



## It's Not Your Parents' Anatomy Course

BY DEBORAH C.K. WENGER

In anatomy instruction, “Read chapter 6 and dissect your cadaver for four hours’ just doesn’t work anymore,” says Jeffrey T. Laitman, PhD. A combination of the use of new technology and the integration of humanism into medical studies has ensured the evolution of first-year anatomy instruction in many medical schools from merely a hurdle to be cleared in order to get to the practice of “real” medicine into a multidimensional, exciting educational experience.

### The Cadaver as a Person and a Patient

The experience begins at the very start of medical instruction. “The cadaver is the student’s first patient,” says Dr. Laitman, Professor and Director of Anatomy and Functional Morphology at Mount Sinai School of Medicine in New York. This sentiment is echoed by Julie M. Aultman, PhD, Bioethicist and Assistant Professor of Behavioral Sciences at Northeastern Ohio Universities School of Medicine (NEOUCOM). At NEOUCOM, says Dr. Aultman, “before our first-year students begin studying and dissecting their cadavers, they take a three-week ‘prolog’ session. In this session, the anatomy professors and I talk about the cadaver as a person, among other issues.”

NEOUCOM has been working at integrating the humanities into the medical school curriculum. This year, for the first time, Dr. Aultman incorporated art into the first-year anatomy course. “Knowing the rich history of anatomy, especially how anatomists recorded their findings and experiences, I thought medical art history would be a great starting place to teach students the history and ethics of anatomy, including how the cadaver was and is perceived as a patient/person, and the political, ethical, scientific, and religious issues surrounding how the cadaver is obtained and studied. I want to give students a visual experience of seeing the cadaver as patient—a former life that is entitled to dignity and respect—while pro-



*Dr. Julie Aultman prepares for a lecture on art in anatomy.*

viding them with a well-rounded education in the humanities.

“When showing students cadaver-art, the students begin to see the cadaver as both an educational tool and a unique being possessing a personality and a life history. Students need to be reminded at the end of the semester, when their cadavers no longer resemble a human being, that even the remaining parts of their cadaver-patients are still gifts and must be respected. At this point we get into small groups and discuss the attitudes and feelings surrounding their experiences. As students reflect on their experiences, they seem to appreciate even more the gift of a person’s body.

“I use art and ethics at the beginning of the course, and it’s important to follow up after the students have completed a rotation,” says Dr. Aultman, who also uses art

### Dr. Aultman on shaping students’ attitudes:

There’s a cynicism evolving over the past 10 years thinking that medicine is a business rather than a profession—malpractice, cutting costs for HMOs, and the like have placed a burden on the students and physicians who are thinking, how can we change the system? They feel powerless to do so, and this contributes to the cynicism. They feel they have to treat as many patients as possible within the shortest amount of time without thinking of who they’re treating. It’s a collection of things that have contributed to how medicine is perceived now.

How do we deal with this? Starting with medical students in their first year, we inform them what HMOs are, what insurance looks like—inform them right off the bat and have them reflect on some of the cynicism they’re developing. A physician is someone who has or understands humanism, who understands medicine as more than a business, even beyond the clinical experience. It’s an art, where you have to

balance the patient’s own values with your own and to grow relationships based on the understanding that you’re part of the community. It’s not about individuals; it’s about working with the community and understanding the values of the community.

We should be aware of the needs of all the people within our communities. Values vary, but there are universal underlying meanings to these values, and I strongly believe that in order to improve health care overall and make a better system of health care, it will take a better group to understand health care as a community problem. We have to take the individualism and self-centeredness out of medicine and see what the big picture is.

As we talk about all these issues, students become less cynical because they recognize that they’re not only reflecting their own beliefs but also those of their role models. We just have to remind students why they entered medical school in the first place.

when teaching psychiatry students. “Whatever they’re doing, we need to have students reflect on what they did, not only to value the patient as a person, but also for their own personal moral code, to see what has developed over the past semester, what biases have developed or dissolved. Taking that personal check is really important.”

“We’re not about teaching just facts,” says Dr. Laitman. “We’re about teaching the sacredness of the human body. When you teach the disease rather than the person, you end up doing something that runs counter to producing an understanding of a patient as a person and not as a set of diseases or anatomical parts. Complete dissection of the body teaches our students the importance and sanctity of that. The entire path of a dissection, over many months, is a difficult, stressful, growing, and beautiful experience all rolled into one. Any student who goes through it is altered and changed by the experience.”

### A Real-World Experience

“Our gross anatomy course is different from other programs in that we have more than 50 clinical participants who work with us,” explains Dr. Laitman. “For instance, our laparoscopic surgeons will bring [laparoscopy] towers to the laboratory and our stu-

dents will learn how to visualize anatomy laparoscopically. Similarly, we have our cardiologists come to teach them via ultrasound. It’s a different type of experience than the traditional lecture and dissection.”

As an example, “when we teach the anatomy of the heart, while we’re



dissecting in our lab, we have teams of cardiologists who come in and they’ll be in another room with second-year students as models. Our first-year students go through different stations to observe the heart as it’s beating, as it’s moving, so they can identify various anatomical landmarks as taught to them directly by the cardiologists.”



*Students and faculty participate in the Living Anatomy Project.*

### Dr. Laitman on teaching:

I’ve given a lot of thought to the role of the teacher. What is this role? What do I have to give to my students? I see it as a sacred trust. As I’ve gone up the ladder, I’ve learned that in the end, I don’t answer to the dean. I really have to answer to a much higher authority. Because if I do a poor job with one of the brightest people we have, if I take shortcuts, if I cheat them, if I don’t do my best—I can’t do that to them. Here I have an incredible opportunity to do something, and I approach every lecture that way. These are my sons and daughters. They’ve waited their whole lives to come before me. I can give them a list of 20 things to memorize, or I can try to figure out a way that is going to have their hearts pounding and their minds excited. That’s the opportunity that I was given, and I work as hard as

I can to give the students the enormous smorgasbord of exciting knowledge in front of them, something that really opens them up.

I’m trying to prepare the students’ minds to see the world in multiple modalities, which is what tomorrow’s physician has to see. That’s what is so exciting. That’s why, if you come to our class when we’re doing the heart, a portion of the class can be dissecting a heart and another group will be next door with the cardiologists looking at the heart of a live individual, and when they’re done they can come back and look at something grossly-anatomically. At the end of the day they’re so excited because of what they have seen, and their minds have grown. That’s the challenge, that’s the excitement, and that’s what we try so hard to transmit.

Why teach this way? “We can’t teach the physicians of tomorrow with the tools of yesterday,” Dr. Laitman notes. “These are people who are raised with multimedia and multimodal worlds. The audience has changed, and we have to give them new tools and new dimensions.” It is also important to teach students early on to use the technology to which they will be exposed in their clinical years. “It’s imperative that our students know how to view the heart, for example, not only from looking at a cadaver or a textbook, but from new types of imaging modalities. We teach them MR, CT, so our students, from an early stage, will be introduced to visualizing other views of the heart.”

### The Living Anatomy Project

A fascinating innovation being tried by Mount Sinai is the Living Anatomy Project. Conceived by two medical students, Stephanie Pieczenik and Cary Sager, working with Dr. Laitman, the Living Anatomy Project incorporates yoga and Pilates sessions into the anatomy course. When the anatomy class covers a specific area of the body, the two students—a yoga instructor and a Pilates teacher, respectively—led

optional sessions in yoga and Pilates exercises working the same parts of the body. “These sessions were designed both to reinforce the anatomy that students were learning and at the same time to provide an atmosphere of relaxation, enhanced mental health, and a bit of fun. We had so many students sign up that our student-teachers had to run multiple sessions. Many faculty came as well; even our deans came. Everyone had a really good time with this. It’s a terrific example of creative, energetic medical students really working with faculty and coming up with ideas that are outside the box.”

### Improving the Image of the Basic Sciences

“The basic sciences are not always valued by students—but perhaps this is because we do not show students how the basic sciences are an integral part of their medication education,” Dr. Aultman maintains. “Innovative teaching methods that are technologically up-to-date and engaging can help students understand the purposes and goals of the basic sciences for understanding health and disease, interacting with and diagnosing patients, and so on.

“Students are so eager to get into practicing medicine that they forget the roots of medicine. And even though the clinical faculty are supportive of what we do, they

sometimes forget also. It wasn’t until we started changing our curriculum—this is our first time dealing with our first-year students—that the clinical faculty has become more supportive of what we do, because they see that to make a better system of health care, it will take a better group to understand health care as a community problem.”

“We don’t even use the term ‘basic science’ anymore,” Dr. Laitman observes. “We prefer to talk about the pre-clerkship years. And we have our clinical faculty totally involved from the get-go. We teach our students within the context of a functional, clinical milieu. The anatomy experience for students is a segue into their other years, and we try to make them cognizant of what they’re going to need. We’re trying to open the door, to show these people the wonders of our craft, and to do it in a way that’s going to be maximally beneficial to them as practicing physicians.

“The basic sciences are morphing and changing. The old lines have started to break away, and most basic science research is now interdisciplinary. Teaching modalities of the basic sciences have changed radically. The



*Dr. Jeffrey Laitman (center) keeps his faculty happy.*

future for anatomy in particular, among the basic sciences, is extremely positive, because our world is exploding with possibilities in a way that we have never seen before.”

“I see even more humanities being integrated throughout the basic sciences, providing students with a holistic picture of medicine,” Dr. Aultman concludes. “As our technology continues to advance, I believe there is a greater demand for sensitive, caring physicians who can balance the technical with the personal. Integrating humanities into basic science education sends the message that medicine is itself an art.” ❖