Leading by example: Experiences and lessons learned from ASNC's Future Leaders of Nuclear Cardiology Symposium

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INTRODUCTION

On Friday, November 6, 2020, the American Society of Nuclear Cardiology (ASNC) hosted the "Future Leaders of Nuclear Cardiology Symposium." At first glance, with dozens of individuals logging in to a virtual meeting room while socially distanced at home, this might have seemed like a typical scene for late 2020. However, a closer look at the makeup of meeting attendees told a different story: a combination of founders of the field of nuclear cardiology, past and present ASNC presidents, successful early career leaders and imagers, and, most importantly, fellows in training (FIT) interested in pursuing a career in nuclear

cardiology and cardiovascular imaging had all gathered to share ideas, build relationships, and to learn from one another. With a focus on fostering discussion and interactions with FIT members, this was a refreshing change to the traditional lecture based academic virtual sessions and meetings, and should be considered a "can't miss" event for anyone interested in a career in cardiovascular multimodality imaging in years to come.

The Future Leaders of Nuclear Cardiology Symposium is an annual event hosted by ASNC with a focus of providing FIT's the necessary tools for developing a successful career in both cardiovascular imaging and nuclear cardiology. Organized by course directors Marcelo Di Carli MD FASNC, Prem Soman MD PhD MASNC, and Randall Thompson MD FASNC, the symposium was divided into multiple speaker sessions with different themes relating to nuclear and multimodality imaging. However, instead of focusing on the techniques, applications, and science behind each imaging modality, an emphasis was placed on each speaker's own journey within the field as well as important life lessons to be passed on to the future generation of cardiovascular imagers and leaders. With specific goals of exposing fellows to established leaders in nuclear cardiology, introducing role models while fostering mentoring relationships, and raising awareness of the challenges in the implementation of best practices in cardiovascular imaging, the fellows attending the symposium had ample opportunities to ask questions and interact with each speaker. As much of nuclear cardiology and imaging relies on equipment, technological advancements, radiotracers, and commercial reading software, industry sponsors were also present again to help foster relationships and collaboration.

KEYNOTE ADDRESS

The symposium began with the keynote address given by Barry Zaret MD MASNC from Yale University. Considered one of the founders of the field of

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The authors of this article have provided a PowerPoint file, available for download at SpringerLink, which summarises the contents of the paper and is free for re-use at meetings and presentations. Search for the article DOI on SpringerLink.com.

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Figure. Outline for achieving success and becoming a multimodality leader in the field based on progression of research and mentorship, as presented during the 2020 ASNC Future Leaders of Nuclear Cardiology Symposium.

Nuclear Cardiology, Dr. Zaret shared his personal journey through medicine and the arts, highlighting how each of his experiences helped shape his career. Dr. Zaret graduated medical school and was a resident at New York University in the 1960s—a time when the field of Nuclear Cardiology had not yet been established. By following his interests in medicine and continuing to foster friendships with his colleagues and peers, Dr. Zaret found himself conducting physiologic experiments in myocardial flow and gamma ray cameras using dog subjects. By 1969, Dr. Zaret continued to push these concepts further and started measuring ejection fractions using radioactive albumin. While day-to-day clinical applications of this technology were not yet widely established in the 1960s and early 1970s, Dr. Zaret used unplanned opportunities made available to him by the ongoing Vietnam War and military draft in the United States to complete some of the first versions of nuclear based treadmill stress tests on military recruits, thus beginning the field of clinical nuclear cardiology. As his efforts to advance this field continued, Dr. Zaret went on to help establish dedicated nuclear cardiology sessions at the American Heart Association annual meetings, serve as the founding editor-in-chief of the *Journal of Nuclear Cardiology*, and become a co-founder of the American Society of Nuclear Cardiology.

After reminiscing on numerous academic achievements, Dr. Zaret concluded this opening address by emphasizing the importance that the arts have had on his

career, specifically, painting and poetry. Dr. Zaret described how his creativity in these humanities helped channel his thoughts and feelings, eventually leading to several collections of his work published. After sharing multiple paintings and excerpts from poetry, the audience was left with the message that we should all find ways to achieve personal balance as well as a healthy escape from the profession from time to time.

THEMES FROM EARLY CAREER CARDIOLOGY SUCCESS STORIES

The next session included early career cardiologists Viviany Taqueti MD MPH FASNC, Jamieson Borque MD MS FASNC, Ahmed Masri MD MS FASNC, Venkatesh Murthy MD PhD FASNC, Renee Bullock-Palmer MD FASNC, and Mouaz Al-Mallah MD MSc FASNC sharing their personal pathways into nuclear cardiology and advice for future leaders in cardiovascular imaging. While each had an inspiring and unique pathway into the field, there were three common themes among all of the presenters: the importance of developing meaningful skills in imaging, persevering to find successful research strategies, and seeking active mentorship.

With rapidly advancing technology across all modalities of imaging, and with a lack of well-defined curricula or training requirements to be called a “multimodality imager,” the first common theme shared by

many of the early career presenters was to focus on developing meaningful skills in imaging. A trainee's focus should be centered on areas that are truly of interest to the individual. Fads in multimodality imaging will come and go, but understanding the pathophysiology of a disease process and understanding the basic principles of each imaging technique will create tangible and valuable skills. These skills will allow for research, practice, and career flexibility, thus ultimately creating stronger leadership skills in the field of imaging. An example of this concept can be seen with how the understanding of principles of nuclear imaging coupled with the understanding of pathophysiology of disease states has led to the recent expanding application of nuclear imaging for the diagnosis of ATTR amyloidosis. As pointed out by Dr. Bullock-Palmer, a career in multimodality imaging is "more about the journey than the destination," and the tools acquired during training will prove valuable for whichever direction a career trajectory may take a trainee. Building on this idea, Dr. Borque emphasized the importance of seeking out training opportunities that you need, which may require temporarily leaving your institutions to strengthen a skill set.

A second common theme shared by each of the early career presenters was that perseverance was required to have a successful research career in cardiovascular imaging. Future leaders were encouraged to keep showing up to events and to keep applying for opportunities at all times. Failures should not be viewed as absolute, but rather as necessary learning opportunities. Rarely do grant applications get accepted on the first attempt, but learning to be resilient will prove to be a valuable trait, ultimately leading to stronger future applications, improved research questions, and clearer action plans. It was recommended that young researchers identify only two or three important research questions to work on at a time in order to avoid an overwhelming workload. Finding ways to help collaborate in national and international trials is also a great opportunity to build a research portfolio when starting an early research career. Additionally, as pointed out by Dr. Al-Mallah, acting as a local leader within an institution by educating nursing staff, technicians, and other physicians on research techniques or studies can often foster a more productive research environment. Ultimately, Dr. Masri summarized a career in imaging and research best when he stressed that while things usually do not go according to plans, success is always found with hard work.

The final common theme identified by the early career cardiologists was the importance of active mentorship. Attendees were frequently reminded throughout the symposium that mentorship is more than just

passively identifying an individual with experience in a field of interest—it is an active process that takes effort put forth by both the mentor and mentee. Dr. Taqueti's advice to young imagers searching for mentors was to surround themselves with people who truly want to be there for them and are invested in their success, and that this may require looking outside one's immediate circle of contacts. By volunteering to work with various communities and medical societies and by attending local, regional, and national societal meetings, young leaders are able to build broader networks and naturally meet individuals who are in positions to be valuable mentors. Mentors can exist in fields outside of cardiology as well, and as pointed out by Dr. Murthy, relationships made with engineers, chemists, and industrialists can frequently be valuable in a multimodality imaging career. Finally, it was stressed that just because the circumstances of the world have drastically changed due to the COVID-19 pandemic, the drive and passion to provide meaningful mentorship to young leaders and fellows has not gone away. In fact, an overwhelming majority of the presenters encouraged fellows to reach out to potential mentors to set up phone calls, arrange virtual meetings, or just to exchange thoughts via e-mail.

FINAL SESSIONS

The symposium day concluded with small group breakout sessions and a virtual "happy hour" with all of the symposium attendees present. Breakout session topics included advice on developing an academic career, becoming a key opinion leader, and breaking down barriers in the field. These sessions fostered natural small group discussions and continued to build on the themes of practicing active mentorship, seeking out opportunities for networking, and achieving a healthy work-life balance. The attendees and presenters all gathered in the virtual lobby at the end of the symposium for a large group debriefing and social event. After a few last-minute questions were answered and words of advice given, the symposium concluded with a final toast to ASNC and the future leaders in cardiovascular imaging.

CONCLUDING THOUGHTS

This was now my second year attending the ASNC Future Leaders of Nuclear Cardiology Symposium, and I am unable to recall another academic meeting where younger trainees have as much access to true giants in the field—to share stories, goals, career aspirations, research, and above all, ideas with one another. As a third-year general cardiology fellow interested in a career in cardiovascular imaging, this event has been

instrumental in helping build a foundation for both my personal training and career pathway. I left this meeting reassured that my feelings of uneasiness about the uncertainties of a career in cardiovascular imaging and training structure were normal, and was inspired to continue seeking out opportunities to get involved with academic activities on both a local and national level. I have now established acquaintances with present and past ASNC presidents and feel better equipped in approaching individuals as potential mentors. I have learned that circumstances are always fluid, and that despite the COVID-19 pandemic and the need for social distancing, the desire by leaders to provide meaningful mentorship has not dissipated—all it takes is a phone call or e-mail to help establish and build mentor relationships.

In the end, there is no universal blueprint to define or achieve personal or professional success—every path is unique. That being said, by incorporating the advice and themes outlined by all of the presenters at this symposium (Figure) into routine practice, success will surely follow.

The Future Leaders of Nuclear Cardiology Symposium is hosted by ASNC during the first week in November. For any fellow interested in a career in cardiovascular imaging and becoming a leader in the field, this event should be considered a “must,” and I would encourage all to apply for next year’s session.

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