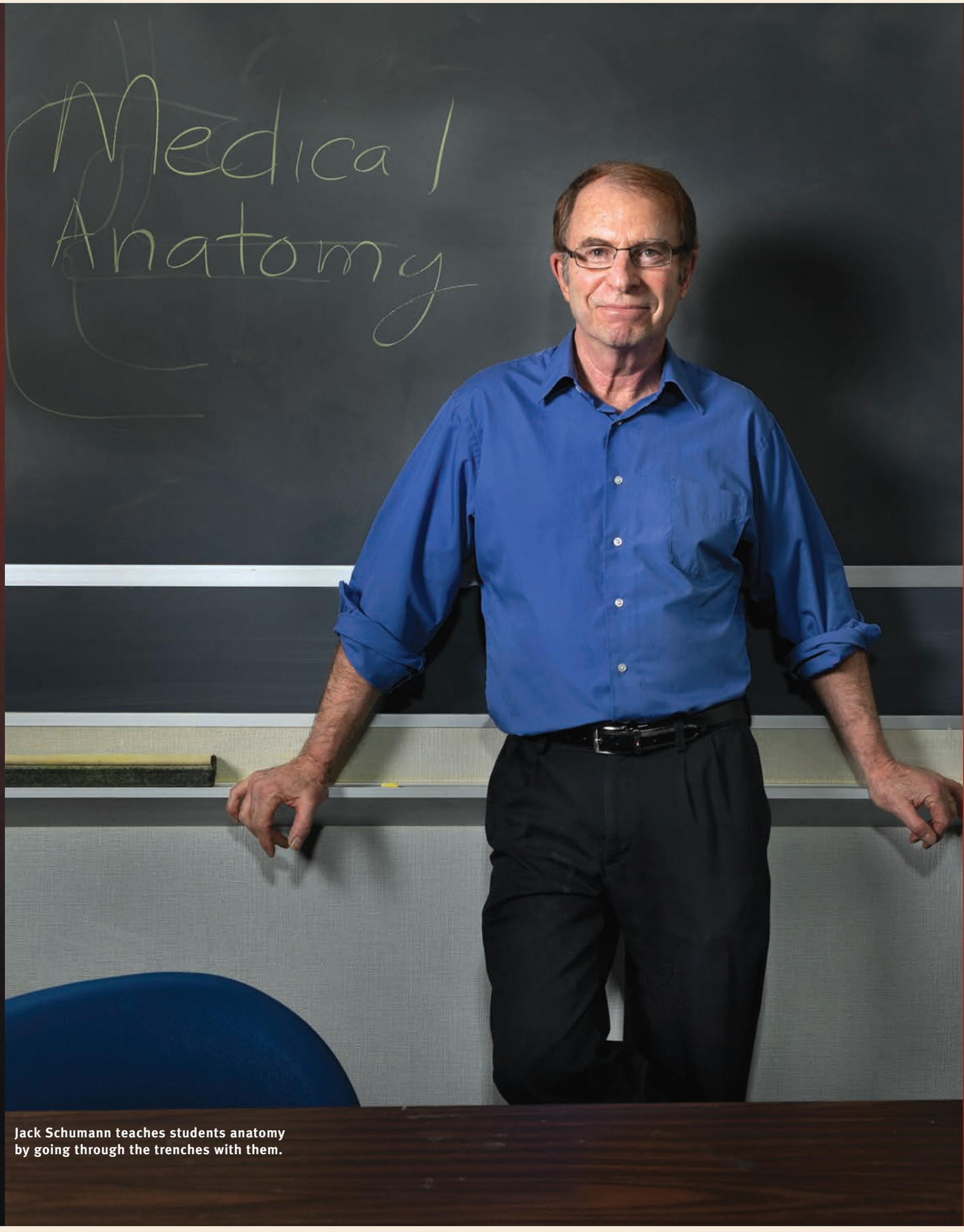


Jack Schumann teaches students anatomy by going through the trenches with them.

"LOOK AT THAT!"

JACK SCHUMANN GIVES STUDENTS A ROAD MAP TO THE HUMAN BODY

BY GAVIN JENKINS

PHOTO BY TOM M. JOHNSON

It's a Friday morning in late September, and a Scaife Hall laboratory is filled with 161 first-year medical students. The class, Medical Anatomy, is their first at Pitt Med in the Foundations of Medicine sequence, and this is the end of the fourth week of dissecting the cadavers that line the walls. The room is long and narrow with a low ceiling, and when Jack Schumann, a PhD and anatomy course director, walks out of the lab office buttoning his white coat, the students who greet him have to yell over the cacophony.

Michelle Zhang, a Vassar College graduate, asks Schumann if he'll help her group start the morning's assignment: removing the cadaver's brain.

"Absolutely," he says. "Let's go."

A few minutes later, Schumann is cutting around the cadaver's skull using a handheld electric saw, while Zhang holds the head still. More than 30 students are crammed around the table in this corner of the lab to watch Schumann dissect.

This is what Schumann does. As third-year Mara Rice-Stubbs describes it, he goes through the trenches with his students. When Rice-Stubbs took anatomy, she struggled to memorize the onslaught of information. One day, she visited Schumann in his office, and, though embarrassed to admit it, she revealed that she was falling behind in class. Rice-Stubbs expected Schumann to suggest a review book or a new study strategy. Instead, he told her to drink a cup of coffee and meet him in the lab.

It was late in the afternoon. Helping her meant going home late, maybe missing dinner. Rice-Stubbs says she would have been grateful if Schumann had reviewed head and neck anatomy with her for 20 minutes.

"He spent the next two-and-a-half hours in the lab reviewing anatomy with me and my classmates," she says.

Schumann's efforts have been noticed. Since becoming Medical Anatomy course director in 1998, he has won 12 Excellence in Education Awards. He received the Kenneth E. Schuit Master Educator Award, the Sheldon Adler Award for Innovation in Medical Education, and the Golden Apple Award. In 2017, Schumann was recognized with the Chancellor's Distinguished Teaching Award.

"I try to set the stage, show everybody the big picture, and then go into the fine detail," Schumann says.

One day, she visited Schumann in his office, and, though embarrassed to admit it, she revealed that she was falling behind in class. She expected Schumann to suggest a review book or a new study strategy. Instead, he told her to drink a cup of coffee and meet him in the lab.

Schumann, 66, grew up in southern New Jersey, near Philadelphia, and as a teenager, he became interested in biological sciences. "I just liked to know what made things tick," he says. Schumann considered studying ecology and zoology before deciding to major in biology at Rutgers University. As an undergraduate, he loved studying photosynthesis, cellular respiration, and embryology. His family pushed for him to attend medical school, but Schumann wasn't interested in becoming a physician. After college, he stayed at Rutgers, earning a master's in cell biology and a PhD in morphology.

He had never even taken an anatomy course before, but when Schumann began working as a professor at another university, he was asked to teach the subject to undergraduates. "My chairman said: *Just keep a chapter ahead of the students*," Schumann says. "It was a struggle at first."

The night before each class, Schumann would stay up late to memorize bones, muscles, and nerves, and after a couple of years of cramming like this, not only did he get comfortable teaching the material, but he also began to enjoy it. In his spare time, he did the coursework for a PhD in anatomy, but because he already had a PhD in morphology, he decided not to write a dissertation.

What his students are going through is not

alien to him. Schumann recalls which material was especially difficult.

And he remembers which sections of the course terrified him—"everything" scared him at first. "It all just seemed overwhelming."

"Even in an undergraduate course, you're learning the names of hundreds of bony prominences, muscles, nerves, veins, arteries, and organs, and relationships of what's next to what," he says. "It's like learning a foreign language."

This is Schumann's favorite analogy for what it's like to learn anatomy; and coincidentally, his wife, Maria, is a linguist who used to work at the United Nations. She's fluent in Spanish, English, French, and Italian.

Rice-Stubbs says that every medical school course feels like the most important one. But she notes that it's easy to argue that anatomy is the most crucial class. Schumann would agree. Some medical schools don't begin with anatomy, and he says that's a mistake. He calls anatomy the "road map" to the human body, an "absolute requirement" for diagnosing patients, and he believes dissecting a cadaver is a rite of passage for future doctors.

Many first-year students have never seen a corpse; fewer have dissected one.

So on their first day of anatomy lab, Schumann has a ritual. He breaks the students into groups and assigns each group a cadaver.

At the end of their anatomy courses, the students attend a ceremony in Heinz Memorial Chapel to honor the donors and their families.

In the closing minutes of Friday morning's class, Schumann stares into a cadaver's skull to inspect Insiyah Campwala's dissection of the middle cranial fossa. He smiles and says, "I'm going to tell people I did this." As students laugh, he steps back and points at Campwala. "She's going to be a surgeon."

Schumann says it's obvious from the first class which students are headed toward a life in the O.R. They're more aggressive about jumping in and dissecting. They pick up the

"Even in an undergraduate course, you're learning the names of hundreds of bony prominences, muscles, nerves, veins, arteries, and organs, and relationships of what's next to what," he says. "It's like learning a foreign language."

Schumann removes the top of the cadaver's skull and peels off the thick dura membrane that surrounds the brain. Anatomy is a seven-week course, and for each lab, he's assisted by five or six physicians who float around the room as he does. Some of the physicians are active faculty members; others are retired doctors who enjoy helping in labs and in problem-based learning sessions.

On this Friday morning, the course instructors are helping the student groups get started. A chorus of handheld saws buzz.

"Now what I'm going to do is cut the cranial nerves from anterior to posterior," Schumann says to a group of 30. "I'm only saying this because I'm being recorded." He nods to my recorder and waits for the students to finish laughing at his joke before adding, "But that means front to back."

After he removes the cadaver's brain, Schumann holds it up and points to the optic nerves. "See them?" he says, excitedly. "Aren't they cool?" Stepping back, he invites other students to look. "Take a look at the optic nerve. Isn't that cool? Everyone see?"

Then each group is given information about the person who lived in the body. As the students sit around a table, they learn the person's age, vocation, and cause of death.

This is a beautiful thing, Schumann will say to them. *This person donated their body for your medical education. Maybe they hoped that you'd learn something that will help others.*

Course faculty and upper-level med students will walk around the lab, inviting the new students to discuss how they feel. The same first-day ritual will be staged in the spring, when Schumann, who is an associate professor in the Department of Neurobiology and also in the Department of Oral Biology, teaches head, neck, and throat anatomy to dental students. Sarah Albini, a fourth-year dental student, says the first-day ritual is emotional.

"You know you're going to be doing dissections, and you're like: *Oh yeah, it's going to be a cadaver*. But, then when that person's in front of you, and then you're putting that person to a family. So yeah, it definitely has a lot tied to it."

information quickly. "They're not afraid of the material," he says. "It's just very clear."

Campwala, who graduated from Pitt earlier this year with a degree in biology, *is* interested in becoming a surgeon. She beams after Schumann's remark in front of the group. Campwala tells me later that Schumann will often compliment students with an exclamatory, *You guys should be in medical school!*

His level of enthusiasm never drops. Rice-Stubbs says that when Schumann stayed late to help her in the lab, he gasped as he pointed out nerves: *Wow! Look at that!* "He's seen the same nerve thousands of times," she says.

This Friday morning in the lab, he's checked in on three groups of students so far. He heads to a fourth. He shows them how to fold back the dura, then asks a student to hold the cadaver's head by the jowls while he dissects. He's handed a scalpel, but before he cuts, he points at the brain.

"There's the optic nerve," he says. "Does everyone see the optic nerve?" ■