



A Full Load: Teaching, Research, and Clinical Practice in Pathology at UChicago

by Cynthia Mwenja, PhD

Aliya Husain, Professor of Pathology and Director of the Thoracic Pathology Fellowship at University of Chicago Medicine, melds her exemplary work in teaching, mentorship, research, and clinical practice to advance the field of pathology on each of these fronts. She has published a wide variety of research on heart and lung pathologies; according to her website, she is a “surgical pathologist with subspecialty boards in pediatric pathology. Her diagnostic expertise includes thoracic pathology with focus on heart and lung transplantation (in both adults and children), interstitial lung disease, and malignant mesothelioma.”

After earning her medical degree from King Edward Medical College in Lahore, Pakistan, Husain completed residencies at the Loyola University Medical Center in Illinois and the University of South Florida. She subsequently finished a fellowship in surgical pathology at Loyola and an internal medicine internship at Mayo Hospital in Lahore, Pakistan before beginning her work at UChicago.

Since its establishment in 1927, UChicago Medicine has grown to become a system of multiple schools, hospitals, outpatient facilities, and community clinics. Husain embodies the ideals of UChicago’s Department of Pathology, as presented on their website: “physicians and scientists work in close collaboration, merging the latest scientific findings with specialized diagnostic services in order to empower healthcare providers to better care for patients. Simultaneously, our training programs and educational resources prepare the next generation of world-renowned pathologists.”

Teaching and Mentorship

As a Professor of Pathology, Husain’s teaching responsibilities include instructing second year

medical students regarding clinical pathophysiology and therapeutics; this class, called ClinicoPathoPhysiology and Therapeutics (CPP&T), combines instruction in features of pathologies and their clinical presentations. According to Husain, in this four-month intensive course, students learn about “disease processes of common diseases.” Once students finish the course, they take their medical exams and begin clinical rotations. UChicago Medicine’s entire student cohort—around ninety to ninety-five students in each year of the medical program—all take this class; Husain has been running the pathology portion of the course for twenty years, teaching students how to examine patients in clinic during this last big course of their academic instruction at UChicago Medicine.

For the past sixteen years, Husain has also directed the Thoracic Pathology Fellow each year. After four years of pathology training, the student who is chosen to be the Fellow comes for a one-year sub-specialty training in thoracic pathology under Husain’s guidance. The job description for the position indicates the scope of the position: “The fellow provides initial assessment of urgent biopsies, reviews

all material with faculty and clinicians and presents at the weekly interdisciplinary chest oncology conference. The fellow also participates in other conferences as scheduled and in teaching residents and medical students. The fellow will be responsible for two or more collaborative translational research projects that are expected to be presented at national meetings.” Previous Fellows now work in a wide range of positions, many of them in academic settings similar to Husain’s.

Brittany Cody, MD, the current Thoracic Surgical Pathology Fellow at University of Chicago Medicine, says that “it is an honor to train” with Husain. Not only is Husain a peerless mentor, Cody says, but she is also “a fantastic human being, a kind and caring person who has a nurturing personality.” As the Fellow, Cody develops the workup of information for each patient, then she and Husain discuss the plan that Cody drafts. Cody appreciates the time Husain takes to sit down at the microscope together, giving time for Cody to ask questions. Cody says that Husain often adds information—“pearls of wisdom that people can’t find in a book”—to enrich Cody’s understanding of each situation. The



fellowship experience, Cody says, prepares students to work in a variety of settings that combine academics and clinical practice; in her career, she is considering focusing on lung diseases that are not tumors, such as emphysema or interstitial lung disease.

One of Husain's previous Fellows, Kamran M. Mirza, M.D., Ph.D., Associate Professor of Pathology, Medical Education, and Applied Health Sciences at Loyola University Chicago Stritch School of Medicine and Parkinson School of Health Sciences and Public Health, says that Husain has been an "incomparable mentor and teacher who has been instrumental" in his career path. He admires the ways that she continues to stay current with information in their shared field. She is "so knowledgeable and such an expert—yet so humble; she continues to learn." He hopes

to emulate Husain's example of "rising to the challenge and reinventing yourself" as Husain has done in her work at UChicago. Not only is Mirza inspired by her example of becoming an international expert in malignant mesothelioma, he also says that "working with her is a delight." He aims to have the same sense of sincerity that she exhibits, and he uses the lessons he learned from her in his current daily work. Additionally, Mirza appreciates the fact that Husain had responded to him when he contacted her during his graduate studies. "Despite being famous," he says, "she lovingly took me under her wing."

Clinical Work

In her clinical work, Husain focuses on heart and lung pathologies, along with identifying pathologies in pediatric

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patients. In her previous work at Loyola Chicago, Husain developed a specialty in pediatric pathology. Board exams in this area were established in 1991, and Husain passed them in 1992. Husain is also board certified in anatomic and clinical pathology. As a pathologist, Husain makes diagnoses after examining the patients and seeing their biopsies. Husain's clinical duties also include looking at biopsies for heart and lung transplants.

Because UChicago medicine is a referral hub for malignant mesothelioma, an aggressive cancer that often affects the lungs and is commonly caused by exposure to asbestos, Husain has become an expert in the pathology of this condition. She works with oncologists and surgeons to make diagnoses and recommendations for individual patients in her clinical practice. Husain says that all cancers are now treated by teams of experts, including

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oncologists, surgeons, radiation therapists, nurses, social workers, and—of course—pathologists. These teams—referred to as “tumor boards”—meet weekly for each case. Husain reports that she knew little about this condition before beginning work at UChicago, but she developed expertise in the field to better serve the needs of the patients referred to the medical center.

According to the American Cancer Society, the rates of malignant mesothelioma in the United States remain fairly stable, though the diagnosis is still increasing in other parts of the world, probably because asbestos is still widely used in India and in many African countries. The American Cancer website states that this type of cancer can take twenty to fifty years to develop, and the risk of developing this cancer does not decrease after exposure to asbestos stops. While the median survival rate currently remains less than two years, Husain says, the doctors at UChicago are now better able to treat their patients overall than they could previously, and outcomes are better; with each passing decade, cure rates have increased.

Research

The continued challenges of treating malignant mesothelioma spur a great deal of Husain’s research agenda, in which she is looking at molecular genetic changes to identify potential targets for newer therapies. Husain is the lead researcher for a paper which provides guidelines for making a diagnosis of malignant mesothelioma; she and the other researchers who contribute to the paper update the guidance every three or four years. Since there are only around three thousand cases of malignant mesothelioma each year in the United States, many physicians have not encountered the disease before. Prior to beginning work in her current position, Husain says, she was one of those physicians who had not seen a case, but she gained expertise through her work at UChicago. Cody says that UChicago doctors run many clinical trials related to the mesothelioma program.

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According to her website, Husain is “currently studying genetic mutations in lung cancer, and antibody-mediated rejection in heart and lung transplant.” Husain says that, overall, lung cancer rates in the United States are going down. Campaigns against smoking have been effective, and smoking is a major risk factor for lung cancers.

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knowledge in the field; as the Elsevier author website states, “She is author of more than nine book chapters and more than fifty publications. She is also author of *Thoracic Pathology*, a volume in the *High Yield Pathology* series.”

As busy as Husain is, Cody says, she is easygoing and flexible, with a commitment to “make it work,” whatever the challenge in front of her. Mirza says that Husain “brings excellence and doesn’t bring the ego.” These qualities help Husain to sustain her high standard of work, despite the full load she carries in teaching, research, and clinical practice.



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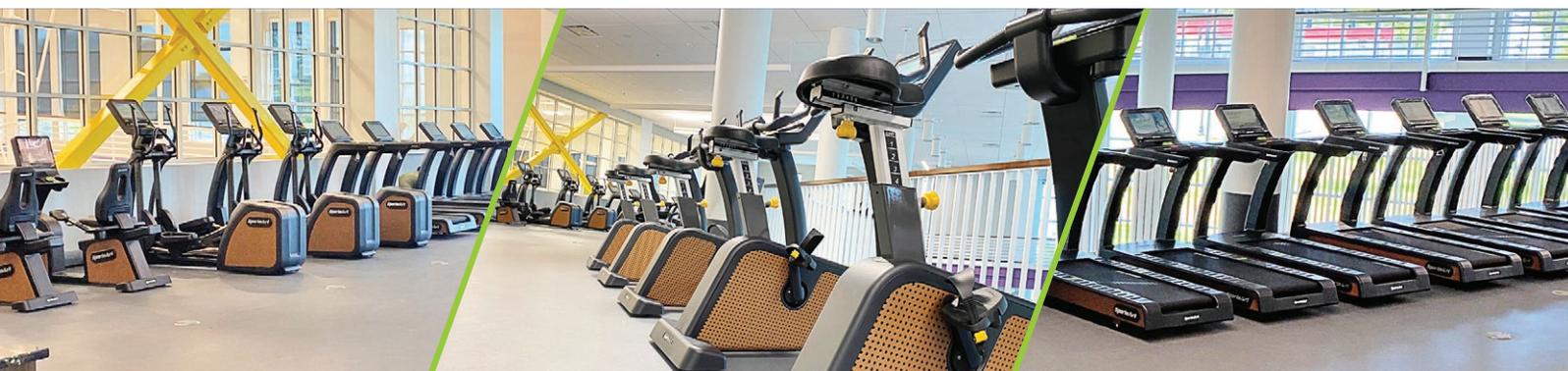


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