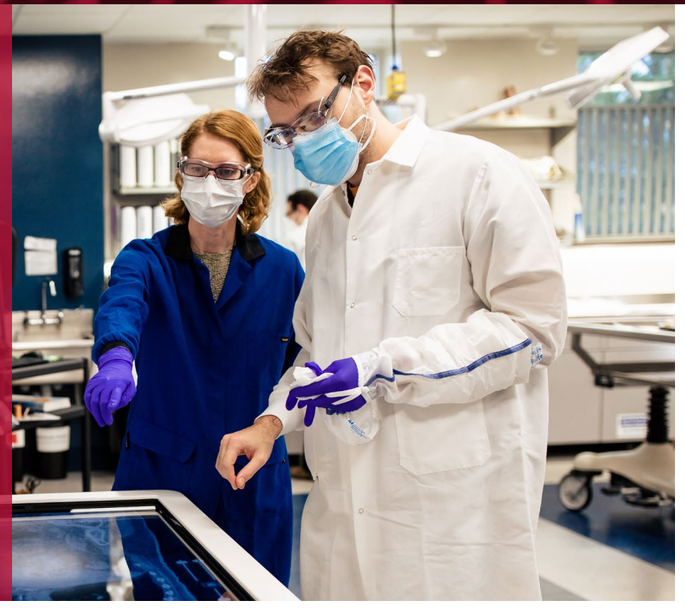
Expectations are high for first-year students

The First Patient

Medical students practice respect at WWAMI Anatomy Lab

BY ELIZABETH SAMPSON
PHOTOS BY JANELLE ROSE



Anatomy Lab Director Alison Doherty and student Dane Patey use an Anatomage anatomical data table in the WWAMI Anatomy Lab at the University of Wyoming in March.

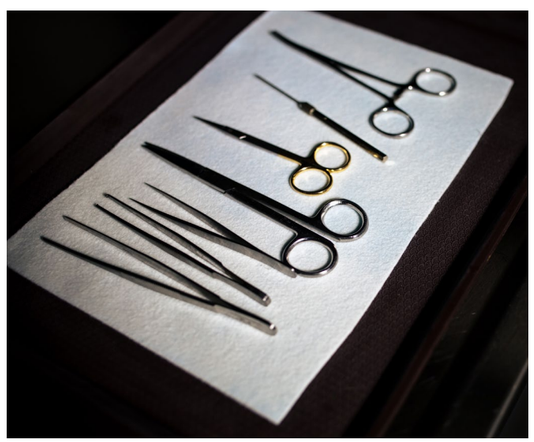
When medical students start their training they may try to imagine who their first patient will be. Will it be a grandmother with a heart condition? Could it be a young athlete with a broken arm? No matter who they might envision, Alison Doherty, PhD, will actually be introducing them to their first patient in the first weeks of medical school—though they may never learn their patient's name.

Doherty is a clinical associate professor and director of the WWAMI Anatomy Lab at the University of Wyoming (UW). WWAMI is the University of Washington's multi-state medical education program that Wyoming medical students participate in. WWAMI stands for Wyoming, Washington, Alaska, Montana and Idaho.

Each WWAMI student Doherty takes under her wing learns to treat the people who have donated their body as their first patient. As the students begin their work in the Anatomy Lab, the donors they study teach the students not only every system of the human body, but also what it means to treat all patients with dignity.

"Dr. Doherty has immense respect and gratitude for the donors, and she really expects nothing less from anyone else who has the privilege of going into the lab," said first-year medical student Taylor Thompson. "It's really inspirational to see and work with her every day and see that that never wanes at all."

This emphasis on teaching her students how the donors are to be treated really helped third-year medical student Rida Fatima, who found herself feeling incredibly nervous before she started her first Anatomy Lab class.



Tools at the Anatomy Lab.

Fatima, a Rock Springs native who is interested in primary care and mental health, said she didn't have any prior experience in that kind of environment and didn't know what to anticipate. However, she said Doherty quickly set the bar very high for what she expected of her students and their work with the donors, and that helped Fatima through her uncertainty.

> Doherty explained she takes the time to ease students into the prospect of human dissection through a carefully planned series of steps.

"She did a great job to set up those baseline expectations," Fatima said. "There's really not any tolerance for anything beyond an incredible level of respect for the donors."

Doherty explained she takes the time to ease students into the prospect of human dissection through a carefully planned series of steps. First is a lab overview that explains the donation process and what that donation means to the donor and their family members. Next they are given very basic information about the donors, including their age at death and their biological sex. The students look at CT scans of the donors and try to determine the cause of death based on information from the scans. Then they present their diagnosis to their peers. As they get closer to going into the lab for the first time, Doherty gives them time to ask questions.

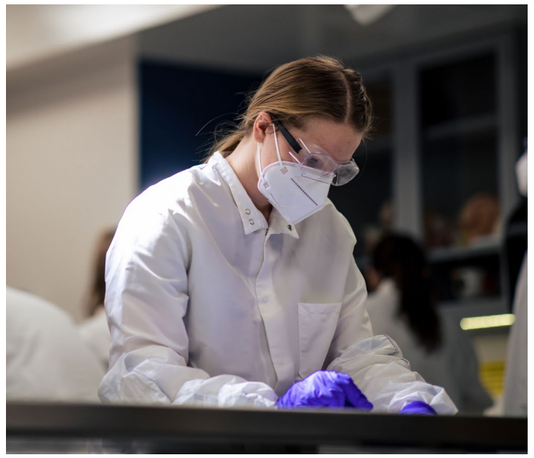
"We talk to students about any fears they may have, what they are expecting and how we can change that perception," Doherty said. "We have a nice sit down before students even make it into the lab and talk about some of these feelings and talk about what they may expect—and try to enlighten them in terms of what will actually occur in the lab."

Then it is time to enter the lab.

"After quite a bit of lead up we introduce them to the lab with the body donors covered," Doherty said. "That really helps to get some of the student nerves out of the way. We really don't want to throw a student into a donor setting where they have to instantly come in and start a dissection—because that's not a very kind way for our students to have

Medical students Cody Abbott, left, Blake Hopkin and Ariel Rap study at the lab in the University of Wyoming.

An "incredible privilege" to learn from donors



Medical student Ariel Rap attends Anatomy Lab at the University of Wyoming in March.

that first introduction to their first patient."

Doherty knows this from her own experience.

"When I went through my first donor experience, you are thrown in there," she said. "There's no information, you have no idea what to expect, there's no intro. You're given a dissection kit and told to bring your gloves and a lab coat and off you go."

Doherty's kinder approach resonated with third-year medical student Renae Wollman, who grew up in a Hutterite community in South Dakota. Like many of her peers, she was excited and apprehensive on her first day at the Anatomy Lab, but Doherty's measured path to introducing her students to their Anatomy Lab donors eased Wollman's nerves.

"Even before we started our official medical school training we were introduced to our donors," Wollman said. "She cultivated this relationship really early on in terms of 'these are the donors you are going to be working with for the next two years.' She didn't jump right in with, 'Here's your anatomy lab, here's your donor, go straight to work.' She made sure we had time to process and adjust to our medical student roles."

When it was time to actually begin working with the donors, thinking of them as her first patients helped Fatima with her own emotions.

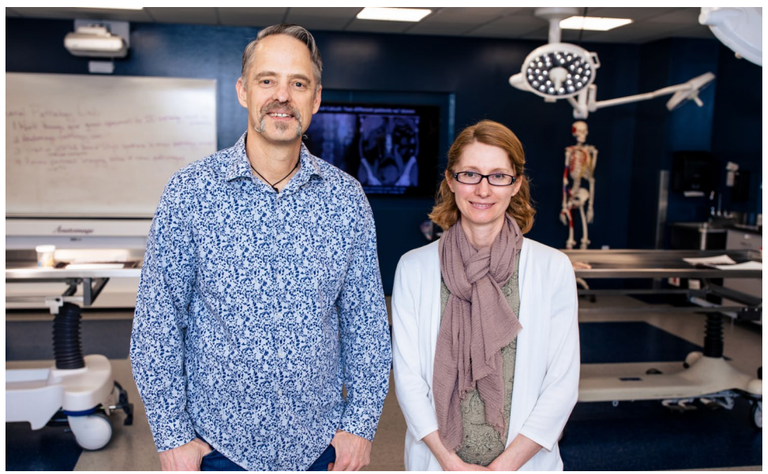
"When you think about working on a donor, it makes you really, really nervous," Fatima said. "I wasn't sure how I would react to that, but with Dr. Doherty framing it as, 'this is our first patient, and we will treat them with the same amount of care if not more because we are so grateful.' That really helped to ground you."

Fatima said each time she was in the Anatomy Lab, she learned more than she could have ever imagined.

"It's such an incredible privilege to be able to learn in that manner," Fatima said. "Every time I went in there I was amazed at how incredible the human body is and how intricate everything is."

Thompson had the opportunity to study abroad during her undergraduate education and enrolled in an anatomy lab class while there—giving her a unique perspective of how Wyoming's Anatomy Lab excels. She said her experience in another country was drastically different than what she had seen in Doherty's lab.

"It was shocking because they did not keep track of their donors," Thompson said. "At this foreign school I went to there would be bins of different things. You would grab an arm out of one bin randomly. There were 200 kids in that class, and no one had any concept that this was a human arm you were dealing with."



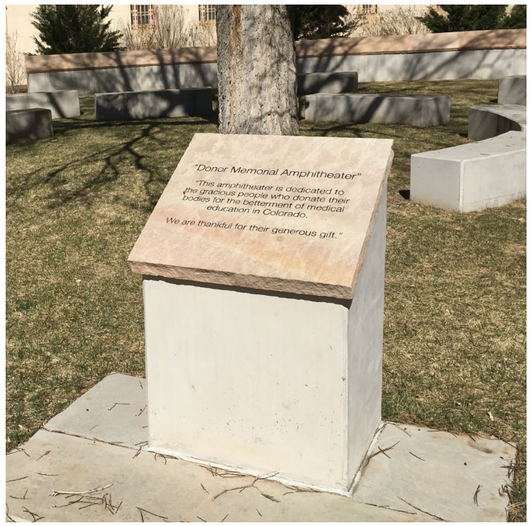
Tim Robinson is the director of the University of Wyoming's WWAMI Medical Education Program and Alison Doherty is the clinical associate professor and director of the WWAMI Anatomy Lab.

For Wollman, who is considering a surgery-oriented medical career, her education in Doherty's lab helped ready her for her surgical rotation.

"It absolutely prepares you," Wollman said of the dissection work in the lab. "It's certainly lower risk than having a living person in the operating room, but I think with the way Dr. Doherty taught us, it almost felt the same. She did a very good job of consistently reminding us that we are to respect our donors and preserve their dignity as we are privileged to learn from them. I think that translated really well to the operating room, because it didn't really feel like that much had changed."

Donor memorial service introduces students to patient families

WWAMI Anatomy Lab students are invited to participate in a memorial service with donor families at the University of Colorado Anschutz Medical Campus. The campus is home to a memorial garden dedicated to the donors, and each year students place an etched stone in the garden to commemorate their gratitude to the donors.



A donor memorial garden at the University of Colorado Anschutz Medical Campus is dedicated to the donors. WWAMI Anatomy Lab students are invited to participate in a memorial service with donor families.

Doherty explained the memorial service allows students to pay their respects to the people who donated their bodies for their educational benefit. The ceremony often includes music, poetry readings and students reading letters of thanks to donor family members.

These family members also get to speak about their loved ones, revealing what their lives were like and what they loved.

"That is something that's really critical for students to grasp: one, what this meant for that donor and for the family members of that donor; but two, to hear from a family member who has lost a loved one in this medical realm," Doherty said. "To hear back from the family members about how much that person meant, it really gives a human quality to the culmination of that experience with any of the donors that we have in our program. There is not a dry eye in the room."

> "After attending the memorial service, I think many of us consider doing the same."

Wollman said when she attended the memorial service it really brought home the individual stories of the donors she worked with.

"There's a personal story with every single donor," Wollman said. "They lived full rich lives. It's amazing when someone chooses to donate their body to further medical training and scientific knowledge. After attending the memorial service, I think many of us consider doing the same.

Fatima called the experience a humbling one; especially hearing from the donors' families.

"It was such an incredible experience to hear about the wonderful human beings that they were," she said. "We got to learn about the people who made that decision to contribute to our learning this way and how wonderful they were to their families; in their pursuits and the things they were interested in."

For Doherty, the memorial ceremonies are some of the best she's experienced throughout her career, but just recently they started to take on a different meaning.

She explained that her father, who passed away last April, is a body donor and is in a program in Colorado. She said some donors are assigned to the lab for two years, and depending

Innovation in design and instruction

on when they die, they might not be placed with a lab for up to two years. That means family members may not get their remains back for up to four years or even longer.

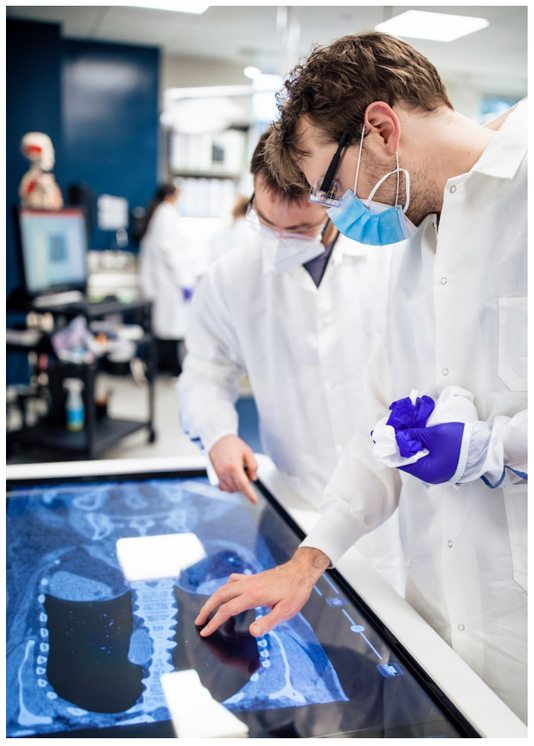
"Having both sides of that view now, it's been very difficult but also very rewarding," Doherty said. "I'm very proud of his donation."

Anatomy Lab experience may be unrecognizable to past students

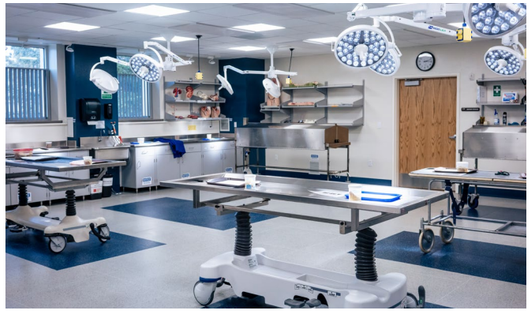
From a more respectful introduction to their donors to safer lab working spaces, the medical school anatomy lab experience has changed in noticeable ways in recent years.

Students are still expected to answer anatomy questions in a pin test format, but Doherty said those tests are clinically relevant to what they are learning about.

"We no longer have these pin tests that are cloaked in a surgical area where we expect students to identify anatomical structure through a surgical window," she said. "We're not here to trick students to learn every little detail of every little system. We want them to take away from us something that is useful for their career."



Medical students Cade Budak, left, and Dane Patey use an Anatomage anatomical data table at Anatomy Lab at the University of Wyoming in March.



Anatomy Lab Director Alison Doherty designed the new lab at the University of Wyoming to have windows that let in natural light and provide adequate surgical lighting over each donor table.

She said she wants students to be able to truly learn how the anatomy they are dissecting in the lab pairs with the CT scans they will see in the future.

"The human form and function thread is really more about clinical anatomy and how it's relevant—not focusing on these really obscure anatomical minutia, but really trying to prepare students for their future clinical experiences, and giving them the tools to have that three-dimensional view of the internal human form as they are looking at 2D imaging modalities and doing their physical exams," she said.

> "Anatomy probably changed more than any other topic."

Doherty has also made a point to teach the Anatomy Lab with a team approach. She said in previous anatomy labs, a donor would be assigned to a single group of students.

"I am really trying to get away from that," Doherty said. "In the clinical setting patients really aren't just one physician's patient. They really are a team's patient."

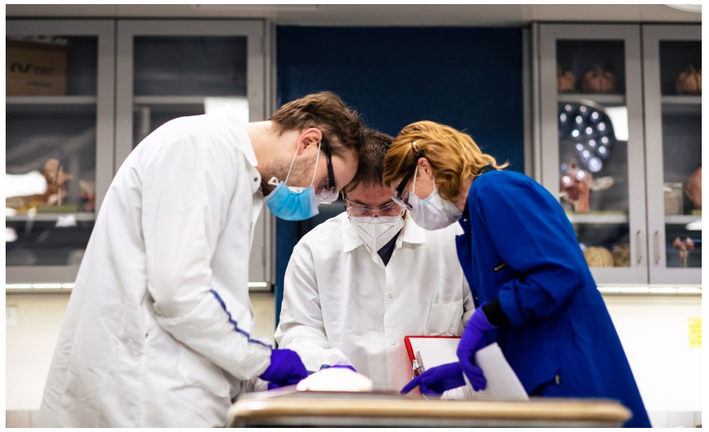
She said the UW lab has nine donors at most. Four of them are for prosections (three of those being last year's donors), which are the dissections she and her team complete to exacting standards as an example for the students. The other five donors are assigned to the 20 students in each cohort. As each student interacts with all five donors, they have a better chance of seeing variations in human anatomy.

"They really have to understand how to capitalize on their learning and recognize what each donor has to offer," Doherty said. "Students really benefit from understanding the anatomical variation that we have here even in a very small cohort of donors."

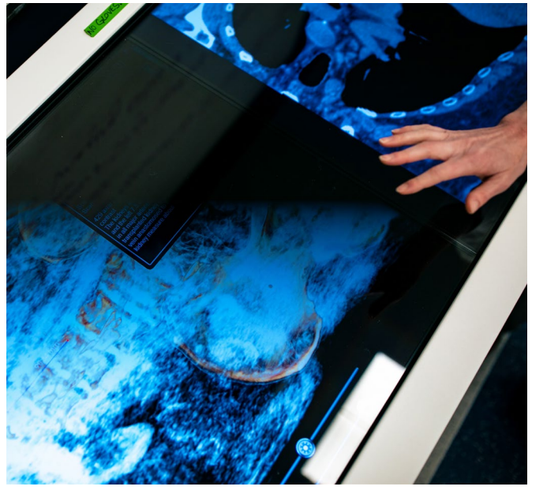
The entire curriculum of the Anatomy Lab experience has shifted as well. Tim Robinson, PhD, is the director of the University of Wyoming's WWAMI Medical Education Program. He noted that a major curriculum change occurred about five years ago. Now students study seven blocks—such as circulatory systems—with three threads running through them, including the anatomy thread, or human form and function. Robinson said with the change in curriculum, Doherty now teaches in connection with the block students are in.

"Anatomy probably changed more than any other topic," Robinson said. "Instead of it being its own course, it's called a thread now. In each WWAMI course there are anatomy topics that are taught. She has to not only deliver her anatomy content, but she also has to be aware of the context with which it is being taught. When the students are in the cardiovascular, pulmonary and renal course, then she's teaching the anatomy associated with those biological systems."

Robinson went on to explain that when the major curriculum change occurred, Doherty was the anatomy director for the entire University of Washington Medical School (the university that leads the WWAMI program).



Medical students Dane Patey, left, and Cade Budak work with Anatomy Lab Director Alison Doherty at the lab in the University of Wyoming in March.



The Anatomage anatomical data table helps students learn about the human body.

"She was very instrumental in developing what the anatomy curriculum would look like," he said. "She is an innovator in terms of instruction. She is a leader within the whole University of Washington School of Medicine when it comes to active learning."

Doherty grew up in Lander and is a UW alumna. She went on to earn her master's and doctorate from Kent State University in Ohio, and during her five and a half years as a PhD candidate, she also taught human gross anatomy and microanatomy at Northeastern Ohio Medical University.

She then transitioned to Colorado State University where she did postdoctoral work with animal models in human disuse osteoporosis. With her love of Wyoming and her strong ties to the state, she took the opportunity to return, starting with the WWAMI program in 2014.

Doherty was a key player in designing the new University of Wyoming Anatomy Lab. According to Robinson, when the WWAMI curriculum changed, UW went

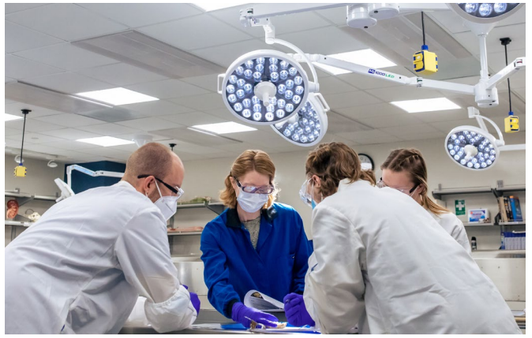
The "keystone" to medical education

Anatomy Lab faculty and students prepare for a session at the lab in the University of Wyoming in March.

from having 20 medical students to 40 medical students on campus.

"We have twice the number of students now, so we had to build a new lab," Robinson said. "Dr. Doherty went out and looked at different labs, and she designed our $1.5 million state-of-the-art facility that we now have. I've been in several labs during my time as WWAMI director, and I've never been in a lab that is as professionally run or is as organized as Dr. Doherty runs here with Wyoming WWAMI."

Many anatomy labs around the country are very outdated, Doherty said, especially with consideration to ventilation and working with chemicals.



Anatomy Lab Director Alison Doherty, center, works with students at the lab. Doherty takes the time to ease students into the prospect of human dissection through a carefully planned series of steps.

"We are constantly getting additional information about the safety of working with formaldehyde and other embalming fluids," she said, noting she worked with UW's safety office to improve the safety of the lab. "Even though we have a very good chemical disposal system at UW, I really saw areas where we could improve the anatomy lab working environment."

She also worked to implement better lighting in the lab. Not only does the new lab have windows that let in natural light (dispelling the old dark, creepy basement lab notion), the lab now has adequate surgical lighting over each donor table.

Thompson, who worked in the old lab as an undergraduate and now in the new lab as a medical student, notes the new lab is much larger.

"It's a wonderful lab," she said. And for someone like Thompson who loves studying anatomy, working with Doherty in the new lab has been a gift.

"I have always thought anatomy is the keystone to everything else we're learning," Thompson said. "It's just so amazing to be able to go into the lab and see it firsthand. It's so much more meaningful than looking at a picture in a textbook when you're actually finding a certain nerve or vessel. It's the foundation of everything. You need to know every part of the human body to know how it's all working together."