

At Penn State, a fast track to pathology residency

Valerie Neff Newitt

March 2022—A new program called Pathology Accelerated Pathway at Penn State shepherds pathology-bound students toward residency readiness in three years instead of four and is set to begin this spring.

The accelerated program provides students with an opportunity to complete three highly curated years of medical school at Penn State College of Medicine and become eligible for a residency immediately thereafter. It's one program in Penn State's portfolio of three-year accelerated pathways that includes also family medicine, emergency medicine, diagnostic radiology, internal medicine, neurology, psychiatry, and orthopedics.

"The goal is to find people who are committed to pathology early in their medical education," says Jordan Newell, MD, associate professor of pathology and laboratory medicine and obstetrics and gynecology, Penn State College of Medicine. "If pathology is what they want to do, we will provide them with the training they need to be successful as pathologists and get them to their goal in the shortest amount of time."

There is also a broader purpose to the program, says Aryn Rojiani, MD, PhD, professor and chair of pathology and laboratory medicine at Penn State and clinical service chief, Penn State Health Milton Hershey Medical Center. "This effort also stems from the fact that our field has seen a consistent decline in the number of U.S. medical seniors choosing pathology as their career residency choice. A number of national organizations, the CAP being one, recognizes this significant issue and addresses it in various ways," says Dr. Rojiani, a member of the CAP's Pathologist Pipeline Ad Hoc Committee.

The questions that have been circulating, he says, are: "How do we get students interested in the field early on? How do we locate them? How do we encourage them to stay in pathology?"

"This program is a focused intervention to help students decide their career choice early on and be able to take the greatest advantage of the work they will be doing. To be clear, we are not making decisions for students," Dr. Rojiani says. "We're not forcing pathology on them. We are providing the information, resources, and support they need to focus on an informed choice and take that choice to the most efficient conclusion—reaching their career goal."

While "3+" programs, as they are called, are not exclusive to Penn State, the 3+ pathology program might be. "I personally am not aware of any medical school outside of Penn State that has such a program in pathology," Dr. Rojiani says.

About two years ago the pathology department raised the idea of a 3+ pathology program with the departmental undergraduate medical education committee. "We had heard about some of the successes in other disciplines and the idea for an accelerated pathology pathway began to snowball," Dr. Rojiani says.

Catherine Abendroth, MD, professor of pathology, distinguished educator, and vice chair, admits she had reservations initially.

"I was skeptical of this for pathology because I believe it's important for pathologists to be well rounded, and I thought to be really well rounded they needed the full four years of med school," she explains. "But then I came to realize we could curate students' education specifically, provide superlative one-on-one mentoring, and help them get the experiences that will be most relevant to their professional development as pathologists." In short, she says, she realized they would not be missing out on anything. "They would just get more of what they need. So now when someone asks, 'How can you get rid of a whole year of medical school?' I explain we can narrow the time frame in part by eliminating some of the exploratory electives, because our program targets students who are already interested in pathology." Students in the accelerated program use about half of their summer break to meet the program's demands and double up on coursework during some periods.

Key to the success of the program is the early identification of the best candidates and the selection of the right student participants.



Dr. Abendroth

“When students apply to our medical school, there is a secondary application for the accelerated programs,” Dr. Abendroth says. For the accelerated pathology pathway, “they have to write short essays in answer to questions intended to assess their skill level in competencies we think are particularly important for pathology.” Examples: Are they good critical thinkers? Do they have good communication skills? Do they have great time management? “As you can imagine, that is important not only to this accelerated medical education, but to their futures as pathologists when they will need to manage multiple tasks. Are they detail oriented? They will need to be, to avoid errors in diagnostic reports. Can they think visually? They will have to be able to look at slides and specimens and understand those visualizations.”

Dr. Rojiani says the best candidates will have a strong drive to learn. “They must want to continue to advance and stay current with what’s happening in the field. In addition to our constantly changing technology, even the way we classify tumors, the molecular aspects of pathology, is evolving. If you haven’t read a paper recently or reviewed the last classification, you are already obsolete and making mistakes.”

“Without that drive to be on the cutting edge of knowledge,” he adds, “pathologists simply cannot effectively contribute to patient care. Students we select must have that internal drive.”

The vetting of program candidates is robust, Dr. Abendroth says. After they submit an application that goes through the program committee, they are interviewed. “We will have had a lot of contact and discussion with them before they’ve ever been offered a position and accepted it. They do a career confirmation elective in the spring of their first year, which gives them hands-on, real-time experience in pathology.”



Dr. Rojiani

Mentors with whom students will interact regularly are identified within the department. “We give them an exposure to what actually happens in pathology,” Dr. Rojiani says, “so they have a better understanding of where they’re going in the long run.”

If students change their minds and decide the accelerated program is not for them, they can “decelerate,” Dr. Abendroth says, and return to the four-year pathway. “They can do that at any point in the program. But opting out rarely happens across any of [Penn State’s] 3+ programs. If we’re doing a good job at selecting candidates, it should not happen at all.”

The accelerated pathology program offers no courses that aren’t also available to other students, though the 3+ curriculum is front-loaded with the courses that have the most impact on pathology. “All medical students have to do what we call an acting internship in their third and fourth years, and they can select from a number of different

areas," Dr. Abendroth says. "For our accelerated students, however, we have selected an acting internship in oncology, because much of what we do diagnostically has to do with oncology patients."

Dr. Newell says one other relevant acting internship, in family medicine, is approved for the Pathology Accelerated Pathway students. "Certainly people with cancer diagnoses see their family doctors. In addition, the clinical laboratory side of pathology ties in nicely with family medicine because many people will see their primary care providers and get blood work and other testing."

Dr. Abendroth describes it as a "win-win."

"When our students are on their family medicine acting internship, they'll see patients coming in for their regular diabetes follow-up and their A1C result. The pathology student can help them and the rest of the medical team understand what these lab results mean and explain sensitivity and specificity, and why they can't always take these things at face value."

Two students have been selected to participate in the inaugural accelerated program this spring. One had extensive experience working in a medical examiner's office and was involved in related research. "She already was hooked on pathology," Dr. Newell says. The other had been an undergraduate chemistry major and had laboratory experience in the research setting. "They both related to me that they were ecstatic when the accelerated pathology program became available. That really felt good," he says.

The total size of the Penn State pathology residency program is 16 residents over four years. "On average we have four residency spots per year," Dr. Abendroth says, "so accepting two students through this program constitutes 50 percent of our incoming class. It would be ideal, though, to have a slightly bigger program and be able to take more students into the accelerated program."

As students become more aware of the program's benefits and realize jobs in pathology are available, Dr. Newell says, "we'll see a turning point in student interest. The job market in pathology is strong; there are a lot of jobs out there. It won't be long until students get a sense of that reality and start to look at pathology more favorably as a viable career option. When that time comes, I do think we could expand. But we would have to fully evaluate the demands it would place on faculty."

"Any way in which we can help reduce the cost of medical education is going to be a motivator for students," Dr. Rojiani says. "It's going to help them limit the typically significant debt they incur. The idea that we can compress medical school training—not the pathology training—into a three-year period is extremely attractive for students who already have a sense of what they want to do in residency."

Dr. Newell adds, "They're going to get to their attending salary one year sooner than they would have, and that is not insignificant."

The accelerated program cuts not only expense but also stress for participants. "It conserves time and effort when it comes time to apply for a residency," Dr. Rojiani says. To be compliant with the National Residency Matching Program, no participant can be guaranteed a position, but the program's participants would be among the top choices for a residency at Penn State. "This understanding can save students the cost and effort of the interview process," he says. "If they are happy and ready to become residents in our program, then they're almost a shoo-in."

Students would still have the option to go elsewhere for their residency if they so choose, Dr. Abendroth says, and they would be attractive candidates. "If someone went through a similar accelerated pathology program—assuming it existed anywhere else—I personally would look on that candidate very favorably because of the mentoring and tailored education they would have received. After all, this is all an effort to make sure students are ready to start pathology residency. They're better prepared than most other students coming off a traditional track."



Dr. Newell

Residency readiness may be the biggest advantage of the program for participants, who will gain confidence and a level of comfort they wouldn't otherwise have, Dr. Newell says. "Imagine a medical student from the traditional track joins our pathology residency program. We might have seen them for one rotation or two one-month rotations, and they might know a few people in the department," he says. "But if they were coming in from the 3+ program, doing all of the curriculum that we had set for them, they would know virtually the entire department. They would know the laboratory information system. They would know how the department runs and works on a daily basis. A lot of first-year residency angst pertains to getting over those speed bumps that create a significant amount of stress during that initial year."

Dr. Abendroth agrees. "Pathology is a field unto itself and a lot of student clerkships may or may not include much pathology, so many first-year residents face a massive knowledge gap they need to tackle right at the beginning," she says. Because the accelerated program focuses on readiness for pathology training, "students will have already experienced so much before their residency begins. For example, when doing those acting internships with other students going into oncology, internal medicine, or family medicine, our students will do it with a pathology focus. So when a patient undergoes surgery, our students will follow that specimen out to the gross room. They'll follow that specimen through pathology. They'll know the diagnostic criteria for whatever this is and the implications of the diagnostic information. So when they start their residency, they already will have done a lot of the things current residents are doing."

The accelerated program may also strengthen the field of pathology itself. "Just a familiarity with pathology as a specialty, the awareness among medical students—even those who aren't in the program—is important," Dr. Abendroth says. "They're going to know more about pathology as a specialty by virtue of knowing others who are in this track. Furthermore, because our students partner with other departments during acting internships, they are able to share their pathology knowledge with future oncologists, future surgeons, future primary care physicians. It's definitely going to increase across-the-board awareness of what pathology is and how it contributes to patient care."

Valerie Neff Newitt is a writer in Audubon, Pa.