

Good luck where preparation meets opportunity



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“Luck is what happens when preparation meets opportunity.”

– Seneca

Much of the emergence of the electrophysiology (EP) program at the Medical University of South Carolina (MUSC) began with work done by others—Drs Michael Gold and Marcus Wharton formed the academic core 2 decades ago. Dr Gold developed the cardiology division as chief, and he led the EP academic mission with his stewardship of pacing and implantable cardioverter-defibrillator trials. My former MUSC partner, Dr Frank Cuoco, developed a robust atrial fibrillation program and understood the need for an academic ventricular tachycardia (VT) practice. With this talented group, the die had been cast for a program supportive of robust investigator-initiated studies and clinical trials. After speaking at a conference in 2015, I was fortunate to receive an invitation to look at MUSC to build the VT program and later joined, in August 2016.

The preparation had been a decade in the making, with a winding course through fellowship at Brigham and Women’s Hospital with an early focus on ion channel genetics and arrhythmogenesis; but, with mentorship from Drs Usha Tedrow and Bill Stevenson, the path steered toward clinical EP. The Brigham had been—and remains—a think tank for VT management, so the obvious next career step with support from mentors led to the great VT center at Loyola in Chicago under the leadership of Dr Dave Wilber. By then, focus on VT management—both mechanistic and technical with interest in ablation biophysics—led to collaborative growth with the great Loyola EP group. The “3 amigos”—Dr Smit Vasaiwala, Dr Alex Green, and me—grew together, with challenging VT cases complemented by sage input from Dr Wilber. He advised methods for improving mapping efficiency, addressing failures, and avoiding complications. The learning post-fellowship never stopped, and collaboration among junior EPs created one of the most transformational experiences of my career. I am grateful for those 5 years with the Loyola group.

Mistakes are great teachers. Somewhat serendipitously, after abandoning VT ablation in an ischemic cardiomyopathy patient owing to hemodynamic instability after repeated inductions, Dr Wilber offered this advice: “You can learn a lot in sinus rhythm.” The patient, thankfully, did okay, but this initially confusing statement opened another path: how can we democratize VT ablation? Substrate-guided approaches with high-density mapping emerged during the 2010s, yet generalizability remained challenging given variable signal interpretation by operators and diversity of electrode arrangements on the newest high-density catheters.

So the opportunity at MUSC could not have been more fertile for development of a VT program. In an environment somewhat suspicious of the risks of VT ablation, we constructed a program with safety and service at the forefront. Patients survived cases and returned to their doctors. We counseled patients and referring physicians that repeat ablations would sometimes be necessary. We grew from 29 VT ablations to more than 100 in 1 year, and we have experienced double-digit growth annually since 2019. In parallel, MUSC developed the advanced heart failure program with the recruitment of talented physicians and subsequent explosion in transplant / ventricular assist device volumes. Partnership with the heart failure group enabled the program to take on sicker patients with plans for bail-out strategies developed in a collaboration between EP and heart failure physicians.

With an emerging VT program, I soon took over the EP section just over a year after arrival at MUSC. The work continued, but the needs of the VT program no longer took sole priority. We lacked a comprehensive lead extraction program, and our atrial fibrillation program required additional help to manage the growth in ablations and left atrial appendage closure. We recruited the superbly talented Dr Anne Kroman, who rapidly built a collaborative program with surgical colleagues to support complex extractions. In parallel, we hired additional faculty, including Dr Josh Payne, among others, to extend the complex ablation programs. Junior and midcareer faculty alike share responsibility for core EP work, but each enjoys opportunities to differentiate in niche practices and to lead research initiatives.

The luck at MUSC EP emerged from hard work and preparation, coupled with focus on team play at every opportunity. Mentorship never ended, and I continue to engage colleagues for advice at critical program moments, such as

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recruitment or scientific investment. We will see the mission through, and we welcome colleagues and trainees to visit our open lab environment.

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