

EKU Report

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New Science Building Opens

EKU's New Science Building opened for classes on Jan. 9, the first day of the spring semester. Phase 1 of the facility, which is located adjacent to the university's health sciences complex, houses the Departments of Chemistry and Physics & Astronomy as well as science education classrooms and laboratories. President Whitlock has said the building "will revolutionize the way science is taught on this campus."

Alumni Assist First-Generation Students

A pilot program at ECU will allow current students to navigate University life with the help of those who have already made the journey successfully.

Twelve first-generation ECU students will be selected to participate in the Connecting the Dots Student/Alumni Mentoring program this semester. The program will then pair each student with an alumni mentor, who will serve as a guide, a friend and a resource.

While the project was spearheaded by Terry Wilson, Educational Extension Agent coordinator for ECU, he is quick to point out that it became a reality through the efforts of many.

"The program's creation is a result of the collaborative efforts of our agents, Paula Wilder in particular, and Alumni Relations, Admissions, Advising, the Noel Studio for Academic Creativity, and Belk Inc., which provided the funding for the pilot," he emphasized.

Admissions and Advising will provide input on the selection of the initial group of 12 students. Alumni Relations will review alumni mentor candidates to find the best fit for each student mentee. The Noel Studio will create a series of workshops tailored for the students selected for the program.

The overall goal of the Connecting the Dots program is to increase the retention rate of first-generation students at ECU by providing them with a service that was not previously offered. The pilot program will use a control group of first-generation students (with similar ACT scores to those in the program) who are not involved in the program to help measure its value.

NIH Grant Funds Research on Therapeutic Intervention Strategies For Brain Injuries

EKU has the lead role in a National Institutes of Health-funded initiative to research therapeutic treatment for those who have suffered traumatic brain injury (TBI).

Approximately 10 million people worldwide suffer from TBI, for which there is currently no therapeutic intervention. Especially in rural areas, where the time of transport to a hospital can be lengthy, the use of a neuroprotective agent such as gamma glutamylcysteine ethyl ester (GCEE) could be invaluable in cases of moderate TBI, according to Dr. Tanea Reed, assistant professor of chemistry at ECU and principal investigator for the three-year, \$394,000 NIH grant. Also, brain injuries commonly occur in military combat.

"There is no known cure for traumatic brain injury," Reed said. "However, immediate medical attention after an incident is most beneficial for patient recovery. Since TBI is a sudden injury, post-therapeutic strategies are the only viable approach to therapy.

"Preliminary data show a significant reduction in oxidative stress levels when GCEE is administered 10 minutes post TBI," Reed said, adding that early management of injury is the best preventative measure of progressive secondary injury.

Reed and her fellow researchers will investigate a potential glutathione (GSH)-based therapeutic at several time points to determine the best course of protection against secondary TBI injury.

In addition to increasing scientific knowledge in the field of TBI research, Reed said the project would enhance the research environment for ECU students – two graduate students and six undergraduate students will assist in the research – and better enable students from Kentucky, a "traditionally underrepresented" state in biomedical sciences, to advance in biomedical programs.

Bioinformatics Program Rides Wave of DNA Revolution in Medical Science

With its unique bioinformatics degree option for undergraduates, EKU is poised at the leading edge of a revolution in health care – one that will embrace DNA analysis to personalize medicine, improve the quality of care and bring down costs.

Two academic departments at Eastern – Biological Sciences and Computer Science – have joined efforts to establish the academic program, the only one of its kind for undergraduates in Kentucky. The initiative, which is intended to prepare students for the evolving changes in biomedical science, has been aided by more than \$2 million in funds from the National Institutes of Health (NIH) over the past decade.



Bioinformatics is defined as the analysis of biological information using computers and statistical techniques, or the science of developing and utilizing computer databases and algorithms to accelerate and enhance biological research. The rapidly growing field was the subject of a lengthy feature entitled “A Genome Deluge” in the business section of the Dec. 1 issue of the New York

Times. The article points out that within a year or two, the cost of determining a person’s complete DNA blueprint is expected to fall below \$1,000, a threshold unthinkable just a few years ago but one that does not take into account the cost of making sense of the data.

In other words, “we have the information, but can we decipher it?” said Dr. Patrick Calie, a veteran professor of biology who is coordinating the bioinformatics initiative at EKU. “That’s where bioinformatics comes in.”

The Times article cited Isaac Ro, an analyst at Goldman Sachs, who wrote in a recent report, “We believe the field of bioinformatics for genetic analysis will be one of the biggest areas of disruptive innovation in life science tools over the next few years.”

The implications are profound, especially concerning diseases such as cancer, diabetes and Alzheimer’s, among others, and conditions such as hypertension and high cholesterol. “DNA is a potential predictor of the probability of having particular diseases later in life,” Calie said. “For example, some people may have signatures in their DNA that suggest they are more prone to cancer. Or, if they have particular genes that pre-dispose them to Alzheimer’s, they can be given drugs early on before symptoms occur. DNA analysis will allow health care providers to target those folks at highest risk, based on what their genes tell us, and reduce the need to screen so many people.”

Fire & Safety Program Featured in Magazine

EKU’s Fire and Safety Engineering Technology Program was prominently featured in an article entitled “False Convictions: The New Science of Arson” in the November 2011 issue of Discover magazine.

The article detailed how fire researchers “have shattered dozens of arson myths in recent years” and investigates why the American court system has lagged behind. The lead photograph for the eight-page spread was taken at an EKU test burn site.

Some of that research has taken place at the EKU fire lab, as the article vividly described an exercise involving EKU faculty, graduate students and others.

After quoting several experts and studies, the article concludes that “better science is beginning to produce better justice.”

The article was authored by Douglas Starr, co-director of the graduate programs in Science and Medical Journalism at Boston University. His most recent book is “The Killer of Little Shepherds: A True Crime Story and the Birth of Forensic Science.”

This is not the first time EKU’s Fire and Safety Engineering Technology Program has been in the national spotlight. Last year, a crew from ABC TV’s “20/20” came to the Richmond campus and spent a day at the University’s test burn site near the Ashland Building, looking at how some artifacts of a fire could be viewed as indicators of arson.

PLCs Help EKU Align Core Academic Standards

Seven interlocked Professional Learning Communities (PLCs) are at the heart of an effort at EKU to align key general education and teacher preparation courses to Kentucky Core Academic Standards.

Eastern established the Curriculum Alignment for Retention and Transition (CARTE) as a response, in part, to Kentucky Senate Bill 1, which deals with college preparedness at the secondary level and retention and graduation rates at the college/university level.

An Executive Professional Learning Community includes the two directors of EKU’s Teaching and Learning Center, Dr. Hal Blythe and Dr. Charlie Sweet; and two prominent faculty from the College of Education, Dr. Dorie Combs, chair of the Department of Curriculum and Instruction and Dr. Ginni Fair, director of EKU’s Thinking and Communicating across the Curriculum Program. That quartet is joined by one representative each from five areas: Teacher Preparation, English/Reading, Mathematics, Natural Sciences, and Social Sciences.

EKU Part of Tillman Military Scholars Program

EKU is one of 14 colleges and universities nationwide selected to participate in the Tillman Military Scholars Program for the 2012-13 academic year.

The program honors Pat Tillman, who left a successful professional football career to join the U.S. Army and who later died in combat in Afghanistan. Providing scholarships that cover tuition as well as other needs, such as housing and child care, the program supports the nation’s active and veteran servicemembers and their spouses by removing financial barriers to completing an academic degree.

“The Pat Tillman Foundation is partnering with each of these institutions because each is a leader in support services for student veterans, active servicemembers and their families on campus,” according to a news release from the Foundation.

Service members from all branches of the military, both pre- and post-9/11 service, who wish to start, finish or further their education are eligible to apply for a Tillman Military Scholarship. Spouses and survivors of service members are also eligible to apply.