

M.D., Ph.D., MPH, MBA - What's With All These Letters?



M.D./Ph.D. student Romulo Albuquerque (left), D.D.S., is working toward his doctorate in Physiology with his mentor Jayakrishna Ambati (right), M.D., professor of Ophthalmology and Visual Sciences. Albuquerque is engaged in exciting new research modulating the abnormal growth of blood vessels in the eye - the underlying cause of many eye diseases.

Eight years after completing a doctor of dental surgery degree, Romulo Albuquerque is looking to add two more degrees to his title – a doctor of medicine and a doctor of philosophy. A graduate of the University of Pernambuco-Brazil, Albuquerque is one of 20 current students pursuing a combined degree in the UK College of Medicine M.D./Ph.D. program. Since 1993, the program has prepared a small but talented pool of students for careers as independent physician-scientists and leaders in academic medicine, industry, and government.

"Across the board, these are exceptional students," said the program's director,

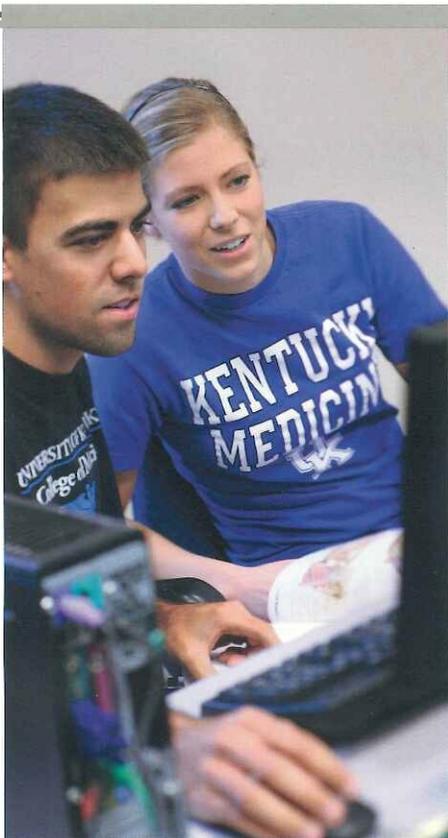
Susan Smyth, M.D., Ph.D., associate professor of Internal Medicine. "We've got fantastic students working with great mentors, doing cutting-edge research and already making impacts in their respective fields."

Albuquerque decided to become a physician-scientist after spending his first three years at UK studying for a master's degree in orofacial pain with Jeffrey Okeson, D.M.D. In that program, he was involved in both research and clinical work.

"I'd lived that life for three years, and I thought it would be nice to do this forever. Why not pursue a medical degree?" he explained.

After his first two years in medical school at UK, Albuquerque made the transition to graduate school, working toward his doctorate in Physiology, with his mentor Jayakrishna Ambati, M.D., professor of Ophthalmology and Visual Sciences. Already, he's engaged in exciting new research into modulating the abnormal growth of blood vessels in the eye, the underlying cause of many eye diseases. Next year, he expects to make the transition back to medical school to complete his last two years.

Two other students in the program, Zachary Fulkerson, from Hartford, Ky., and Andres Chang, from Guatemala City,



First-year medical students Tyler Keller and Sarah Borders participated in the B.S./M.D. program, which offers those eligible a chance to shave a year off their education, essentially earning a bachelor of science and a medical degree in seven years rather than the usual eight.

Guatemala, made the transition to graduate school this fall. Typically, two years of medical school are followed by three to four years of graduate school, then two more years of medical school.

"It's a totally different mindset, going from medical to graduate school," Fulkerson said. "The first two years of medical school are more structured, and graduate school involves more independent thinking, problem solving and analyzing."

Like many others in the program, he wants to keep his clinical skills sharp while studying for his Ph.D. Working part time in the student-run UK Salvation Army Clinic is one way he's managed to do this. His research also allows him patient contact. Working in the laboratory of cardiologist Smyth, he is conducting research in platelet function in the context of atherosclerotic disease while recruiting patients for clinical studies.

A LONG, ARDUOUS PATH

The path through medical school these students have chosen is long and arduous. By the time they complete their residencies, they'll have spent 14 to 15 years on their education.

"There are days when you wonder, 'Why am I doing this, and could anything else possibly go wrong?'" Fulkerson said. "But for the most part, I find the work I'm doing very interesting. If you're going to be in your career 30 years, this program adds only three or four extra years. It's time well spent in the grand scheme of things."

Chang agrees. "Being a doctor who contributes to the understanding and treatment of diseases by doing research and treating patients will allow me to do the things I enjoy most," he said.

Coming from a Third World country, Chang had little exposure to scientific research until he won a scholarship to the University of Central Arkansas. As a chemistry major, he had the opportunity to do research for the first time.

"I liked it so much I began to look for ways I could combine my desires to continue doing research and becoming a doctor," he said.

Michelle Stephens, of Columbus, Ohio, now in her final year of graduate work, got her first taste of research as an undergraduate, through summer internships.

"My advice to anyone considering the M.D./Ph.D. program is get into a research lab," she said. "Once you do, you can see where your interests lie."

Stephens' primary interest is in the field of aging, particularly as it relates to the part of the brain that controls learning and memory. She works in the lab of Greg Gerhardt, Ph.D., professor of Anatomy and Neurobiology and director of the Morris K. Udall Parkinson's Disease Research Center of Excellence, whose research she describes as "very translational."

B.S./M.D.

Another combined degree program attracting top students to UK is the B.S./M.D. track, which offers those eligible a chance to shave a year off their education, essentially earning a bachelor of science and a medical degree in seven years rather than the usual eight. These students have the option of completing a bachelor of science degree in biological sciences in three years and applying to enter medical school their third year in college. On the whole, they're a talented group, scoring in the top 1 percent on college entrance exams.

Sarah Borders, of Versailles, Ky., and Tyler Keller, of Louisville, Ky., first-year medical students in the program, were both certain they wanted to become physicians. Besides reducing their time in school and saving money, the program gave them the chance to get involved in medicine as undergraduates.

"It's been invaluable in helping me network with physicians for shadowing opportunities and also in allowing me to meet many other people who have provided advice and mentoring during my progression through undergrad and admission to medical school," Keller said.

Being on the B.S./M.D. track does not guarantee a student admission into medical school. Each must take the MCAT and apply like everyone else. Nevertheless, Borders pointed out, the one-on-one attention from key people in the College of Medicine was crucial to her success through the application and interviewing process.

Together with the M.D./Ph.D. and B.S./M.D., UK offers combined degrees in medicine and public health (M.D./MPH) and medicine and business administration (M.D./MBA). While still in their infancy, these programs are designed to prepare physicians for leadership roles in administration, an increasing need in our complex health care system.