Fall 2019 Partner Spotlight: Dr. Smita Bailey (Phoenix Children’s Hospital)

Please tell us about your position at Phoenix Children’s Hospital (PCH) and your partnership with our center.

My family and I moved to the Phoenix area when I took my position as a Pediatric Radiologist here at Phoenix Children’s Hospital. I was easily recruited from Wisconsin when they told me I did not have to shovel sunshine! I currently collaborate with Dr. Gabe Shaibi on two projects, one funded by the Arizona Biomedical Research Commission (ABRC), titled “Assessment of Liver and Metabolic Disease Risks in Overweight and Obese Youths by Advanced Ultrasound and MRI Techniques,” and another funded by the National Institute of Diabetes and Digestive and Kidney Diseases, titled “Preventing Diabetes in Latino Youth.” The projects somewhat intertwine and I think that really benefits our work and the depth of our research together.

Could you give us some information on your current research projects?

My research interest is in childhood obesity and liver disease, which is how Dr. Gabe Shaibi and I connected through other PCH researchers. Obesity has reached epidemic proportions. Currently, obesity affects nearly 14 million children and adolescents in the United States with greater prevalence in Hispanic children. Fatty liver disease is the most common cause of liver disease in children age 2-19 yrs. My research is in studying new non-invasive techniques for early detection of liver disease. Many people think of cardiovascular disease when they think of obesity, not liver disease. The leading cause of liver disease in children is fatty liver disease from obesity. Up until now we haven’t had many choices when it comes to diagnosis of fatty liver in obese children other than laboratory data and biochemical/biological markers used to determine whether one is moving towards cirrhosis. Early diagnosis is important because whenever you have fat in the liver, you have inflammation. Inflammation causes fibrosis (injury). Once the liver cells are injured, it creates scars in the liver and within that you can get cirrhosis or liver cancer. This is a terrible cycle and we want to identify this in kids early because when caught early enough, it can be reversed! The research portion of my career really began in 2012 when I was appointed the Section Head of Ultrasound and became involved in a specific technology called ultrasound elastography, which is basically “visual palpation” or a way of determining tissue stiffness. I received a grant of $100,000 from PCH Leadership Circle and used that funding to pay for the ultrasound equipment needed to begin the process of performing elastography on children. Identifying tissue stiffness helps determine whether the tissue is diseased or not. This research project focused on comparing “normal” elastography standards in non-obese children with those of obese youth. These obese youth usually have biopsies of their liver for a diagnosis purposes, which is an expensive, risky, and painful process. Elastography offers an easy, quick and wonderful alternative and I was extremely excited to offer this process to families in lieu of getting a biopsy! With these results, I published an article to show that we could use elastography to look at liver health in obese children.

At that same time, Dr. Shaibi was working with other PCH researchers on his NIH grant looking at type 2 diabetes prevention in obese Latino youth. Because I had interest in this same population, I was on-boarded to his project to review MRI images on his participants and, from there, we wrote a grant together through the Arizona Biomedical Research Center (ABRC) to find imaging biomarkers for liver disease or liver health in obese children using MRIs and ultrasounds. There are three arms to the ABRC grant. One is comparing the techniques of MRI and ultrasound, which includes a diverse group of kids (not all obese). Parts 2 and 3 include only obese Latino youth, most of whom participate(d) in Dr. Shaibi’s 6-month lifestyle intervention research project.

Community partnerships play a large role in our center’s research. How do you feel these types of research collaborations benefit each partner, including the community?

I feel honored to be a part of Dr. Shaibi’s group and collaborate with his team. It is very fulfilling to feel like you make a difference in the lives of these children and their families. So much of it is simply being educated. Education is a powerful tool we underestimate. You can have fancy equipment but it really comes down to educating these families to help make their lives better. As a collaborative group, we all bring different skill sets and knowledge to the table. That only raises all
of us, makes us all better, and help patients and their families. No one person can achieve what we can working together. I have learned so much working with Dr. Shaibi’s research team and it has been a wonderful journey together so far!

**What keeps you motivated in your research?**

Research is exciting to me because you don’t know what you’re going to find. It’s kind of like opening a present, it’s exciting and you hope it’s going to be good but not always what was expected. Those unexpected findings can lead to completely unknown outcomes. The great thing about research or science is that whatever you find, you always learn something. Whether it’s not what you expected nor what you wanted, you still learned something. Sometimes I find something new out which is even more interesting. In my field specifically, radiology is exciting because there are cutting-edge technologies being developed on a consistent basis…every year there is something new. That is motivational to me because those innovative and technological advances can be used to benefit children’s health!