UK’s New Dean of Arts & Sciences

Mark Kornbluh, a scholar whose strong interests in history and technology unite the arts and sciences, is the University of Kentucky’s new dean of A&S. Formerly professor and chair of the Department of History at Michigan State University, he also held an appointment there in the Department of Computer Science and Engineering. Kornbluh began his duties at UK last August.

It’s not unusual for a scholar’s interests to range far and wide, but in Kornbluh’s case how did his focus on American voting patterns and participatory democracy (he wrote a book on this in 2000) evolve to embrace scholarship in cyberspace?

“Well, that might seem like a big jump,” he says, “but what became clear to me 15 years ago was that communications technology is transforming all aspects of our world, and this includes citizen participation in government. As a scholar I wanted to find out how technology could be used democratically instead of just to sell things.”

In 1998 he became the founding director of MATRIX: the Center for the Humane Arts, Letters and Social Sciences at Michigan State. MATRIX is one of the nation’s largest humanities technology centers. From 1997 to 2004, Kornbluh was the executive director of “H-Net: Humanities and Social Sciences OnLine,” the world’s largest online scholarly society. Six years ago, his work took an “unexpected and interesting turn,” he says, when he was invited to South Africa to use information technology to chronicle the history of people of color under apartheid.

“Under apartheid, these people didn’t officially exist—and nobody of color was allowed to be an archivist, a librarian. History books in South African schools told of the brave white settlers who came to an empty continent.” In South Africa Kornbluh worked with a team of U.S. scholars, experts in the use of information technology, to help train a new generation of curators and librarians to capture and preserve the story of South African history and culture.

At UK, Kornbluh is focusing on three areas: expanding the use of information technology in the humanities, internationalizing the campus, and building interdisciplinary connections. “Knowledge is no longer bounded by departments, and a major draw for me to the University of Kentucky was that the administration and faculty here realized that a long time ago,” Kornbluh says. “I want to help make UK a centerpiece for humanities and social science technology.”

Sanders-Brown Center Appoints New Director

Linda Jo Van Eldik is the new director of the UK Sanders-Brown Center on Aging, succeeding William Markesbery, who led the center from its inception in 1979 [for more on Dr. Markesbery, see article on p. 35]. She came to UK from the Northwestern University Feinberg School of Medicine, where she was a professor in the Department of Cell and Molecular Biology, and associate director of its Cognitive Neurology and Alzheimer’s Disease Center.

Last year, Van Eldik won a prestigious Zenith Award from the Alzheimer’s Association, one of only four such awards given in 2009. She was recognized for her pioneering work in the area of glia cell biology. Glia cells provide mechanical and physical support and electrical insulation between neurons.
President Obama Picks Two UK Professors for Awards

President Obama presented the Presidential Early Career Award for Scientists and Engineers to two University of Kentucky professors last August: Bruce Hinds (top left), an associate professor of chemical and materials engineering, and David McNear Jr., an assistant professor of plant and soil sciences.

Hinds and McNear were two of 100 researchers nationwide to receive the award, the highest honor bestowed by the federal government on young professionals in the early stages of their research careers. Hinds and McNear received their awards at a ceremony in the historic east wing of the White House last fall. “Obama came in to raucous applause,” says Hinds. “It was exciting to see him close up—he conveyed a strong presence and enthusiasm. He spoke to us as a group for a few minutes about how important science and engineering are for our country’s future.”

Hinds, who is also UK’s William Bryan Professor in Chemical and Materials Engineering, conducts research on nanoscale device fabrication. *Science* and *Nature* magazines have featured his discovery of a method to make carbon nanotube membranes that permit fluids to flow through at a rate 10,000 times faster than normal materials. This system is being used to pump drugs, using very small voltages, in a programmable skin patch device to treat drug addiction.

McNear is focusing on tall fescue, a popular forage grass, and its symbiotic friend, an endophyte fungus that lives inside the plant. He is studying the effects of the fungus on the chemistry of compounds released into the rhizosphere (the root-soil interface), and how these compounds interact with soil and microbes to influence carbon and nitrogen cycling in fields throughout the Southeast.

“I am thrilled for Bruce Hinds and Dave McNear, but not the least bit surprised,” says UK President Lee T. Todd, Jr. “Both of these professors have been conducting leading-edge research from the moment they arrived on campus, and this award validates the fact that their work ranks among the best in the nation and the world.”

New Gum Could Replace Toothpaste for Soldiers

In the past, America’s fighting men and women have relied on sugary gum included in rations as a way to clean their teeth. Thanks to research conducted at the UK College of Pharmacy, future soldiers, deployed in areas where they don’t have the time or the means to brush, could carry chewing gum that will prevent dental decay. This gum is receiving global attention as the product nears testing in an upcoming Phase I clinical trial funded by the U.S. Army Dental Research Detachment.

Developed by pharmacy professor Patrick Deluca, the gum contains KSL, an antimicrobial, anti-adhesive and abrasive agent that disrupts plaque formation and promotes the dissolution of plaque.

Last fall, Abeer Al-Ghananeem, assistant professor of pharmaceutical sciences, took over the project when DeLuca was elected president of the American Association of Pharmaceutical Scientists. She says, “Once the manufacturing facility is on board, UK will work side by side with manufacturers and help guide them as they come up with a successful formulation.”

So far, all research has been done with a chewing machine in Al-Ghananeem’s lab, a device which simulates the human mouth chewing—complete with artificial saliva. Al-Ghananeem says she is optimistic that the Phase I trial will be completed within 18 months to two years.

“Troops come home from war with a lot of dental problems that affect their quality of life,” Al-Ghananeem points out. “These soldiers don’t always have access to water, toothpaste, a toothbrush or the right time or place to take care of their teeth. This research could have a great impact on their health and quality of life, but it also has a global impact, especially in third-world countries. Children born with AIDS in Africa have serious and painful dental problems, and I believe this gum can enhance their quality of life.”

—Ann Blackford