

2016 American Physician Scientists Association Presidential Address

Why societies?

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J Clin Invest. 2016;**126**(12):4723-4726. <https://doi.org/10.1172/JCI90140>.

APSA Presidential Address

Colleagues and friends, this effort marks a first for the American Physician Scientists Association (APSA), as we are reflecting on the past and looking into the future. I have the fortunate, or unfortunate, task — depending on how you look at it — of writing our society's first published presidential address. Through the 12 years APSA has been in existence and participating in the Joint Meeting, the presidents of American Society for Clinical Investigation (ASCI) and the Association of American Physicians (AAP) have bequeathed upon our generation knowledge of their experiences and forebearers in the form of these presidential addresses. Today, through the diligent work of my predecessors, is the first time the trainee voice will appear alongside that of these other prestigious societies. I chose this title, "Why societies?" for a very particular reason. This year, Nobel laureate Michael Brown delivered his Lasker-APSA lecture, "Why prizes?" at the Joint Meeting (1). In his address, Dr. Brown made an argument for the importance of prizes in science. As he put it, "In my opinion, prizes are beneficial because [they show] society values scientific discovery. When the President of the United States welcomes American Nobel Prize laureates to the White House, he elevates scientists to nearly the same status as NCAA basketball champions. Such publicity may inspire young people to realize [...]"

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I chose this title, "Why societies?" for a very particular reason. This year, Nobel laureate Michael Brown delivered his Lasker-APSA lecture, "Why prizes?" at the Joint Meeting (1). In his address, Dr. Brown made an argument for the importance of prizes in science. As he put it, "In my opinion, prizes are beneficial because [they show] society values scientific discovery. When the President of the United States welcomes American Nobel Prize laureates to the White House, he elevates scientists to nearly the same status as NCAA basketball champions. Such publicity may inspire young people to realize that science is valued." However, he then suggested that prizes should be more or less unimportant. Dr. Brown says this in part because he believes the best of science occurs when we are driven by our intrinsic desire to understand the world around us. I believe this speaks not simply to prizes but also to the purpose and recent progress of medical specialty societies including APSA.

How so? Are societies and prizes truly important for the progress of medicine and science? Or is there an "internal driver"

that should be more important? Well, I will not make you wait too long for the answers to these questions. I believe societies are extremely important in driving change. Societies are so important that I believe we all should desire to be involved in some aspect of them (be that as members or leaders). However, like prizes, societies are not without downsides. I am going to focus on the attributes of these societies with regard to trainees and the preparation of our (the next) generation of (physician-) scientists.

Over the last few decades, there has been a rapid expansion of highly specific disease and/or medical societies and their related meetings. What purpose do these societies serve for scientists and the lay community? This question could be answered in a many-page response; however, I believe at their heart the creation of these organizations allows for the advocacy of science and medicine to other practitioners and the broader lay community. Moreover, medical specialty societies provide a platform for practitioners to interact with their peers within their field, a goal and outcome all of us can support.

From a strictly trainee perspective, many of these societies have devoted tremendous time and energy to creating or sponsoring policies that support us. When I think about societies that have been successful in investing in the next generation, I do not have to think too hard. The ASCI and AAP, through this Joint Meeting, have devoted time and resources to the development and mentoring of us trainees by giants of medicine. The connections we make and scientific luminaries we meet amongst the ASCI and AAP membership both inspire us in a general sense and provide specific examples of career successes we can look to as we begin our own career journeys. These close interactions between senior society members and trainees, and similar interactions at the meetings of many specialty

societies, including a number of APSA partners, are a critical source of informal training and career development.

In this current time of funding scarcity and increasingly long and arduous training paths, some societies have created special, formalized programs to help trainees. In 2013, the ASCI created the Young Physician-Scientists Awards (2), designed to honor young investigators with NIH K awards who have demonstrated excellence in science and academic achievement. The ASCI sponsors special events at this Joint Meeting to foster deep mentoring relationships between these new young stars and established ASCI and AAP members. Another society taking a unique, but just as important, approach is the American Association of Immunologists (AAI, an APSA partner) and their public policy fellowship program. Trainees participating in this program receive a year of support from the AAI to advocate for science at the local and national level and to explore careers outside of mainstream academia, such as in the areas of public policy and legislative activities. Finally, societies like the American Society of Hematology and the American Heart Association (AHA) have extensive funding programs targeting individuals from the predoctoral to the senior investigator stages. These were developed to spur research advances in their specific topics of interest and fill gaps that governmental agencies, academic institutions, and other funders of medicine and science do not have the resources to fill. This is in no way a comprehensive list, but these organizations are recognizing the importance of nurturing young minds. They are addressing this need at their annual meetings and with their awards, which helps promote scientific development in spite of a lack of broader publicity and recognition from the public or even other scientists in different fields.

However, with the rapid expansion of these groups, there has been a shift in how the communities interact. What do I mean? Well, the rising importance of spe-

cialty, subspecialty, and sub-subspecialty societies in medicine and science has become more siloed. Unfortunately, one unintended consequence of this societal super-specialization has been to increase the importance of very focused meetings at the expense of more general gatherings like the Joint Meeting. This has strained collaborator camaraderie, the exact opposite effect societies intended to produce. Investigators feel pressured to join and participate in meetings for their field's subspecialty society and have less encouragement to participate in broader society meetings that cross disciplines. I fear this has had a particularly detrimental effect on trainees. I say this because very early on in much of our training, specifically our scientific training, we become and are encouraged to become so niche that we forget the vast number of questions being asked in the larger scientific community and how these questions may relate to our own research. For example, if you are not studying genetics you may not be familiar with the truly groundbreaking work that Dr. Stu Orkin presented at the Joint meeting this year on hemoglobin synthesis, a significant development in our understanding of "genetic topology" and its relation with enhancers (3). If you are a geneticist, it is too easy to scoff at those studying hot springs bacteria, until that work produces PCR. If you are a hematologist caring for patients with sickle cell disease, it is too easy to ignore those studying bacterial immune systems until they discover genetic engineering machinery that might cure your patients in the coming decades. It is an interesting contrast in that we have seen an expansion in collaborative efforts in science and the promotion of team science but that this has not necessarily trickled down to the advice given to trainees by the societies that they belong to. These societies have pulled us into our own echo chambers. As humans, we gravitate to what is comfortable, and if our fellow physician-scientists speak our language, we are more inclined to seek out them.

However, even within this sea of specialties, there still exist many cross-disciplinary gems including this Joint Meeting. The present meeting has much to offer to established investigators and trainees that meetings with a very narrow focus cannot provide. Many training programs encour-

age trainees to attend meetings in their field, but these "general" meetings should not be overlooked and should continue to be emphasized throughout the career of the physician-scientist. They cannot replace the specialized meetings, where the latest in a field is discussed, but neither can those specialized gatherings replace a truly general meeting that touches topics of importance to all of medicine. No other meeting that I have attended or discussed with colleagues has seen me witness the optimism and drive of Dr. Tony Fauci as he delivers a brief history of HIV treatment and the ambitious goal of "curing" the disease, followed a few talks later by the inspiring story of the discovery of leptin. These two topics seem to have little in common, but what they do share is why so many of us first entered the physician-scientist career path: the understanding and improvement of human health, driven by a fundamental desire to discover the world around us.

I, like many of my trainee colleagues, see this triumvirate meeting as an invigorating gathering. What do I mean? Well, having attended six of these Joint meetings now, I am struck by the same feeling I get when Sunday afternoon arrives. I am exhausted and sleep deprived and humbled by the great strides being made by the leaders of medicine and science and many of my trainee colleagues. However, I am beyond energized. I reflect on the amazing talks that have occurred, on the new science I am hearing for the first time, and on all the new trainees I had the opportunity to speak to. I go back to my lab ready to hit the ground running 100 mph (or 100 multiplexes per hour). This meeting is where ASCI and AAP help APSA members with direct advice, awards, and support for our aspirations. I hope, too, that APSA members inspire ASCI and AAP members with our enthusiasm and unwillingness to let perceived barriers and "that can't be done!" stop us in our quest to expand what we know about human health and disease.

This year is the 130th anniversary of the AAP, and to prepare for this momentous occasion I had the opportunity to explore previous presidential addresses, including some of the more recent addresses from the last 20 years. But I think more importantly, I had the pleasure to review the minutes from the first 20 years of the AAP, and I found them to be most intrigu-

ing. Interestingly, exploration of those early meetings reveal a true dedication on the part of this organization to foster the connection and development of trainees. In one of the very first presidential addresses given in the 20th century, then-president of the AAP William H. Welch declared that hospitals of their time should "enable promising young [physicians] to do scientific work, to acquire thorough clinical experience, and to begin to establish their reputations by contributions to their special departments of knowledge" (4). This clearly shows the deep investment these organizations have made since their founding to foster the next generation of young physician-scientists.

Let me share with you another anecdote demonstrating the continuous drive at this meeting to inspire the next generation. In my six years attending the AAP/ASCI/APSA Joint Meeting, I have noticed the deep camaraderie between physician-scientists at various levels of training. This camaraderie extends even between those individuals that may not be in related fields. A few years ago, I was responsible for helping organize this meeting and inviting some of the APSA speakers. That year we had invited Dr. Peter Agre, whom many might know as the Nobel laureate who discovered and elucidated the role of aquaporins. That year I learned how his study of diarrheal diseases lead to him meeting his wife (he noted it's not a topic that should be discussed over dinner). Moreover, I learned what a truly kind soul he was. He is an inspiring physician-scientist, but after meeting him and getting to know him personally, he continues to ask about my well-being and other topics we discussed every time I have seen him at subsequent Joint Meetings. Dr. Robert Lefkowitz said it best when making his AAP Presidential Address back in 2000. He was speaking about the Joint Meeting and the troubling trend of declining attendance, but spoke admiringly of the power of this special meeting. In his words, "Here, in one place, for several days, were all the glitterati of American academic medicine—the mythical heroes I had read and heard about" (5). This Joint Meeting offers an opportunity for the various generations of physician-scientists to interact in a way not found elsewhere. The attendees at various stages in their career benefit

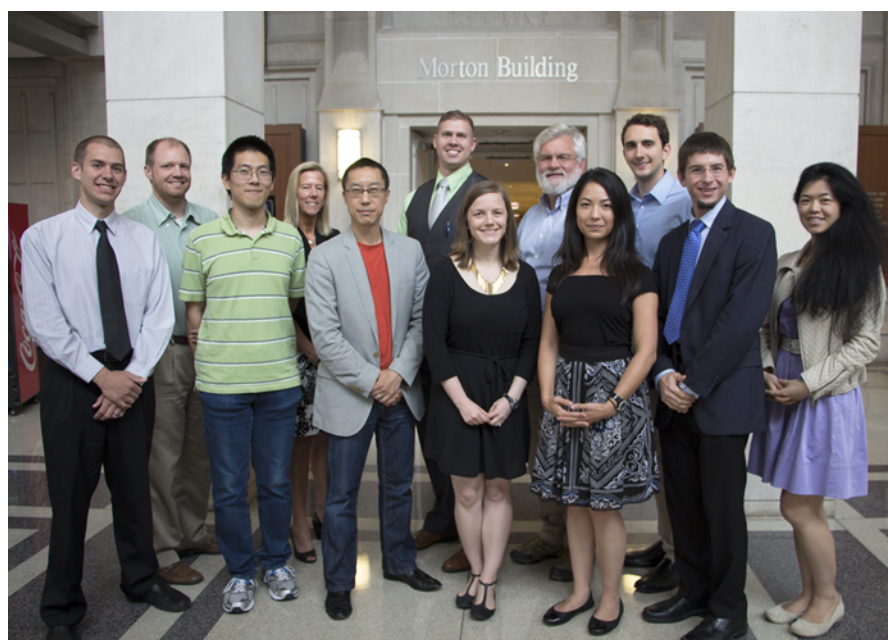


Figure 1. APSA Executive Council and Board of Directors. This photograph was taken at the APSA Leadership Retreat in Chicago, Illinois (June 2015). Front row (left to right): Brandon Fox (Membership Chair), Hsiang-Chun “Jimmy” Chang (Fundraising Chair), Jaimo Ahn (APSA Board Member), Stephanie Brosius (Public Relations Chair), Jillian Liu (Events Chair), and Alexander Adami (President-Elect). Back row (left to right): Eric Schauburger (APSA Board Member), Susan Wagner (APSA Executive Director), Daniel DelloStritto (President), M. Kerry O’Banion (APSA Board Member), Alex Dussaq (Technology Chair), and Jennifer Kwan (Policy Chair). Not pictured: Peter Mittwede (Vice President), Joshua Cohen (Partnerships Chair), Michael Guo (Past President), Moshe Levi (Chair of the APSA Board), and APSA Board Members Hans Arora, Lawrence (Skip) Brass, Dania Daye, David Engman, Shwayta Kukreti, David Markovitz, and Kofi Mensah.

from this uniqueness because it inspires and encourages a broader understanding of what is happening outside of our own areas of interest.

I have spent a great deal of time touting the Joint Meeting as being invaluable, and I could continue. However, there are many initiatives that organizations spearhead besides annual meetings. These include some of the fellowships I mentioned earlier. So when I talk about APSA, many will ask, “What does APSA have to offer as benefits to its members? What about the larger community?” I would like to highlight a few of the goals we have as an organization and those we were able to accomplish as an organization this year. Before I begin, let me start by thanking the APSA leadership team pictured here during our annual leadership retreat in Chicago (Figure 1). I am able to be here today because of the hard work and dedication by the executive council and the invaluable guidance of the board of directors. One of our largest successes this year was that we were able to expand our existing partnerships with other specialty societies. Specifically, one truly exciting opportunity we offered our members was the opportunity to submit an abstract on a review topic to be considered for publication by the journal of one of our newest partner societies (Society for Experimental Biology). The addition and expansion of partnerships in a variety of fields speaks to the diversity of interest

that our generation of physician-scientists, the next generation, possesses. Just as the Joint Meeting brings many specialties together under one roof, APSA brings many specialty and scientific societies together to jointly contribute to the future careers of physician-scientists in training.

For an organization as small as ours, having the capabilities to hold events is crucial. Many of the members at the Joint Meeting have told me of the importance of the events we hold outside of the annual meeting. For many, the name of APSA would have been unknown if not for our local events, such as the regional meetings or our local representatives, including institutional representatives and local chapters. This coordination at a local and national level is no easy feat. Once individuals do hear about APSA, many are excited and want to take a leadership role. This year at our local level, we were able to expand the development of our chapters to nearly 20 and counting. These local chapters organize events and promote physician-scientist training at their home institutions. APSA was able to finance the recruitment of speakers for three chapters and provide small grants for chapter events. These chapters brought in a diverse array of speakers and allowed those individuals to share their research and career experiences to a wider audience (for more information, please visit <http://www.physicianscientists.org>). The work of APSA’s members at their own institutions extends

APSA’s reach and provides benefits far in excess of what my national team and I could hope to achieve alone.

I could go on about all the accomplishments this leadership team was able to achieve; however, I want to leave you with some parting thoughts. I have focused much of this talk about APSA and the Joint Meeting, but I want to inspire all of you trainees and even those of you long out of training to be part of the good work societies do. As trainees, we are the next generation of physician-scientists, and we must use our duality to influence positive changes in both medicine and science. If you are interested in cancer research, become actively involved with the American Society of Clinical Oncology (ASCO) and American Association for Cancer Research (AACR) and allow your opinion to be heard. If you love the thought of understanding how best to reduce death from stroke and heart attacks, reach out to the AHA and advocate for change to promote cardiac health and science. We all must engage our future if we hope to improve it. But, and this is the most important part, if you do involve yourself with ASCO, do not forget about your colleagues in the AHA and vice versa. APSA and the Joint Meeting are opportunities to remind you of these broader connections.

Today I am simultaneously nervous and energized. As a physician-scientist trainee, I have heard repeated anecdotes that tension is the state we live in. We

are pulled by our clinical colleagues to be more proficient in patient care and at the same time competing with an ever stronger workforce of scientists who are rapidly expanding our knowledge day in and day out, with no clinical duties to “distract” them. But, I argue that this is our thriving state. We all could easily decide to focus our energy on one of these two professions. But we do not. We heed the call of our souls to not only heal by touch, but heal by painstaking thought and experimentation. So let us apply this lesson to our involvement with societies and continue to encourage a bridge between all science and all medicine. Only by being the voice that advocates for diversification in

thought, and by breaking the recent trend towards scientific isolationism, can we hope to take science and medicine into the future. Thank you.

Acknowledgments

I want to truly thank Alexander Adami and Karen Doersch for all their hard work and discussion on this topic. Moreover, their editorial assistance was crucial in helping more clearly articulate my points.

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