Letter from the Editors
Hung Doan, University of Texas Medical Branch
James Giles, The University of Manchester, UK
Evan Noch, Temple University
Curtis Gabriel, Vanderbilt University
Daniel Matson, University of Virginia School of Medicine

This Summer 2010 issue of Phi Psi starts off the new Academic 2010-2011 year with our new leadership and new editors. Aboard this year are returning editors Hung Doan and Daniel Matson. New editors for the newsletter include James Giles from the University of Manchester, UK; Evan Noch from Temple University, and Curtis Gabriel from Vanderbilt University.

We are delighted with this issue of Phi Psi which includes a Letter from the President, Christopher Alvarez-Brekenridge, discussing opportunities to become involved with APSA and events to be on the lookout for.

We also have two contributions which feature practicing physician-scientists, including an interview with E. Antonio Chiocca, MD. PhD. from the Ohio State University Department of Neurosurgery and one from Susan Zhang, MD, PhD whose story about practicing medicine and conducting research will be sure to pique the interests of our readership.

Finally, APSA welcomes the new Social Sciences and Humanities Subsection. Uptal Sandesara and Nick Iacobelli discuss the new subsection and what it means for APSA.

The editors would like to emphasize our commitment to APSA and our promise to consistently put together strong newsletters. We look forward to working with the leadership on the Executive Council to enhance the newsletter’s outreach. We anticipate a great year and we welcome any suggestions for our upcoming newsletters.

Hung Doan <hung.doan@physicianscientists.org>

From the President
Christopher Alvarez-Brekenridge, The Ohio State University

Greetings fellow APSA members! As we embark on a new academic year, I am excited to report on a number of exciting developments. Following the Annual Meeting in April, we have transitioned in a new Executive Council, Standing Committees, and Institutional Representatives.

I would personally like to thank all the individuals who have taken on the responsibility of a leadership position within APSA. Due to your dedication and hard work, we are able to ensure the long-term stability of our organization. Additionally, for those of you at schools that do not have an Institutional Representative, I urge you to consider taking on this important leadership opportunity.

Within APSA, the months of October and November are associated with our regional meetings. While this trend is continuing in 2010, we have a number of additional regional meetings compared to last year. Regional meetings will be held in the Southeast on October 9th in Birmingham, Alabama; the Midwest on October 30th in Columbus, Ohio; the South on November 13th in College Station, Texas; and the Northeast on November 20th, in New York. While our regional meetings will address a variety of topics, they are closely tied to our Outreach and Networking pillars. Additionally, each meeting will have special programming tailored to women in the biomedical sciences. If you have never attended an APSA national meeting, now is your chance.

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Personal Note
Suzan Zhang, MD, PGY-1 Resident, Massachusetts General Hospital

Susan received medical training from Peking Union Medical College and doctoral training in the Laboratory of Bert Vogelstein at Johns Hopkins University where she studied cancer genomics in pancreatic cancer cells.

I graduated from Peking Union Medical College in China. During medical school, I had an opportunity for two-months’ elective clerkships in UCSF, where I was so fascinated by the close integration of biomedical research and clinical practice. Aspiring to become a physician scientist, I came to the United States for further research and clinical trainings.

During my PhD study at the Johns Hopkins University, I was very fortunate to perform research in a wide variety of fields, from basic to translational, and to clinical trials. I witnessed the seamless transition from bench to bedside research, with the potential to impact peoples’ lives. I still remember my medical school years when I felt so disheartened because of my patient’s dismal prognosis. But now I am more confident to believe that our knowledge is never limited, as there is always hope from research in the lab.

Alleviating patients from their sufferings has always been my dream. Now equipped with both clinical and research experiences, I am ready to go back to the clinic. However, the door to practicing clinical medicine won’t open easily for an international medical graduate. The first obstacle I met was that most American medical associations were not open to international medical graduates, even when I was a PhD student at an American medical school. To my amazement, I found American Physician Scientists Association (APSA) was open to everyone. It is like a hidden gem, young and vibrant, absorbing all the resources to promote the development of physician scientists.

Joining a professional association has many advantages, such as finding role models, networking, obtaining career development and conference opportunities, etc. APSA serves well for all these purposes. During the 2010 ASCI/APSA joint meeting, I was not only impressed by the cutting edge research presentations, but also inspired by Dr. Francis Collins’ talk about the peaks and troughs of his career path. Sometimes we need the inspiration to keep up our motivation and adjust direction for ourselves. Such lesson is hard to find from books, but may be readily available from your home professional association, such as APSA. More motivated than ever, I am ready to start my internal medicine residency at Massachusetts General Hospital this summer. Looking back, it’s not an easy path, but looking forward, it will be a very rewarding career. International medical graduates, accounting for a quarter of American physicians, are a very precious group to bring in diversity, innovation, and excellence to patient care. Yet, the resources for helping with their career development are relatively limited in this country. I am very fortunate to have found an organization like APSA, which has equal access to people with all backgrounds. Hopefully more international medical graduates can find their home professional associations and achieve their dreams in this fertile ground.

Book Review: Connected: The Amazing Power of Social Networking and How They Shape Our lives by Nicholas Christakis, MD, PhD and James Fowler, PhD
James Giles, The University of Manchester, UK

‘Social networking’ is a phrase that has entered common parlance as a result of the emergence of web-based networking. Our social network is the string of connections between ourselves and our friends, and from there to our friends’ friends and so on. I found Connected, by Christakis (Harvard) and Fowler (UCSD), to offer significant insight into the influence of social networks on their inhabitants: from our appearance to our emotional state. It does make you stop momentarily to consider the implications of clicking ‘login’ on Facebook.

Their work into the effect of social networks on health using data from the Framingham Heart Study makes for interesting reading. They describe mapping more than fifty thousand connections between five thousand Framingham participants, and have published this data in the New England Journal of Medicine. Obesity, smoking and happiness, termed ‘contagions’ can be tracked spreading throughout social networks in characteristic patterns. Obesity tends to spread between friends of the same sex, smoking between the sexes, while the spread of emotions may require face-to-face interaction.

The authors sum up the ‘rules’ of social networks at the start of the book, which allows the reader to put the rest of the chapters in context. That each of us is able to shape our network may not come as a surprise, but by the end of the

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Physician-Scientist Spotlight:
Evan Noch, Temple University

For this issue, we interviewed a successful MD/PhD neurosurgeon and enthusiastic physician-scientist. E. Antonio Chiocca, MD, PhD. is Professor and Chairman of Neurological Surgery at The Ohio State University School of Medicine, Co-director of the Dardinger Laboratory for Neuro-oncology and Neurosciences, Co-director of the Viral Oncogene-sis Program at Ohio State’s Comprehensive Cancer Center, and Leader of the Neuroscience Signature Program. In this interview, we discuss the status of MD/PhD training in this country, perceptions about MD/PhD surgeons, and the outlook and prospects in the field of neuro-oncology in the coming years.

Evan: How did you get interested in becoming an MD/PhD physician-scientist?
E. A. Chiocca: It’s always about opportunities and mentors and people you meet. I knew I wanted to become a physician. I also always had an interest in research and basic science but not much exposure to it until college. In college, I became infected with an interest in research. I really wanted to do something where I could apply my interest in research, and the MD/PhD seemed like the best way to do that.

Evan: What was the most important factor in your decision to become an MD/PhD?
E. A. Chiocca: To me, research was almost a hobby. It wasn’t work. It was something I enjoyed doing. The MD/PhD provided me with the opportunity to do the research component throughout medical school. I knew medical school, at least the first few years, would just be rote memorization, and I thought that the PhD would be a nice way to break that up a bit and help me understand basic science better.

Evan: What advice do you have for young physician-scientists?
E. A. Chiocca: First of all, you have to love it. If you don’t love it, then it’s a tough, tough road. It’s a big time commitment. You have to love patient interaction but you also have to love the basic science. Second, I think that you need to try to focus early. Unfortunately, it’s a long road, and I think the best chance for your success is to pick a field and stick to it. When you go from field to field, the advantage is that you get a breadth of experiences, but the disadvantage is that you become master of none of them. You must have a gut feeling for what you really like. The third thing is that you should seek out mentors. Seek out people who have done it and that are positive about it. I think that having the experience of the mentorship can provide you with the impetus to continue even when you have tough times.

Evan: What is your perception of MD/PhD training and the future of science in medicine?
E. A. Chiocca: I think that MD/PhD training is fantastic training. I think that in the long run, what you’ll see is that most MD/PhD students are really well poised because of their intellect, their drive, their ambition, and their resources to do well in whatever field they decide to do next. I think that that training still provides you with an education that is unparalleled and unsurpassed. I think the art of medicine is still there, but medicine is becoming more and more a science. That art is slowly becoming less art and more science, more based on evidence, more based on clear-cut guidelines, and some of the fuzziness of medicine is slowly disappearing.

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See More Annual Meeting Photos on the APSA Facebook Fan Page!

The Annual Meeting Provided an Excellent Chance to Network with Fellow APSA Members.

APSA Members Presenting Their Research at the Annual Meeting Poster Session.
The 2010 APSA Annual Meeting commenced on April 23 at the Fairmont Hotel in Chicago. This year, APSA welcomed over 300 participants from around the United States and overseas, the majority of which were MD-PhD students. The Annual Meeting commenced with a keynote talk by Dr. E. Albert Reece, MD, PhD, MBA. Dr. Reece discussed his rise through the scientific and academic ranks, from his early days as a student in his native Jamaica to his current position as Dean of University of Maryland’s School of Medicine. Additionally, he detailed his investigations into the mechanisms that cause diabetic embryopathy. Next, Annual Meeting participants were privileged to hear an inspirational keynote talk by Dr. Joseph Goldstein, MD, the 1985 Nobel Prize winner in Physiology or Medicine along with Dr. Michael Brown, MD. Dr. Goldstein described his keys to achieving success in science, illustrating his points about scientific collaboration and the willingness to take risks, with personal anecdotes and poignant examples. Afterwards, the Woman in Medicine Panel discussed the reasons why there is a comparatively small number of women in higher level academic positions compared to their male counterparts, and the ways in which academic institutions are addressing the issue. Finally, the day ended with dinner outings around downtown Chicago led by the APSA leadership, followed by the APSA Welcome Reception at the phenomenal Pritzker Pavilion, that featured a live jazz band. APSA leaders, institutional representatives, and Annual Meeting attendees mingled and networked in the backdrop of Chicago’s beautiful Millennium Park.

Day two began with mentorship breakfasts, during which APSA Annual Meeting attendees received career advice from notable senior investigators of the American Society for Clinical Investigation (ASCI) and the American Association of Physicians (AAP). This event remains one of the hallmarks of the Annual Meeting, since it bridges the current generation of investigators with the up-and-coming physician-scientist workforce. After breakfast, APSA Annual Meeting participants attended a series of talks by eminent speakers, which included of Dr. Francis Collins, MD, PhD, and Dr. Gerald Crabtree, MD. Following this plenary session, participants adjourned to an ASCI/AAP/APSA hosted poster session and lunch. The poster session was a great success as most of the presenters were APSA members. Subsequently, APSA Annual Meeting participants attended one of three career development workshop sessions: Residency and the Physician-Scientist 101, Grant Writing/Funding, and Med-to-Grad Transition. The purpose of these workshops was to facilitate the development of APSA members at various stages in their training. In the afternoon, ASCI President Dr. Jon Epstein, MD and AAP President Dr. Ralph Horwitz, MD delivered insightful talks about lessons learned from the previous generation of physician-scientists and the humanistic side of science and medicine, respectively. The night was capped off with a truly inspiring short talk by the newly-minted NIH Director, Dr. Francis Collins, MD, PhD at the APSA-hosted Saturday night dinner. Dr. Collins spoke about the hills and valleys he encountered as he journeyed through his career in science, and at the

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AMWA and APSA are partnering up!

To learn more visit www.amwa-doc.org

- Scholarships, grants and awards for both students and physicians to support and recognize excellence in medicine and research
- Professional development tools including online career center, mentorship and networking opportunities

The American Medical Women’s Association (AMWA) is excited about working with APSA to assist and empower female physician-scientists. Established in 1915, AMWA still remains the largest international organization dedicated to improving women’s health and advancing women in medicine.
Connected (cont.)

book is a rather uplifting thought once you are more convinced of the potential importance of your own role. That networks have a life of their own is an altogether fascinating and disturbing concept that merits further exploration. The book does raise some very interesting questions with regard to public health policy, but does not discuss these in depth. It may be possible for instance to target ‘well-connected’ (and therefore influential) people in a social network to effect a change in public, but what are the ethics of such an approach? Of course, this would be ambitious for a single volume and the book contains detailed references for those who would like to read more on specific topics.

Social Sciences and Humanities Subsection Created
Utpal Sandesara and Nick Iacobelli, University of Pennsylvania School of Medicine

On March 29, 2009, APSA gained its first official subsection when a nationwide community of MD-PhD trainees in the social sciences and humanities (SSH) voted to join the organization. SSH trainees reach across disciplinary boundaries by combining medicine with scholarship in social and humanistic domains. APSA’s newly-incorporated subsection allows these trainees to participate in the broader community of physician-scientists while maintaining a distinct, rich identity.

This integration represents the next step in a history that began with a seminal 2005 conference in San Francisco. Since that time, SSH trainees have held biennial meetings—in Chicago in 2007 and Philadelphia in 2009—each drawing approximately 100 attendees from programs throughout the US and Canada.

The decision to join APSA took place at the 2009 conference at the University of Pennsylvania. The conference featured keynote addresses by anthropologist Vinh-Kim Nguyen, literary scholar Rita Charon, historian Walt Schalick, and epidemiologist Camara Jones, all physicians themselves. It also offered trainees the opportunity to present original research and obtain career guidance from more senior scholars.

The next biennial SSH meeting will take place as part of APSA’s 2011 conference in Chicago. “Being part of the APSA annual meeting will help SSH trainees network with each other more effectively, while also connecting us to our peers in the biomedical sciences,” says Adam Baim, co-organizer of the SSH conference. Held on the last two days of the APSA annual meeting, the SSH conference will host keynote lectures and trainee research presentations specific to members of the subsection.

In the meantime, the newly-formed SSH subsection is hard at work continuing and expanding efforts it has undertaken in the year following the Philadelphia conference. Under the leadership of Scott Stonington (UCSF), the outgoing SSH representative on the APSA Executive Council, the group is working to build its community and strengthen its outreach.

The APSA website currently features a resource center on medical training programs in the social sciences and humanities, and these listings will be updated during the coming year to reflect the growing number of such programs. The SSH subsection is also generating a network of representatives from individual schools and creating a centralized mailing list in order to build infrastructure for coordination and communication across institutions. As part of strengthening the community, members of SSH are reaching out to pre-medical students in order to make them aware of opportunities in the social sciences and humanities. Members are also contacting SSH trainees at other institutions and encouraging them to join APSA. Finally, APSA has begun advocacy initiatives on issues particular to “non-traditional” physician-scientist trainees.

Under the leadership of Anji Wall, the SSH representative-elect on the APSA Executive Council, these activities will continue full tilt into the coming academic year. “I am really excited about the integration of MD-PhD scholars in the Social Sciences and Humanities into APSA. Our main goals for the year are to build our community through increasing membership in APSA, to play an active role in APSA by encouraging SSH member participation, and to provide website services for the APSA SSH community. In addition, we will be working hard with APSA to make our joint conference in 2011 a success.”

This year’s APSA Regional Meetings are fast approaching! Find out More!

- **South East Regional Meeting** - Birmingham, AL - October 9
- **Midwest Regional Meeting** - Columbus, OH - October 30, 2010
- **South Regional Meeting** - College Station, TX - November 13, 2010
- **North East Regional Meeting** - New York, NY - November 20, 2010
Annual Meeting (cont.)

end serenaded the audience with a song about DNA and its connection to us all, played to the tune of Del Shannon’s Runaway. All who were in attendance that night were undoubtedly left with an indelible image of Dr. Collins strumming away on his guitar (which conspicuously has a double helix inlaid into the guitar neck). It was a tough act to follow, but the APSA dinner keynote speaker, Dr. Jennifer Grandis, MD captivated dinner attendees as she shared about her experiences as a successful woman in science. She combined humor and grace in discussing the various obstacles she had to overcome and the advice she imparted to future physician-scientists. Finally, the night was rounded out as APSA members made their way to the AAP dinner and listened to an interesting talk from Anna Deavere Smith, MFA, an actress, playwright, and professor at NYU’s Tisch School of Arts, followed by a dessert reception with AAP members.

Sunday was a landmark moment in APSA’s short history, as the whole day featured APSA programming. The morning APSA plenary session consisted of APSA trainee oral presentations and prominent keynote speakers. Dr. Rita Charon, MD, PhD discussed how narrative knowledge in clinical medicine enhances the way in which we care for patients. It was refreshing to hear a non-traditional physician-scientist talk about contributions made by the social sciences/humanities side of science to clinical medicine. Next, Dr. John Niederhuber, MD, the former Director of the National Cancer Institute spoke about how cancer diagnosis and treatment will change in the near future, and inspired APSA members to lead the way in this exciting endeavor. The last keynote speaker of the day was Dr. Ferid Murad, MD, PhD, the Nobel Laureate in Physiology or Medicine in 1998. Dr. Murad talked about his circuitous path through sciences and the serendipity that led him to exciting discoveries involving the physiological effects of nitric oxide. Soon after, a post-graduate opportunities panel representing various economic sectors (academia, government, industry) discussed the career opportunities available to physician-scientist trainees. This was a wonderful chance for APSA trainees to ask important questions to the panelists and valuable career advice. Finally, the APSA Annual Meeting ended with the Residency Luncheon, where residency program directors and representatives from around the country discussed the merits of their program as it pertains to physician-scientist trainees. Overall, the 6th APSA Annual Meeting was a huge success not only in terms of strength of the keynote speaker line up and the record number of attendees this year, but also because of the invaluable mentoring and networking experiences gained from the Annual Meeting. This was the most ambitious APSA Annual Meeting to date, and next year’s should be even better. See you in Chicago next year!

President (cont.)

event or would like a prelude to our exciting programming provided out our Annual Meeting in April, I urge you to consider attending one of our Regional Meetings.

In addition to our Regional Meetings, we are in the preliminary stages of planning our 7th Annual Meeting from April 15-17. More information will be coming out within the next few months regarding logistics for this meeting; however, I encourage you to pencil in the date for this exciting annual event.

Lastly, I encourage you to frequently explore our website www.physicianscientists.org and our facebook page for updated content. While many of our membership benefits are accessible through these routes, your Executive Council is in the process of identifying new resources for our members that will be posted throughout the year on these sites. I wish you all a fruitful 2010-2011 academic year and I look forward to meeting many of you at our live events. In the meantime, please do not hesitate to contact me at <christopher.alvarez-breckenridge@physicianscientists.org>.

Sincerely,
Christopher Alvarez-Breckenridge

See More Annual Meeting Photos on the APSA Facebook Fan Page!
Evan: What do you think are the greatest challenges of being a physician-scientist?

E. A. Chiocca: There are many challenges. One is the time commitment. It takes a lot of time. I think second is the constant pull from one field to the other. The saying is that patients come first, and that’s true. You take care of patients, and they do well. It’s instant gratification. Research is gratification in a much more long-term way. You get your paper accepted; that may take a year. You see an experiment succeed; that may take a couple weeks. You get a grant; that may take a few years to get. Research has much more of a delayed gratification aspect to it than clinical medicine.

Evan: So you must be more patient in research?

E. A. Chiocca: Well, you have to balance yourself. You have to be weary of how you balance, especially in the surgical fields. If you have an MD/PhD in surgery or in any surgical sub-specialty, that tends to be very all encompassing. You need to really fight to keep the science background and keep the science laboratory going.

Evan: What motivates you most or gets you most excited about your current career?

E. A. Chiocca: I think it’s still fascinating. The process of discovery and just looking at what has happened in the last 30 years is just tremendous. It’s just remarkable how much technology, concepts, and discoveries have impacted basic science and translational science and how much science has impacted clinical medicine.

Evan: Some people believe that it is difficult to be a successful surgeon and a successful investigator. How do you manage to bridge the gap between the OR and the bench?

E. A. Chiocca: I’m not sure that there is a formula. Every individual is a little bit different. I was very cognizant of that. Neurosurgery residency is a long residency, and I spent time in the laboratory to build up a foundation that I could use. When I finished my residency and applied for faculty and academic jobs, I actually had some data accumulated so that I could start writing grants and become independently funded. Focusing on a particular area is a good thing because it makes you the expert. And in surgery, it’s becoming more and more clear that the more you do something, the better you are at it. Try to tailor your clinical practice to your research and you can marry them much more easily.

Evan: Glioblastomas continue to have one of the poorest prognoses of any human cancer. What do you envision this field will look like in 10 years?

E. A. Chiocca: If you had asked me that question five or six years ago, I would have been very nihilistic. I think that just in the last five or six years, we have made tremendous progress. The reason for that is that we are understanding the disease more and more. Glioblastoma multiforme is not one disease, it is multiple diseases. There are some that are very malignant, but there are others that have more biologically favorable factors that appear to allow patients to do a little bit better. I think that as we understand the biology of these tumors more and more and how different they are from each other, I think that we will start to tailor therapies. By doing that, I think that we’re going to get better and better at prolonging the survival of these patients. I don’t think that there is going to be one magic bullet. There may be a panoply of different magic bullets that will be more targeted to the one particular subgroup of glioblastoma multiforme. We’ve also gotten so good at taking these tumors out and leaving so little behind that can be seen by an MRI scan. That’s only possible because we have such advanced imaging in the operating room. I think that all of those technologies coming together are really going to start to impact patient survival. Five years ago, the patient survival was still less than twelve months. Now, it’s about fifteen months. It’s starting to inch up. We’re slowly getting there, but we’re getting there.

Evan: What do you believe is going to be the most successful personalized therapy for glioblastoma in the future?

E. A. Chiocca: That’s a hard question to know. Everything has its advantages and disadvantages. I think that the advantage of small molecule inhibitors is that it is easy for pharmaceutical companies to package a chemical and give them to patients. The only problem with chemicals is that we’re not going to be able to find a chemical inhibitor for every pathway. Chemical inhibitors have a lot of off-target effects that may have nothing to do with the cancer itself. Oncolytic viruses are totally the opposite. Pharmaceutical companies have little interest in them because they are difficult to package, and there is also a huge expense associated with them. The major advantage of oncolytic viruses over drugs and chemicals is that the viruses do not have a half-life. Each one of them will divide and replicate based on the amount of tumor. There is a theoretical, rational, and biological advantage to oncolytic viruses that does not exist with chemicals. I think that immunotherapy has a big potential. Trying to instruct the immune system to destroy every tumor cell in your brain sounds very exciting, but it’s still going to be a long way to get it to work completely. We’ll see what works. There’s more excitement now than there was five or six years ago.