

Paul Koles

Using all his gifts

Cindy Young

A teacher to his core, Paul Koles can't help himself. When asked what he does at the Boonshoft School of Medicine, he carefully lays out his four major roles and then methodically explains them one by one, searching for the precise words to explain his meaning.

He does the same when asked about what attracted him to medicine or what he does in his spare time. Habits honed during a career of explaining complex medical concepts to eager medical students are hard to break.

"I would say that I have four major roles here," Paul Koles, M.D., associate professor of pathology and surgery and director of pathology education, explained. "I'll list them in the order of how I spend most of my time."

Educating medical students in pathology (and much more)

The recipient of the medical school's Faculty Mentor Award in 2004 and the Teaching Excellence Award from second-year students for an unprecedented six consecutive years, Koles clearly teaches much more than just pathology.

"You know that students come first for him because he'll always take as long as you need to explain a concept to you," said second-year student Ashkahn Golshani. "I appreciate the fact that no matter how busy he is being the director of pathology education, he still values that one student. He remembers your name and everything about you."



Koles said a love for teaching and learning is what drew him to the medical school. "I've always enjoyed the teaching of pathology and was involved in the training of pathology residents at Kettering Medical Center from 1986 until about 1995," Koles said. When the pathology residency program was discontinued in 1995, Koles found that he missed the teaching role. He taught pathology at the Wright State School of Medicine from 1986 to 2001 as a clinical faculty member, but was much more heavily involved in training residents. "When the path residency ended, I felt that I wasn't using all my gifts," he said. "I needed more interaction and stimulation through the teaching and learning aspects of pathology." When a full-time faculty position at the medical school opened up in 2001, he took it.

The first two years of medical school are intense. Students are expected to master human anatomy, the molecular basis of medicine, cell and tissue organ systems, principles of disease, pathology, neuroscience, the mind, and all the major systems of the body, in addition to the social and ethical issues of medicine and an introduction to clinical medicine. Figuring out how to pack all that knowledge into a human brain in two short years in a way that it can be instantly retrieved and put into practice with actual patients is one of the things that fascinates Koles. Over the years, he has refined his methods.

"When I was in med school, the preclinical years were just basically opening up a fire hydrant of information for us to swallow, and we were expected to figure out how it would be best used later," he said. Koles believes that although mastering the information is critical, requiring the students to apply the knowledge effectively is just as important. "Students learn best when challenged to apply their knowledge rather than simply to absorb knowledge," he said.

"He makes you understand there's a reason for us painstakingly learning all these details, because it's going to end up saving this person's life or increasing the quality of their life somehow," said Golshani.

Koles has learned that what works when teaching residents doesn't always work with medical students. "One method that used to work very well in residency, but didn't work as well with medical students, is small group discussions," he said. Unlike with residents, group discussions with medical students led by a faculty member seemed to favor the more extroverted or aggressive students and didn't involve all the students well. "And that's why I switched over to team-based learning," he said. "Because it really requires participation of every student in the class."

Team-based learning (TBL) originated as an instructional method, developed by Larry Michaelsen, Ph.D., for business students at the University of Oklahoma. In 2002, the Boonshoft School of Medicine piloted TBL in several courses. The school then implemented TBL throughout the pre-clinical curriculum, becoming one of the first medical schools to do so.

Students are assigned to teams with six or seven members early in their first year. Teams work together in every core course, allowing them to build trust, hone communication skills, and learn together throughout the academic year. Traditional lectures and coursework complement TBL.

At the end of their second year, students must pass the U.S. Medical Licensing Exam (USMLE) Step 1. USMLE Step 1 is the most important exam they will take. They must pass it to continue on in medical school, and their score affects what kind of residency they will get after graduation. The exam is comprehensive, covering everything they've learned in

the first two years. It's a critical time for all students, but some struggle more than others.

The students know they can come to Koles for help. "He'll carve out any time that you need to sit down and talk with him," said second-year student Doria Thomas. "Even if it's not about pathology. If it's about life, he'll sit down and talk with you."

"I've had that experience where I realize that some of my students are not really achieving the goals they need to achieve to become physicians," Koles said. "Sometimes there are personal issues that are outside the educational milieu that are compromising their ability to learn, and sometimes it's studying and learning skills that are not mature and adapted to the high volume of information that they must learn while being medical students."

Koles has become the go-to guy for study tips. "When I was completely lost about how to study for the boards, I went and talked to him about it," said Golshani. "He sat down and talked to me and helped me figure something out. He has experience throughout the years of what works and what doesn't work, and he'll help you find what works for you."

"Most of it is simply organizing time in an efficient way, because they're all capable of learning the material," said Koles. "It's organizing time, but it's also methods of using the time to find out what their areas of weakness are."

Teaching isn't just a one-way street for Koles. "I've learned that in my attempts to teach, I end up being a co-learner with my students," he said. "I end up being challenged by them to understand and seek a more complete understanding of whatever I'm teaching. They have challenged me to become a better learner because they are so aggressive, committed, and appreciative of high quality teaching."



Koles works with students during a team-based learning exercise, which encourages students to work together in small groups as a way to master the class material and practice the kind of professional collaboration they will eventually experience as physicians.

2 Administration

Koles said his second role is administration. Because he is one of only two full-time faculty pathologists in the medical school, much of the teaching is done by full-time faculty in other departments and by clinically affiliated faculty who are practicing pathologists. “My role is to keep them involved in the educational process, to appreciate their contributions, and to recruit new ones to get involved in medical education as needed,” Koles said.

3 Research

“The number three role is research, and my particular interest is medical education research,” Koles said. He’s currently working on a paper exploring the relationship of team-based learning to student performance on major course examinations. “We’re showing a measurable improvement in their performance on examination questions when they have been exposed to team-based learning to learn that material,” he said.

2009 graduate Ersie Pouagare credits the TBL quizzes developed by Koles for helping her master information critical to passing Step 1. “His quizzes are very hard,” she said, “and we don’t appreciate

them at the time because we’re just worried about grades. But looking back, and I’ve talked to multiple people about this, Dr. Koles’ quizzes were the best things that ever happened to us.” Her advice to second-year students: “Focus on the quizzes and listen to Dr. Koles.”

Like many faculty members, Koles struggles with balancing his individual scholarship goals with his demanding role as an educator. But even in his research, the focus is on teaching. “I want to do both,” he said. “I want to become more productive as a scholar in medical education, but I also feel the need to do what’s best for my students. Right now the students are getting the lion’s share of the time.”



4

Clinical practice

Koles does clinical practice far less than he used to, but it still occupies about 10 to 15 percent of his time. Koles does cytopathology of the thyroid gland for three endocrinologists. He examines fine needle aspiration biopsies of cells from the thyroid gland for diagnosis. He handles about 400 cases a year.

Even when he's working on his practice, he takes time for students. "Many times if I would need help with Step 1 planning and studying, he would let me come in," Pouagare said. "He would always clear his desk and take out a notepad and write down a plan with me."

Koles also conducts 10 to 15 autopsies each year through the Boonshoft School of Medicine Regional Autopsy Services. This work provides a service to the community and education for students in pathology and anatomy.

My decision to go into medicine was based on three things:

"The first was that I'm committed to a lifestyle of service to others," he said. "I'm a Christian, and I believe my role in this world is to serve other people. So I was looking for an occupation, a career really, a profession in which service to others was paramount."

The second factor was a chance encounter in the summer of 1972 with Arthur Weaver, M.D., a head and neck surgeon at Wayne State University School of Medicine. Weaver offered Koles a place to stay during his summer ministry. "He became sort of a hero to me, a role model of how one could combine the practice of medicine with real service to others," he said. A theology major with a minor in chemistry at Andrews University in southwest Michigan, Koles had been considering other careers, including

becoming a high school teacher or college professor. "But when I met Dr. Weaver, I saw that a physician was in a unique position to have a positive impact on others," he said.

"And the third factor was, I always loved the biological sciences," he said. He spent the last two years of college doing all the pre-med requirements and applied and was accepted to medical school at Loma Linda University. He was the first one in his family to become a physician.

When he isn't teaching students, Koles enjoys spending time with his wife and three children, playing tennis, and wilderness backpacking. But even then, he finds ways to work in some time for teaching. "I enjoy teaching in my local church congregation," he said. "I get a lot of enjoyment out of that."

And what gives him satisfaction at work? "I think the greatest satisfaction is seeing a student rapidly develop from the beginning of med school through graduation," he said.

Pouagare is one of those students. Following in his footsteps, she started her residency in pathology at Tufts Medical Center this summer. Koles was there for her during this year's Match Day. "He supported me during Match Day when I found out I was going to Tufts," she said. "That really meant a lot to me, because my family couldn't be there that day. He was standing up and cheering for me."

As she starts the next step in her journey, Pouagare expects to think about Koles a lot. "Next year when I'm studying and probably going to be very overwhelmed, I'm just going to think about his work ethic and his knowledge," she said. "It will motivate me to work harder. Thank you for being a wonderful teacher and a wonderful physician." **VS**

Cindy Young is director of the medical school's Office of Marketing and Communications. She can be reached at cindy.young@wright.edu