

THE SPIRIT OF DISCOVERY

Amy O'Brien-Ladner, MD, thought she would enjoy the challenge of an emergency medicine career. She still recalls the pivotal moment during a rotation in the emergency department when she had a change of heart. A patient came in with mysterious swelling of the knee, and she dutifully tapped the fluid and sent it to the lab for further study. The next day when she returned for her shift, she asked about the patient and learned that he had been admitted. "But no one knew what the fluid from the knee demonstrated," she says. "I had to go to the lab for the results," she said, learning the diagnosis was that of a septic joint associated with many neutrophils and Gram negative rods and found later to grow gonococcus. "I had only read of this malady and it was quite exciting to close on the real deal," she says.

She realized she craved the sense of discovery that comes with making a diagnosis, and a sense of closure with determining a treatment plan. Additionally, she derived much enjoyment from the camaraderie of the care team, working collaboratively to help the patient. It was at this point that she realized in order to practice that kind of medicine, she would need to change her path. Now the director of the Division of Pulmonary and Critical Care Medicine at the University of Kansas Medical Center (KUMC), Dr. O'Brien-Ladner says that the spirit of discovery is what draws physicians to her specialty. The passion for caring for people with the extremes of acute and chronic disease with a focus on the lung has propelled KUMC's Pulmonary and Critical Care Medicine practice to a

national ranking of 15th in the *U.S. News and World Report* this year.

Education has always been a high priority of the division and in the quest to find new and better ways to train the next generation of doctors, innovative techniques are being explored. One area under development is the use of medical simulation to train nurses and doctors to care for critically ill patients. Emily Diederich, MD, working with a team of ICU nurses, uses a computerized manikin situated in an actual patient room to train the entire ICU care team to resuscitate critically ill patients.

Diederich and her team are working to document the efficacy of this training, as it leads to improved patient care and ultimately better patient outcomes. Although a junior faculty member, Diederich is already a core faculty member for the American College of Chest Physicians Difficulty Airway Simulation Team. This team of 15 experts from across the nation hosts semi-annual three day simulation workshops at the national ACCP headquarters for practicing physicians who are interested in honing their skills in managing critically ill patients. Dr. Diederich, along with mentor Matthew Sharpe, MD, was awarded the Medical Alumni Teaching Fund for three consecutive years to support the project.

Lewis Satterwhite, MD, another junior faculty member, has made substantial gains in using sonography to rapidly assure the safety of patients with examination of a view of the patient's internal organs without invasion of radiation or contrast. Satterwhite, too, has shown such potential that he has already become part of the national

teaching core for sonography training in the American College of Chest Physicians.

Faculty member Navneet Dhillon, PhD, has contributed to the mentorship of undergraduate students by serving as the on-site advisor and leader of the Parker B. Francis (PBF) Summer Fellowship program at KUMC. Dhillon also continues to distinguish herself through research aimed at understanding mechanistically how HIV-1 and drugs of abuse contribute alone and in concert to the vascular dysfunction associated with HIV-related pulmonary hypertension (HIV-PAH) and other cardiovascular complications. Current research is divided into one American Heart Association and two NIH funded projects aimed at understanding the mechanism(s) involved.

Another example of the division's emphasis on discovery is its focus on cystic fibrosis. Over the last several years the KUMC Cystic Fibrosis Clinic has undergone a transformation and now boasts one of the larger adult CF programs in the Midwest, providing care to about 180 CF patients. Under the leadership of adult program director Joel Mermis, MD, and center director Steven Stites, MD, KUMC's association with the CF Foundation has flourished. As a CF Foundation-accredited center, KUMC participates in the national CF patient registry. In January, the KUMC CF center became a member of the CF Foundation Therapeutic Development Network (TDN), which provides KUMC the opportunity to participate in all major CF clinical trials. As a TDN member, KUMC is beginning

enrollment in its fourth CF clinical trial this year. Mermis has also received a two-year CF Foundation training grant called the PACE (Program for Adult Care Excellence) Award and is the recipient of an NIH CTSA grant for translational research to study cystic fibrosis associated lung disease. As the KUMC CF center director, Dr. Stites serves at a national level on the national CF center committee and conducts CF accreditation site visits for the CF Foundation. Through these efforts, the KUMC adult CF program has become a leading care and research center for cystic fibrosis.

The drive to discover is thriving in other areas as well. Mark Hamblin, MD, fresh from training at Johns Hopkins, established an Interstitial Lung Disease (ILD) and Sarcoidosis Specialty Clinic in 2011. He is actively engaged in clinical research trials for Idiopathic Pulmonary Fibrosis (IPF), including the ASCEND Trial evaluating the effectiveness and safety of pirfenidone, which may prove to be the first drug approved in the United States for the treatment of this rare and debilitating disease. He has also added several phase 2 clinical trials for IPF that will begin active recruitment in 2013. FG-3019 is an Anti-Connective Tissue Growth Factor Antibody delivered as an intravenous infusion, which has shown great promise in early clinical trials. Lebrikizumab is an IL-13 antibody inhibiting several known pro-fibrotic pathways making it an intriguing treatment option in IPF. There is early discussion of adding another trial in late 2013 with STX-100, which has also shown promise in early studies in IPF. The ILD Clinic is also partnering with our Division

of Rheumatology to explore the role of biologic agents in Collagen Vascular Disease-ILD and Sarcoidosis. Hamblin also obtained grant funding to begin an annual ILD Regional Conference that will serve as a starting point for research collaboration among other Midwestern ILD Centers to explore issues unique to more rural populations with interstitial lung disease, in addition to enhancing the clinical effectiveness of our community partners in evaluating and treating these challenging diseases.

And finally, Steven Simpson, MD, and Lucas Pitts, MD, exhibit their dedication to the citizens in Kansas as they continue to pioneer efforts in disseminating best practices throughout Kansas for early diagnosis and aggressive, organized treatment of sepsis. Simpson's dedication to sepsis discovery has been rewarded through two University-sponsored awards this year. He received the KU Department of Continuing Education's Distinguished Service Award and the KUMC's Community Outreach Award. In addition, Simpson was chosen to deliver the Roger C. Bone Memorial Lecture at the annual international scientific meeting of the American College of Chest Physicians. This was a particularly poignant honor, as Dr. Bone, a pioneer in sepsis research who developed the modern approach to recognizing sepsis, was an early career mentor for Simpson.

There is no question that the growth in stature of the Division of Pulmonary and Critical Care Medicine at KUMC is a direct result of following the mantra, "Do what you love, love what you do."



Amy O'Brien-Ladner, MD