

Letter of Intent, Emergency Ultrasound Fellowship Application

I invented an ultrasound phantom. A cost efficient, easy to assemble, static, ultrasound phantom. It all started my intern year, three months into the COVID-19 pandemic. During our ultrasound rotation, we were given a Butterfly ultrasound to take home, to scan ourselves and anyone else that felt comfortable being within 6 feet of us. Given my biomedical engineering background, I was curious to see how konnyaku jelly – a firm, gelatinous Japanese plant-based food found in Asian groceries stores that is used often used in “hot pot” – would look like when ultrasounded. To my amazement, it looked just like human soft tissue! I then took a bubble tea straw (alternatively a Starbucks straw) and easily cored a cylindrical hole through the jelly, submerged it in water and placed the probe on again – there appeared a beautiful hypoechoic vessel that rivals commercial vascular models. The jelly material costs \$2 each, a bubble tea straw is free (with a purchase of a bubble tea of course), and the only other material it requires is a container to hold water. I had created an inexpensive DIY model in under 10 seconds! It’s great for ultrasound IV training and I’ve been using it for teaching central lines to medical students and residents ever since!

My goal as an emergency ultrasound-trained EM physician is to teach, innovate and spread my excitement about ultrasound to future generations of medical students and residents. Teaching has been an important part of my journey through medicine. I started off teaching EMTs more than 10 years ago at a small volunteer fire station in ----, where I was challenged to come up with effective ways to teach those without any prior medical experience to respond to emergency medical calls. I got a chance to be creative with running simulations that were as realistic as possible, which is so important in EMS as it is such a hands-on field of medicine. I taught POCUS for the first time as a 4th year medical student when we organized the first school-wide ultrasound festival. I got an opportunity to teach the FAST exam to 1st and 2nd year medical students which was the first time I felt that this could be my niche in Emergency Medicine. I strongly believe that ultrasound should be incorporate into medical school curriculums and would love to be part of a team that is leading this change.

In addition to my interests in medical education, I have a strong desire to continue to expand the use of point-of-care ultrasound in EM in ways that would benefit our patients. In particular, I hope to become an expert at ultrasound-guided regional anesthesia, a powerful tool to making a more versatile EM physician when it comes to managing pain in the ED. I hope to not only gain this expertise but to learn how to implement a robust and sustainable nerve block program at an institution that may not yet routinely use this modality. I also hope to learn the advanced applications of ultrasound that can help guide our resuscitations of the critically ill in the ED. Finally, as an EM physician with roots within EMS, I also have an interest in expanding ultrasound into the prehospital setting and would pursue any opportunity to collaborate with any EMS faculty/fellows on a project.

The use of point-of-care ultrasound within the Emergency Department is truly endless and I am excited to join a group that is always pushing the boundaries to benefit our patients.

Thank you for your consideration and I look forward to meeting you soon.