

2017 American Physician Scientists Association Presidential Address

Lessons in leadership and the impact of trainee leaders

Alexander J. Adami

Introduction

I am certain I do not need to explain to this audience the importance of the physician-scientist to the advancement of the science of human health and disease. I am equally certain that I do not need to explain that the pathway to becoming a physician-scientist is far from easy or straightforward. Indeed, I imagine many of you have felt, as I have, that this at-times tortuous journey is like a marathon swim, where pausing for breath or even slowing down seemingly invites drowning. However, I am not here to deliver a somber message on the challenges we face, nor am I here to wax philosophic on the virtues (of which there are many) of a career combining medicine and scientific discovery. Instead, I hope to leave with you some concrete lessons I have learned during my time with the American Physician Scientists Association (APSA) and to share my thoughts on the importance of leadership and involvement as a physician-scientist trainee.

Lessons not taught in medical school

When I first became a member of APSA, I thought of this association as I suspect many trainees think of their field's society: an interesting group to which I had an obligation to belong, but one unlikely to yield more than a line on a CV. What I did not anticipate were the lessons that being a part of APSA taught me, and I assure you that advancing to the presidency is not required to learn these lessons for yourself.

The first skill APSA taught me was simple: how to lead. It may surprise some of you to learn that I had never held a single leadership position prior to medical school. I was never one for clubs, for sports teams, or for honor societies. I came to APSA with a very blank slate. Initially, beginning as a member and, soon there-

after, Vice-Chair of the Public-Relations Committee, I learned to manage projects with input from my fellow leaders across the country, how to coordinate efforts between multiple committees, and how to organize and run a team. I believe I am safe in stating that these are not skills many medical or graduate schools teach, yet all of us will use these skills throughout our careers. If you become the principal investigator of your own laboratory, you will be managing a team. If you someday run all or part of a multicenter clinical study, you will be coordinating between actors on a stage which may span the continent or even the globe. Learning and practicing some of these skills as a trainee, when mistakes are far more forgiving, will position you well for the future.

I suspect many of you are already grumbling at the suggestion of adding more to your plate, with the constant drone of your medical school and research mentors lecturing you about staying focused on your work. Here too, however, the acts of leadership and service impart invaluable skills for our future careers, and this is the second lesson APSA taught me: time and priority management. All of us, no matter the career path we choose, will have to juggle many responsibilities and wear many hats, sometimes simultaneously. Whether navigating research and clinical duties, moving between research and teaching, enjoying a fulfilling family life and launching a career, or a combination of everything and more, it is important to learn how to balance demands. Don't believe me? Just think back to any one of the "work-life balance" panels you have been to in your trainee careers (and if you have not yet seen one — trust me — you will). These panels are ubiquitous at scientific meetings, because balancing competing demands is one of the hardest things you will have to do.

Serving as an officer in APSA honed my ability to strike a balance between priorities. I can assure you, nothing could have forced me to solidify my ability to manage multiple competing priorities faster than running a national association while trying to survive inpatient surgery, OB/GYN, and medicine clerkships as a third-year medical student. But, you need not be *that* crazy (and I would recommend wholeheartedly that you do not attempt to do so) to learn these valuable lessons. Join an APSA committee and take on a small project. If you find yourself ready for more, apply to become a committee chair or member-at-large. Challenge yourself, and you will grow stronger with each summit surmounted.

If you are not one for national service, APSA is not the only place to acquire these skills. Closer to home, give back to your institution by serving as a student leader. Every medical school has a veritable forest of committees and working groups that are striving to improve the education and research environment of the institution. If your institution is redesigning its curriculum (as seems to be in vogue these days), lend your voice to the redesign. If you are interested in student government, stand for an elected position. Even small experiences while you are a trainee help you learn to manage your time effectively and to succeed in many arenas at once, and you will be helping your school and fellow trainees at the same time.

This is not to say you should throw yourself into leadership or society service with reckless abandon. Your job as a trainee is first and foremost to be a good trainee. Do well in medical school classes and clerkships, build a solid foundation of research training, and publish your good work for the benefit of human health and the advancement of human knowledge. However, take this opportunity to stretch your boundaries while it is "safer" to do so. As a junior faculty member — or even a clinical or postdoctoral fellow — scrambling to do research while seeing patients or teaching, no one is going to give you the

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Table 1. Presidents of the APSA, 2004–2017

President	Term
Freddy Nguyen	2004–2008
James Pauff	2008–2009
David Braun	2009–2010
Christopher Alvarez-Breckenridge	2010–2011
Ivayla Geneva	2011–2012
Dania Daye	2012–2013
Evan Noch	2013–2014
Michael Guo	2014–2015
Daniel DelloStitto	2015–2016
Alexander Adami	2016–2017

option to put one demand aside to focus on the other, nor will they be forgiving if you master one but fail to achieve in another. APSA taught me how to juggle competing demands efficiently and, more importantly, how to effectively set priorities, so what needed to get done did. I believe my experiences will serve me well in the next stages of my career, and I am confident they would do the same for you.

The third thing APSA taught me is more intangible but immensely satisfying: how to mentor. I am certain that all of us have encountered absolutely fantastic mentors who have been critical to the success of their trainees. Many of the presentations from distinguished physician-scientists at the Association of American Physicians (AAP)/American Society for Clinical Investigation (ASCI)/APSA Joint Meeting include homage to the mentors who helped those now-successful investigators get to where they are. I am certain, too, that all of us have encountered mentors who were decidedly less than stellar. As trainees, many of us will have some exposure to mentoring even before we graduate, such as overseeing undergraduates in the laboratory, but I found national service to APSA, as well as my own institutional service as a member of UConn's Medical Dental Student Government, to be particularly important training grounds for my own mentorship skills. This was not a skill that came naturally — I found my way as a mentor through being a leader. While being a good mentor is not synonymous with being a good leader, and vice versa, I think my leadership team would agree that the greatest achievements of my presidential term came, not by way of my

personal skills and energy, but by harnessing the skills and energy of the team working with me. As I watch many of those individuals move on to senior positions within APSA or the next stage of their training, such as residency, I am humbled to think that my efforts might have had a positive impact on their training.

Indeed, the most personally gratifying moments of my presidency were those in which I saw how my encouragement, mentorship, and advice helped members of my leadership team grow and strengthen themselves. Remarkable as it may turn out to be, the greatest legacy you will leave as a physician-scientist is likely not to be your own science. Rather, it is likely to be the science of those you train and mentor and, by extension, the science of all those they too come to mentor. This is not a skill you can gain from a book, a symposium, or a two-day workshop. It comes from doing and experiencing — something that is granted through holding a leadership role.

The impact of determined trainees

Lest you be left with the impression that extracurricular involvement and leadership produces little else than personal growth, let me assure you that this could not be further from the truth. Whether you lead nationally or at your own institution, the efforts of trainee leaders have had, and continue to have, an enormous impact on the training and future of physician-scientists. To illustrate this, please indulge my brief sojourn into the historic; as the tenth president to lead APSA (Table 1), I am particularly proud of the accomplishments of my predecessors and the teams they led. Each of the following achievements were driven by trainees, individuals much like many of you, and have made a lasting impact far beyond the scope of APSA.

I suspect few statements will more strongly unite medical students of all stripes, including physician-scientist trainees, than this one: the US Medical Licensing Exam (USMLE) is a big deal. We all must pass its several steps, and like it or not, our scores are major factors in where we end up after medical school. Some of you may know that the USMLE undergoes review to ensure it is meeting the needs of students and institutions. One such review, beginning in January of 2004 (1),

was aimed at determining whether to combine Step 1 and Step 2 Clinical Knowledge of the USMLE into one exam administered during the clinical phase of training. Naturally, there were many strong opinions on the subject from governing bodies, schools of medicine, and trainees themselves. For dual-degree trainees, many of whom complete the clinical years of medical school following graduate school, being required to have total mastery of the basic sciences so many years after the fact was a daunting proposition. For all medical students, the prospect of a single, fate-determining exam was enough to send those predisposed straight into supraventricular tachycardia. APSA's policy committee, recognizing a need for a strong student voice in the process, surveyed the entire US medical student population, in part through the Institutional Representatives (IRs) of APSA. APSA then shared the responses of over seven thousand US medical students (2) with the USMLE review committee, and while we certainly cannot claim to be the sole determinant of the decision to maintain separate exams (3), APSA's voice was definitely influential.

A program near and dear to the hearts of all dual-degree trainees is the Ruth L. Kirschstein National Research Service Award F30 Predoctoral Fellowship of the NIH. Many younger trainees may not realize this, but until recently, the number of NIH institutes that supported one unified F30 mechanism could be counted on less than two hands (4). APSA members had long expressed frustration that many large institutes, including the National Cancer Institute, did not support this fellowship, leaving applicants to join the larger pool of predoctoral candidates applying for the F31, a mechanism often poorly suited to a dual-degree training plan. APSA's trainee leaders recognized this unmet need and again took the pulse of the trainee community, gathering data and assembling a strong argument. APSA leaders presented the NIH with a clear indication — straight from the mouths of trainees — of the importance of the F30 for all dual-degree trainees. While APSA again cannot claim to be the sole driver of this decision, it is no coincidence that many previously recalcitrant institutes began supporting the F30 after APSA delivered its findings to NIH leadership (5).



Figure 1. Members of the 2016–2017 APSA Leadership Team. Some of the members of the 2016–2017 APSA Board of Directors and Executive Council at the 2016 Leadership Retreat in Atlanta, Georgia, USA. From left to right, clockwise: Alexander J. Adami, Mariam Bonyadi-Camacho, Hanna Erickson, Kofi Mensah, Krishan Chhiba, Tim Kennell, Daniel DelloStritto, Brandon Fox, Travis Hull, Karen Doersch, Abhik Banerjee, Eric Schauburger, Audra Inness, and Dania Daye.

A further historical achievement, and one which APSA has continued throughout its existence, has been our representation at the highest levels of discussions and deliberations regarding the future of physician-scientists. I could devote dozens of presidential addresses (as have many past ASCI and AAP presidents) to the plight of the physician-scientist as an “endangered species” (6). However, instead of directing you to the woes of the profession, I seek to show you the ways in which APSA has worked to combat them. Many of you have likely heard of the Physician-Scientist Initiative, originally spearheaded by the Association of Professors of Medicine, but how many of you were aware that APSA’s founder, Freddy Nguyen, was a participant in the initial phases of this initiative (7)? Or that APSA leaders have regularly joined meetings focusing on physician-scientist training, such as those of the National Association of MD-PhD Programs and the Alliance for Academic Internal Medicine (AAIM)? Our voices have always been valued at these discussions, and as trainee leaders we can play a direct and concrete role in shaping how physician-scientists are trained and supported in this country.

Taking the measure of a year of successes

Of course, achievements of APSA trainee leaders are not merely found in the dusty pages of more distant history. No presidential address would be complete without pausing to exalt the many accomplishments the president oversaw during the past year. My greatest contribution to this year of many achievements was to assemble an outstanding leadership team (Figure 1) who truly did all of the work and deserve all of the accolades. Each of these successes, like the historical ones I outlined above, are examples of how trainee leaders have made an impact on the association and the broader community of physician-scientist trainees.

This year was one of many milestones. APSA saw over 1,500 dues-paying members, a considerable achievement for a society less than 15 years old. Our Annual Meeting, held as part of the AAP/ASCI/APSA Joint Meeting, attracted more than 360 physician-scientist trainees, a record number. We held five successful regional meetings across the country and have several dozen thriving local APSA chapters at institutions nationwide, all of which are doing important work for physician-scientist trainees at their own institutions. While

chasing numbers may seem egotistical, they are important. Not only does reaching more trainees help APSA more accurately assess the needs and desires of future physician-scientists, but doing so gives the association more clout with stakeholders, strengthening arguments we make on your behalf and enabling us to truly represent your concerns to those whose efforts may influence your training path and eventual careers. As a unified community, our voice is one to which leaders of the scientific and medical communities truly do listen.

Speaking of stakeholders, APSA leaders were very active this year in representing you to key decision makers and drivers of policy changes. In July and December of 2016, APSA’s senior leadership participated in the final two workshops on the physician-scientist convened by Francis Collins, director of the NIH. In February 2017, APSA represented trainees at the Research Pathway Directors Meeting of the AAIM, giving voice to your needs and concerns as directors of physician-scientist training programs sought to strengthen and expand them. It may be tempting to dismiss such meetings as mere generators of white papers, but the topics discussed are already having an impact. New NIH ini-

tatives discussed during these meetings, including a K99/R00 career development award tailored to physician-scientists, are already appearing (8), and other proposals in the pipeline will soon be outlined in a formal publication by the organizers of the NIH workshops (refer to ref. 9, which was published after the initial text of this address was prepared).

This year was also one of great data for APSA. APSA's first publication, exploring the career intentions of physician-scientist trainees, is nearing publication as I pen this speech (refer to ref. 10, which was published as this address was prepared for printing), representing the culmination of many years of data collection, analysis, and diligent work by a talented team of trainee leaders. Among other things, this manuscript represents perhaps the first comprehensive effort to compare MD-PhD trainees with MD trainees who express interest in research careers. The data presented therein will hopefully help guide schools of medicine as they offer programs to help MD trainees launch their careers as physician-scientists.

This summer, APSA will present a project exploring the clinical continuity strategies of MD-PhD programs at the National MD-PhD Association Meeting in Washington, DC. It may surprise you to know that no one has ever examined how different programs provide clinical continuity, or if they do at all, during the graduate school phase of training. It was the suggestion of an APSA leader, an IR in fact, that launched this project, and the interest we have received from directors of MD-PhD programs has been intense. With these and more efforts soon to be revealed, APSA is contributing more than just an opinion and a viewpoint, important as those may be: we are contributing concrete data which may be used to influence training and training outcomes.

Earlier in the training pipeline, APSA's Undergraduate Mentorship Program continues to grow, with over 150 mentor-mentee pairs assembled. This program is both an example of how working with APSA can build your mentorship skills as a medical student and how APSA can meaningfully strengthen the pipeline of physician-scientists. Schools of medicine and large institutional stakeholders, such as the NIH, can apply their efforts to medical students,

residents, and fellows, but few are as well-placed to help more interested undergraduates prepare for this career path as those who were, just a short time ago, undergraduates themselves.

My immediate predecessor, Daniel DelloStritto, delineated the virtues and relevance of scientific societies in his own presidential address (11). I may be biased, but I firmly believe the successes of this year, and many more I do not have time to address, are proof positive of the importance of societies, particularly APSA, to the physician-scientist community. The accomplishments of this year and of all the years since APSA's founding are all the more remarkable because they were not driven by faculty, administrators, or funding agencies: they were driven by trainees. APSA is greater than the sum of its parts, and it is the efforts of trainees just like you or me who make everything that we do possible.

Conclusion

I am now approaching my seventh year in APSA, and it has been my great privilege and distinct honor to serve and represent the trainee community. Far more meaningful than any fleeting glory has been working alongside and getting to know many extraordinary trainees from across the country, individuals whose efforts were critical to the accomplishments I have mentioned in this address. As I pass stewardship of the society to the next generation of trainee leaders, I am more confident than ever that APSA will flourish and continue to advance its mission of supporting aspiring physician-scientists. Our country, and the whole of humanity, needs a strong pipeline of physician-scientists to continue to make advances in our understanding of human health and disease, and I look forward to watching APSA play an important part in strengthening that pipeline. To all trainees who may not yet be APSA members or may not be taking on leadership roles within APSA or at their own institutions, I encourage you to get involved to whatever degree you are able. To all who are leaders now, I congratulate you and wish you the very best. Your efforts will play an important part in strengthening the future of the physician-scientist and in ensuring that the greatest advances in the science of human health are not behind us but are yet to come.

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Address correspondence to: Alexander J. Adami, University of Connecticut Health, 263 Farmington Avenue, Farmington, Connecticut 06030, USA. Phone: 860.679.1995; Email: alexander.adami@physicianscientists.org.

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