiana leadership team in STEM education.

Conference participants heard information from several significant studies showing how children learn science.

“In Indiana, we must review how we teach science in our schools and put more emphasis on what has been shown to work — hands-on, guided learning activities,” Gordon said. “We heard a lot of states tell us how this has improved achievement and encouraged more students to go into science. We want to adopt some of these approaches.”

Regional geology meeting in Evansville

The 42nd annual meeting of the North-Central Section of the Geological Society of America will bring more than 500 geologists to Evansville April 23–26. Paul K. Doss, USI associate professor of geology, will chair the meeting.

Dr. William DiMichele of the Smithsonian Institution will be the keynote speaker on April 24. His topic, “Seeing the forest for the trees: Fossil exposures in Middle Pennsylvania deep coal mines. What they are. How they got there. What they tell us,” comes from research that generated international attention this year. The fossil find near Danville, Illinois, revealed an entire ancient ecosystem.

The Casino Aztar Conference Center is headquarters for the meeting. The conference will have a strong New Harmony component, including a session on “The legacy of New Harmony, and other topics in the history of science and technology in North America” and two field trips, including “Revisiting New Harmony in the footsteps of the Prince of Wied, Charles Lesueur, and other Early Naturalists” and “The Geological Legacy of New Harmony, Indiana.” From 1830 until 1860, New Harmony was an important training and research center for the study of geology in America.

Historic New Harmony is a sponsor of the regional meeting along with the USI Pott College of Science and Engineering and Department of Geology and Physics. Other Pott College faculty on the planning committee include Dr. Joseph A. DiPietro as chair of student assistants and awards and Dr. Kent W. Scheller as chair of audio-visuals. Students from USI and other regional universities will attend and assist with the meeting.
Pott College Hall of Fame to induct first members

The first class in the new Pott College Hall of Fame will be inducted in April at the third annual STEM (science, technology, engineering, mathematics) dinner. The Hall of Fame will recognize graduates in science, mathematics, and engineering who have demonstrated outstanding achievements in their careers or made significant contributions to the community at the local, state, national, and/or international levels. The Hall of Fame also will help celebrate the history of Pott College alumni.

Inductees will be announced in January each year and recognized in the spring at the annual STEM dinner. A Pott College Wall of Fame in the area of the dean’s office will recognize the inductees.

For more information and an online nomination form, visit www.usi.edu/science.

New PLUSS program will help students achieve in science

A new program called PLUSS (Pathways Leading to Undergraduate Success in the Sciences) is helping selected freshmen who have declared a major in a program offered by the Pott College develop a solid foundation, especially in math.

Linda Trible, academic coordinator for the Pott College, said freshmen who place into intermediate algebra enroll in a one-hour PLUSS seminar. They also receive special academic advising.

Trible said the PLUSS seminar course will help students be successful in a science major. PLUSS students have declared a science major but will benefit from additional work, especially in math, to prepare for the rigor of a science major. The seminar gives participants an overview of the disciplines within the college. In the seminar each student will prepare and present a project that is multidisciplinary within the sciences.

“All projects will have a mathematics component,” Trible said, “because we feel math is a strong part of any science major. We want to make sure they can apply what they have learned in math.”

Of 325 new freshmen in the college, 70 students are in the PLUSS program. Forty-three students are enrolled in the PLUSS seminar this semester, and the remainder of the students will complete it in the spring.

PLUSS seminar instructors include Steve Glueckt, instructor in chemistry, and Amanda Heidrich and Judy Townsend, instructors in math. Glueckt, Heidrich, and Townsend also are PLUSS advisors, along with Sally Kleinhechter and Judy Wells, instructors in math, and Marsha Segebarth, instructor in biology. Last summer Wells and Segebarth attended a week-long conference in Salt Lake City sponsored by the National Academic Advising Association (NACADA). All PLUSS advisors are faculty members who teach entry-level courses.

“We thought that they would be best able to identify with the issues freshmen face,” Trible said.

PLUSS advisors touch base with students at “hot points” during the semester. These include the first week of classes, prior to the first test, at mid-term, and prior to finals.

Trible and Dr. Shelly Blunt, associate dean of the Pott College, conducted workshops on campus for PLUSS advisors. The program received a grant from the Pott College Faculty Development Fund to assist with advisor training.

“Our goal for the PLUSS program is to improve retention of students within our college, but we also want to improve University retention overall,” Trible said.

“We will be tracking these students and tweaking the program. We have high expectations that these students will be successful.”

Faculty partner with USI Center for Applied Research

Dr. Paul K. Doss, associate professor of geology, works with Alcoa Warrick Operations in Warrick County, Indiana, to provide consultation and testing regarding the storage of coal combustion products. The partnership with Alcoa was developed through the USI Center for Applied Research, established in 2006 to help businesses and organizations work more closely with the University.

Doss said, “The work with Alcoa gives me a chance to be involved in the field of hydrogeology in a way that will have a positive impact in the community and on the environment. It also gives me the opportunity to get out in the field myself and to take students to see, from an applied perspective, what geologists do.”

Doss works with Dan McIntire, manager of fuels and minerals for Alcoa Power Generating, Inc. He said, “Paul serves as an independent reviewer of the project concept and project execution. He also has helped us interpret data. With his advice and counsel, we know we are executing the project in a professional manner.”

Dr. Mark D. Krahl and Dr. Kenneth E. Walsh of the chemistry faculty also have been involved with a project through the Center for Applied Research. They conducted testing and laboratory consultation for e-biofuels, a start-up company.
Barnett research receives NIH Road Map funding

Dr. Joey V. Barnett ’81 is principal co-investigator for research at Vanderbilt University that has received funding from a National Institutes of Health Road Map initiative grant.

A consortium of researchers at Harvard University, Massachusetts Institute of Technology, and other Boston-area institutions received a $25 million grant for organ research. Vanderbilt is the only partner in the consortium outside Boston. Barnett’s research related to heart-valve development will receive $2.5 million over five years. Initiatives under the NIH Road Map are designated for cutting-edge biomedical research.

College welcomes new faculty members

The Pott College of Science and Engineering welcomed three new faculty members for fall semester.

Dr. Ronald W. Diersing, assistant professor of engineering, holds a bachelor’s degree in electrical engineering from Purdue University. He earned a master’s in electrical engineering and a doctorate at the University of Notre Dame. Diersing was formerly in a post doctoral fellowship at Temple University.

Dr. John Donnelly, assistant professor in mathematics, holds a master’s degree and doctorate in mathematics from Binghamton University. He earned a bachelor’s degree in mathematics from the University of Albany. Donnelly was previously employed as an assistant professor at Mount Union College.

Dr. Kyong-Hee Melody Lee, assistant professor of mathematics, earned a doctoral degree in education from Teachers College, Columbia University. She was formerly employed as an associate professor at Colby-Sawyer College.

Geology graduate Laura Bordelon participates in fossil recovery

Laura Bordelon ’06, geology, was involved in the recovery of a fossil from a 30-foot-long super-crocodile. The fossil with jagged five-inch teeth was discovered during the summer while Bordelon was a field worker at Grand Staircase National Monument in Utah. She is a graduate student in geobiology at Southern Illinois University.

USI geology graduate Laura Bordelon; Dr. Alan Titus, paleontologist; and Michael Knell of Montana State University examine the crocodile fossil.

Engineering faculty make scholarly presentations

Two faculty members from the Department of Engineering are presenting research at national meetings or conducting workshops during fall semester.

Dr. Ronald W. Diersing, assistant professor of engineering, conducted a workshop at the University of Notre Dame in October in honor of Dr. Michael K. Sain, his Ph.D. advisor. In December Diersing will make a presentation at the 46th IEEE (Institute of Electrical and Electronics Engineers) Conference on Decision and Control in New Orleans.

Dr. Mamunur Rashid, assistant professor of engineering, made a presentation in November at the 2007 annual conference of the American Water Resource Association in Albuquerque.

Students meet textbook author in England

Dr. Jeanne Barnett, professor of biology, taught a course in virology at Harlaxton College (owned and operated by University of Evansville) in England during the summer. Sixteen USI students completed the course. The students visited the labs of their textbook authors, Dr. Keith Leppard and Dr. Andrew Easton at the University of Warwick. In summer 2008 the Pott College will offer a course in tropical biology that will include eight days in Belize.

From left are Priyanka Arshanapalli, Sarah O’Donoghue, Emily Kraft, Priscilla Walker, and Heather Denton with Dr. Andrew Easton.
College Advisory Board established

A 17-member College Advisory Board has been established for the Pott College of Science and Engineering. The board will advise the college on the development of new programs and ways to enhance the relevance and quality of present programs.

All members of the board work in STEM (science, technology, engineering, and mathematics) areas relevant to academic programs offered by the college. The board will be involved with college outreach efforts, including development. **Dr. Scott A. Gordon**, dean of the Pott College, said board members also will advise on co-operative programs and placement opportunities for graduates.

Members of the College Advisory Board are:
- **Eric A. Adams ’86**, CEO and president, enGene, Inc., West Vancouver, British Columbia, Canada
- **Anthony J. Bacon ’96**, math teacher, Mt. Vernon High School, Mt. Vernon, Indiana
- **Joey V. Barnett ’81**, vice chair and director of graduate studies, associate professor/pharmacology, Vanderbilt University Medical Center, Nashville, Tennessee
- **Victor L. Channess ’87 M’90**, supervisor of mathematics, science, health and physical education, Evansville-Vanderburgh School Corporation, Evansville
- **Jeff E. Deig**, vice president of engineering and business development, Industrial Contractors, PCI Consultants, Evansville
- **Dan Felker**, president, Sterling Boiler and Mechanical, Evansville
- **Brent Grafton**, owner, Greentree Plastics, Evansville
- **Dr. Cary Hanni**, physician, Evansville Surgical Associates, Evansville
- **Chad J. Hartmann**, math/science/health teacher, Helfrich Park Middle School, Evansville
- **Dr. David W. Kinsey**, associate professor emeritus of mathematics, University of Southern Indiana, Evansville
- **Joe F. Kuhn**, production and engineering, Alcoa Warrick Operations, Newburgh, Indiana
- **Dr. Amy M. Mischler ’98**, physical therapist, ProRehab PC, Evansville
- **Dr. Brian D. Mullen ’98**, product development/platform chemist, SABIC Innovative Plastics (formerly GE Plastics), Mt. Vernon, Indiana
- **Howard A. Nevins**, president, Trey Exploration, Newburgh, Indiana
- **David Ramaden**, chief architect, Applied Data, Huntsville, Alabama
- **Johnny W. Reising**, director, Office of Environmental Restoration, U.S. Department of Energy, Cincinnati, Ohio

**Strategic plan is guide for long-range planning**

The Pott College of Science and Engineering has developed a strategic plan with goals dedicated to excellence in students, learning, and faculty; expansion of academic programs, and the development of campus and community partnerships. The strategic plan will serve as a guide for long-range planning during 2008-13.

See the plan online at www.usi.edu/science or call 812/464-1977 to request a copy.

**Cook, Labhart retire; Bandoli reaches 25-year mark**

**Leonard M. Cook**, associate professor of engineering, and **Marjorie Labhart**, instructor in mathematics, will retire in spring 2008. Cook joined the University in 1975; Labhart was an instructor in 1965 on the University's opening day. **Dr. James H. Bandoli**, professor of biology, was recognized on Founder's Day in September for 25 years of service to the University.
Register online for Science Fair
Sponsorships available; judges needed

Registration is available online this year for the Pott Foundation Tri-State Science and Engineering Fair, which will be held March 10-12 at the University of Southern Indiana.

The competition includes 12 categories plus a team projects category. The event serves as the qualifier for the state and international fairs. Beginning this year, teams will be allowed to advance to the state competition. One team from the state will advance to the Intel International Science and Engineering Fair May 11-17 in Atlanta.

Sponsorships by businesses, individuals, and industry are available for the Pott Foundation Tri-State Science and Engineering Fair. Sponsorships range from $1 to $5,000 in five categories. The title sponsor, the Pott Foundation, has pledged annual support through 2010. Volunteers with expertise in science and engineering are sought to serve as judges for the exhibits.

The regional fair is open to students in area middle schools and high schools within a 75-mile radius of Evansville. Approximately 475 students participate each year in the junior and senior divisions. Awards will include six $1,500 renewable USI scholarships in the senior division, cash awards, and plaques for winners. In addition, cash awards will go to classrooms with the most participants and to the classrooms of the winners, plus other awards.

The Web site at www.usi.edu/science/fair includes competition rules and information about developing a science project as well as details about sponsorships. For additional information contact fair co-directors, Dr. Shelly Blunt (sblunt@usi.edu) and David Ellert (djellert@usi.edu) of the USI Pott College of Science and Engineering.

www.usi.edu/science/fair