The Thoracic Surgery Resident Association (TSRA) organized a webinar series entitled “Bridging the Gap: Tips for Early-Career Success in Cardiothoracic Surgery,” focused on strategies for early-career success in cardiothoracic surgery. Each of these 6 sessions was moderated by a TSRA Executive Committee member and featured early-career surgeons who have recently transitioned into practice and demonstrated success in integrating new techniques or clinical focus. Topics included robotic cardiac surgery, congenital surgery, atrial fibrillation surgery, thoracic surgery, transplant and heart failure, as well as structural heart.

The TSRA Executive Committee, in a multistep process, selected the early-career surgeons for the webinar series. We first identified the 6 topics most important to trainees preparing to transition into practice. Next, we solicited nominations for junior faculty that, in the view of TSRA members, embodies successful transition to practice based on clinical volume, outcomes, and reputation. The TSRA Executive Committee then voted on individuals for each session, and they were invited to participate with a 100% invite acceptance rate.

**ROBOTIC CARDIAC SURGERY**

The first episode in this series focused on robotic cardiac surgery and featured a discussion with Dr Gianluca Torregrossa, a clinical associate of surgery at the University of Chicago, and Dr Brittany Zwischenberger, an assistant professor of surgery at Duke University. During an excellent discussion moderated by Dr David Blitzer from Columbia University, there were several important points that were emphasized. First, and most importantly, Drs Torregrossa and Zwischenberger emphasized the need to develop extensive experience and confidence with traditional cardiac surgery before attempting to develop robotic experience or a robotic program. Dr Torregrossa specifically recommended working for several years with traditional surgery before pursuing robotic training. Dr Torregrossa described a series
of 4 habits that are critical for robotic surgery. First, he recommended gaining experience with the robot in any surgical venue, be it cardiac or gynecologic surgery. Second, he recommended extensive experience with the robot simulator. Third, we were advised to record and review one’s robotic cases to search for areas of improvement by oneself or with a mentor. Similarly, his fourth suggestion was to review videos of more-experienced robotic surgeons to discover areas for technical improvement.

Once ready to begin a robotic program, Dr Torregrossa described a need for 2 key inputs. The first is mentorship; either within or outside of your institution, from someone who can help train you in robotic surgery and proctor your first cases. When searching for mentorship, Dr Torregrossa recommended searching for someone with diverse robotic experience and a known reputation as an educator. The second key input is support from your institution and department, as developing a successful robotic surgery program is dependent on consistent experience and buy-in from a team that includes nurses, anesthesiologists, partner surgeons, and hospital administrators. Looking to the future, Dr Torregrossa predicted an expanding role for robotic cardiac surgery, as patient preferences are steered toward minimally invasive techniques, but also identified a need for continued innovation with robotic technology and its clinical application. From a trainee perspective, the take-home message from this episode highlights the importance of a dedicated 3- to 5-year plan after cardiothoracic fellowship to begin building a robotic cardiac surgery practice.

**EARLY-CAREER DEVELOPMENT IN CONGENITAL CARDIAC SURGERY**

The second episode in the series focused on early-career development and maximizing training opportunities for congenital cardiac surgeons. Dr Elizabeth Stephens, of the Mayo Clinic, and Dr Damien LaPar, of the University of Texas Houston, joined as panelists for a productive discussion moderated by Dr Garrett Coyan, of the University of Pittsburgh. The discussion centered on aspects to consider at all stages of early-career development while pursuing congenital cardiac surgery. Early dedicated mentorship was a consistent theme, as the unique training and apprenticeship-style of an early congenital career requires strong mentorship. Multiple mentors for different aspects (technical skill development, academics/research, and society involvement among others) can be critical, and searching outside the bounds of one’s own department and institution can be a useful strategy. Trainees at any stage interested in increasing exposure to congenital cardiac surgery should aggressively pursue mentorship as soon as possible to optimize opportunities for growth within the specialty.

Residents should focus on clinical excellence during cardiothoracic surgery residency and especially technical training, as congenital fellowship itself likely will be a time of reduced technical operating volume due to the nature of the specialty and the learning curve. Research and academic work are extremely important during residency to enhance knowledge of the congenital field and become competitive for congenital fellowship training. Following congenital fellowship, early focus on clinical and technical development was stressed as the most important factor for gaining traction out of fellowship, with layering on of research and administrative responsibilities as time progresses. Most early-career congenital surgeons will not feel comfortable with clinical practice for several years, and this is normal due to the variety of cases and stressors from the job. As the process of development takes significant time, the virtue of patience was emphasized by both panelists as a key aspect to a successful career transition.

Although the process may be long and daunting, for those who persevere, the clinical practice of congenital cardiac surgery can be extremely rewarding. From a trainee perspective, the take-home message from this episode was that early preparation and planning during training is critical to secure a congenital fellowship position and first job with appropriate mentorship for early-career success in congenital heart surgery.

**SURGICAL TREATMENT OF ATRIAL FIBRILLATION**

The third episode was centered on the surgical treatment of atrial fibrillation. The session, moderated by Dr Yihan Lin, from the University of Colorado, featured 2 well-known surgeons in the field: Dr Armin Kiankhooy and Dr Lawrence Lee. Dr Armin Kiankhooy was previously a faculty member at the University of Southern California and is currently in private practice at Adventist Health in Napa Valley, California. Dr Lawrence Lee is currently a cardiac faculty member at the Indiana University and is also the program director of the thoracic residency. These 2 surgeons from very different practice backgrounds were able to provide key insights on how to integrate atrial fibrillation surgery early within a surgeon’s practice.

This topic was particularly interesting to residents, as specific training for the surgical treatment of atrial fibrillation is not universal in thoracic surgery training programs. In fact, many residents and faculty have to find opportunities outside of their home institution to gain the necessary technical skills. The panelists discussed several compelling reasons to seek this additional training, as well as provided resources for current residents to pursue. They also discussed a stepwise progression of how to start out first as a safe surgeon and then grow into an expert in the field. Dr Lee and Dr Kiankhooy also discussed the practice differences in private practice compared with academics and how to maximize success in atrial fibrillation surgery in each setting. The panelists emphasized that in addition to
technical skills, communication with colleagues, especially cardiology and electrophysiology colleagues, is critical. As many of these patients are referred from cardiology, it is important to foster a collaborative culture among the different departments. The session ended with a great suggestion by Dr. Kiankhooy: To maximize success, practice the 3 A’s: “Available, Affable, Ability.” Be available and visible so your colleagues know you are invested. Be affable so these same colleagues find you approachable. And make sure you have the ability to ensure good outcomes for your patients—and if there is a bad outcome, always communicate this with your referring physician. The take-home message from this episode was the importance of identifying clinical mentorship when adopting additional techniques and building collaborative relationships with referring physicians.

THORACIC SURGERY EARLY-CAREER TIPS

This episode featured early-career tips for thoracic surgeons with guest panelists Dr. Brian Mitzman, Assistant Professor at Univ of Utah and Director of Robotic Thoracic Surgery, and Dr. Joshua Boys, Assistant Professor at University of California San Diego. The session was moderated by Dr. Fatima Wilder, MD, from Johns Hopkins University. The primary focus of the discussion was tips for finding your first job. The panelists stressed the importance of using your mentors and taking opportunities to meet people in various settings, including meetings, even if it is in your first year of training. They agreed that cold calls/emails are okay and are almost expected. Dr. Boys pointed out that fellows, junior attendings, previous faculty, advanced practitioners, and anesthesiology can all offer useful perspective on the places where you are interviewing. In addition, industry reps will offer a third-party perspective. Dr. Mitzman pointed out some red flags to watch out for, including a high turnover, a single senior partner who has always been by themselves, not interviewing with a variety of people, lack of a solid plan for you, and an unclear reimbursement structure. Everyone agreed that self-education is important in contract negotiation and finance management and recommended finding a financial advisor who knows the physician’s life/trajectory as well as planning for disability insurance. Participants were also encouraged to talk to faculty about what they did and what resources they used as well as checking the MGMA (Medical Group Management Association) data to understand regional standards for compensation! Everyone agreed that reasonable things to negotiate for include moving expenses, signing bonuses, and tuition reimbursement. Importantly, if you are promised research, be sure to get things delineated in your contract, such as protected time, where funding will come from, etc. Dr. Boys reminded participants to do every case you can while you’re still a trainee and get the basic skills so you can put them together when you need to. Dr. Mitzman stressed that robotics is important, but don’t neglect your open and video-assisted thoracoscopic surgery skills or foregut. Once starting your first job, communication is key (with colleagues, your significant other, partners, etc).

If you’re not happy, be honest with yourself and find a solution. If you need to leave before 5 years, it’s OK! Hold on to and keep in touch with your mentors! The take-home message from this episode was a roadmap for applying and securing your first job out of fellowship.

EARLY-CAREER TIPS IN TRANSPLANT AND HEART FAILURE

Dr. Marisa Cevasco, from the Hospital of the University of Pennsylvania, and Dr. Amy Fiedler, from the University of Wisconsin, joined the session as 2 recently graduated attending surgeons who are leading active practices in the field of mechanical circulatory support (MCS) and heart transplantation (HT). Both surgeons emphasized being drawn early on to the subspecialty due to its tremendous impact on patients’ lives, as well as the multidisciplinary and innovative nature of the practice. Moreover, the spectrum of dynamic physiology across the population with heart failure is remarkable and requires more than just technical mastery. Practically speaking regarding one’s first job coming out of training, both surgeons stated that the scope of one’s practice will vary with the needs of the practice and may align well with performing high-risk coronary artery bypass grafting or mitral valve operations. It is important to be busy and to be given the opportunity to perform about 150 “bread-and-butter” pump cases in addition to MCS or HT cases during the first year in a job, so one can develop the necessary operative skills and autonomy. Whatever the case, Dr. Fiedler advised trainees to be introspective, thoughtful, and honest about the desired career trajectory.

Completing a super-fellowship was viewed as a beneficial, but not a required, experience if one is very intentional about gaining experiences in this subspecialty early on and can find adequate mentorship during the transition to being an attending. Also, both surgeons shared that it is possible to practice in both academic institutions and private practices that are large and can support the full clinical spectrum; therefore, pursuing MCS or HT does not commit you to a specific archetype. Additional nuanced considerations included how the MCS and HT teams are structured and workflow is arranged. At some institutions, cardiologists take donor calls, whereas at others, cardiac surgeons do. Having a strong and inclusive relationship with heart failure cardiologists is incredibly important, and one has to be cognizant of how the culture may be variable across institutions. Some institutions have established multidisciplinary rounding structures, which can be clinically beneficial, given that patients with heart failure are seldom on a simple “pathway” and require
constant oversight and communication to get them through. Regarding work–life balance, being a MCS or HT surgeon certainly presents challenges in this domain, such as dealing with a more complex and less-elective population, often requiring you to operate all night or during the weekend on a relatively short notice. However, if one is passionate about the field, these circumstances are also what makes the field exceptionally rewarding. The most important thing is to understand who you are and what makes you tick; and if it happens to be MCS and HT, one can look forward to a meaningful career. The take-home message from this episode was the importance of case volume, clinical mentorship, and a collaborative heart failure program in early-career success as a HT/MCS surgeon.

DEVELOPING A CAREER IN STRUCTURAL HEART

The final installment of the early-career webinar series is one focused on structural heart disease featuring a discussion with Dr Anson Cheung, from the University of British Columbia, Dr Ibrahim Sultan, from the University of Pittsburgh, Dr Tsuyoshi Kaneko, from Harvard University Brigham and Women’s Hospital, and Dr Isaac George, from Columbia University. Key themes of discussion revolved around the role of the surgeon in structural heart disease, education, competency, and potential accreditation for the niche, and the importance of how to cultivate and sustain a healthy heart team.

Panelists collectively cited that technology, mentorship, and the ability to offer all aspects of treatment for patients with valvular disease, whether that is open or minimally invasive surgical procedures as well as transcatheter-based techniques, and providing a balanced view of valvular intervention were the driving reasons for pursuing a niche in structural heart disease. In terms of the role of the surgeon in structural heart disease, panelists felt that it comes down to the individual and one’s goals in practice. There are minimal case volume requirements as per the American Board of Thoracic Surgery, but currently there lacks specific accreditation in structural heart disease for surgeons and cardiologists (which may come down the pipeline soon). As such, this inevitably lends itself to surgeons having varied levels of competence and exposure in structural heart disease—with expert versus nonexpert surgeons. They discuss that as a specialty, we need to address the following question: is the goal to ensure that all surgeons are able to perform transcatheter aortic valve replacements (TAVRs), or are we trying to train select individuals to serve as transcatheter specialists? If yes to the former, then TAVR should be integrated into the training paradigm, and if yes to the latter, then transcatheter training should be a dedicated fellowship. Panelists felt that there should be a baseline level of competence for surgeons in structural heart disease—to be amenable to be a functional member of the Heart Team, to have an understanding of the language, the core concepts, basic wire skills, and be able to make rational decisions, but not necessarily the need to do every part of the procedure every time. Graduating cardiothoracic surgery trainees should be able to perform all aspects of transfemoral TAVR as a basic competence, with further advanced skills such as alternative access, transcatheter valve-in-valve, mitral, or tricuspid procedures more of a fellowship-based skill or for those with dedicated focus toward structural heart disease. The importance of strong collaboration with the Heart Team (cardiac surgeon, cardiologist, interventional cardiologist, heart failure cardiologist, echocardiologist, nurses) cannot be understated, with various structures of the Heart Team described. Ultimately, all panelists stressed the need for surgeons to see the patients, be present at rounds and at the table advocating for what one believes in. The Heart Team is a relationship among all specialties involved; it needs to be mutual, treasured, with time invested toward cultivating the Team for the benefit of patients. From a trainee perspective, the take-home message from this episode was the importance of keeping up with the rapidly evolving technology, taking an active role in procedures, and investing time/effort in the heart Team collaboration.

CONCLUSIONS

The Early-Career Webinar series is another TSRA initiative to meet our mission to provide peer-based resources and support for cardiothoracic surgery residents to succeed throughout training and launch successful careers. We have highlighted several recurring themes that presenters felt were critical to early-career success (Table 1). The sessions were well attended, with approximately 100 live trainee viewers and more than 500 YouTube views of the recorded sessions. Similarly, the information provided during

TABLE 1. Thoracic Surgery Residents Association Early-Career Development Series pearls

| Mentorship from experienced individuals in the field |
| Thoughtful patience when dealing with obstacles to your ideal practice in the first few years |
| Communication with partners, colleagues, and collaborators to ensure successful relationships |
| Technical ability is important, and every case in training is a learning opportunity |
| Know yourself and be honest about your career aspirations |
| You must be a present and active member of the team to have your voice heard |

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the webinars was disseminated through social media, including 43,976 Tweet impressions (unique views), 1625 Facebook views, and 1180 LinkedIn views. The TSRA is excited to offer this new opportunity to cardiothoracic surgery trainees around the world and will keep the webinars available through the TSRA YouTube channel (https://www.youtube.com/channel/UCyjU49Z1w88buh9g5sL-ImA).