Letter from the Editors
Hung Doan, University of Texas Medical Branch
Shane Stecklein, University of Kansas School of Medicine
Daniel Matson, University of Virginia School of Medicine

This Spring edition of Phi Psi coincides with our APSA Annual Meeting held in conjunction with the ASCI/AAP Annual Meeting. As such we have included the results of the F30 survey conducted by the APSA Policy Committee.

President David Braun provides the current state of the organization and what a dynamic year it has been. President-Elect Christopher Alvarez-Brekenridge encourages involvement at all levels of APSA. Additionally, Ivayla Geneva has written a piece detailing leadership opportunities within APSA of which selection of committee chairs will take place at the annual meeting. Also this edition’s Physician-Scientist Spotlight focuses on one of the speakers at the ASCI/AAP Meeting, Joseph Goldstein, MD, the recipient of the 1985 Nobel Prize in Physiology or Medicine and the Albert Lasker Basic Medical Research Award.

Additionally, Daniel Matson contributes a review of the book The Vanishing Physician-Scientist? Edited by Andrew I. Schaffer, MD. Through a series of contributions from leading academic physicians and physician-scientists, this volume seeks to address the growing concern of the “vanishing physician-scientist” from an economic, sociological, scientific, and historical perspective. Indeed it is a must read for our readership and timely given the NIH Roadmap in directing the future biomedical research.

Additionally, Hung Doan contributes a piece on what Translational Research is and how different programs throughout the country are addressing the growing concern of the “vanishing physician-scientist”. This Annual Meeting is a very important event. It presents us with certain unique opportunities to integrate the work that we have done during the year, and to prepare our organization for continued future success. It is also a unique opportunity to meet so many fellow trainees and also to learn from the experiences of some of the most accomplished and distinguished physician scientists from the ASCI and the AAP. This, then, is a forum where we not only meet new people, but we have a chance to exchange ideas, and to develop new ones. Consequently, this is not an event where we merely listen, but we also build. As such, it is essential that members communicate their thoughts, concerns, and proposals to members of the Executive Council, as well as interact with other APSA members. While it may be easier to interact with those already

(See President on Page 7)
Greetings fellow APSA members! As our 6th Annual Meeting arrives, our organization finds itself with a vibrantly diverse set of training programs, institutions, and geographic areas. Looking over the accomplishments of our members, I am excited to see how we are making significant strides in multiple arenas. As scientists, our scientific accomplishments are being recognized at this year’s Joint Meeting with numerous travel awards, an increasing number of poster presentations, and the opportunity for several student trainees to provide oral presentations.

Outside of the Annual Meeting, our members are also being recognized by extramural sources such as the AMA Foundation Seed Grant. As leaders, our members are actively involved in outside organizations, such as the American Medical Association, the American Medical Student Association, and the American Medical Women’s Association, while concurrently ensuring that APSA thrives at the local level through our slate regional meetings that are planned for the upcoming year. One of my goals as we transition into a new Executive Council is to reach out to our Intuitional Representatives to learn more about the numerous scientific and leadership achievements of our APSA members at each institution.

In order for our organization to improve its ability to serve as a resource for tomorrow’s physician-scientists, I ask you to think about how you can best serve this organization. Each of us has a number of constraints on our time; however, your commitment to APSA can take on a variety of forms. For instance, consider serving as an Institutional Representative or applying for a Standing Committee; perhaps you can assist in the planning of one of our upcoming regional meetings that will be held this autumn; or you can serve as an APSA spokesperson at your home institution by encouraging your classmates to explore APSA, become a member, and attend our national meetings.

While our organization is still relatively young, I feel strongly that our membership is what distinguishes us as an organization. As we strive to offer a variety of opportunities and programs that highlight our principles of mentorship, networking, and outreach, I encourage you to regularly explore the resources that APSA provides throughout the year. As our organization continues to grow and mature, I am eager to work with all of you to ensure that your concerns are heard while actively striving to ensure your new ideas are incorporated into our overall plan of action for the 2010-2011 year.

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**Book Review: The Vanishing Physician-Scientist?, Andrew I. Schafer (ed).**

Daniel Matson, University of Virginia School of Medicine

The chapters themselves address the mentoring of physician scientists, the attrition of students from MD/PhD programs, generational contrasts within the physician-scientist community, translational medicine and the physician scientist, and just about anything else you could want to know about a career in clinical research.

All of the chapters are written by experts in their respective fields, so you can be sure that the most pertinent studies are cited and analyzed, with the most relevant facts and information laid out in layman terms. One of this reviewer’s favorite chapters is “Women as Physician-Scientists”, contributed by Dr. Reshma Jagsi and Dr. Nancy Tarbell. It discusses the current state...
A PSA is delighted to highlight the distinguished career of Dr. Joseph L. Goldstein, MD, a Nobel Prize-winning geneticist and biochemist who pioneered the study of cholesterol metabolism.

Dr. Goldstein received his Bachelors of Science in chemistry from Washington and Lee University in 1962 and then completed his Doctor of Medicine at the University of Texas Southwestern Medical Center in 1966. Along with his close colleague, Michael S. Brown, M.D., Dr. Goldstein uncovered and characterized the fundamental role of Low Density Lipoprotein (LDL) receptors in extracting cholesterol from the bloodstream. This research identified the genetic lesion that causes familial hypercholesterolemia and characterized a new mechanism by which cells take up material from the extracellular environment—a process they coined “receptor-mediated endocytosis.” For this work, Goldstein received the Nobel Prize in Physiology or Medicine and the Albert D. Lasker Award in Basic Medical Research in 1985 and the U.S. National Medal of Science in 1988. Furthermore, Brown and Goldstein’s research lead to the development of statins, which are used by more than 30 million adults worldwide to treat hyperlipidemia and are currently the most widely prescribed pharmaceutical class in the United States.

Current research in the Goldstein and Brown laboratory is focused on a family of transcription factors called sterol regulatory element-binding proteins (SREBPs) that regulate the synthesis of cholesterol and fatty acids. Defects in regulation of SREBPs are known to contribute to the pathogenesis of heart attacks, obesity, diabetes, and cancer. On this subject and others, he continues to actively publish in high-tier journals including the Proceedings of the National Academy of Sciences, Nature Medicine, and Science.

Dr. Goldstein is a past president of the American Society for Clinical Investigation (ASCI) and is a member of both the U.S. National Academy of Sciences and The Royal Society. He is also on the board of directors of The Lasker Foundation and the board of trustees of the Howard Hughes Medical Institute. Dr. Goldstein is currently a Regental Professor and chair of the Department of Molecular Genetics and Professor of Internal Medicine at the University of Texas Southwestern Medical Center in Dallas, TX. Despite the fact that he has repeatedly been recommended for high-tier leadership positions in scientific administration, he has elected to continue to be active in basic science research and the training of postdoctoral fellows and graduate students.

Dr. Goldstein will be delivering a keynote address at the 2010 APSA Annual Meeting entitled “How to Solve a Scientific Puzzle: Clues from Stockholm and Broadway” on Friday, April 23, 2010.

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Translational Research: What are the advantages and where do we fit in?
Hung Doan, The University of Texas Medical Branch

I’m sure many have heard that MD-PhD students may someday be “doctor-doctors,” but besides having two degrees, what does it mean to be an MD, PhD, a physician-scientist? Ultimately, the goals of many if not all MD-PhD Training Programs is to train competent physician-scientists and physician-scholars. In turn we first entered these programs inspired by the goals of alleviating human suffering not only through directed patient care, but also through our talents and interest in biomedical science and research.

The National Institutes of Health, in an effort to improve the clinical and translational research enterprise in the United States introduced the National Clinical and Translational Research Awards (CTSA). Presently 49 sites have been awarded CTSA’s with the intention of awarding a total of 60 CTSA’s through peer-review. While 49 sites are up and running with each site uniquely engaging its home academic medical center and local community, the sites also form the CTSA Consortium— as yet another layer for the sites to engage and exchange information and ideas. The eventual goals of these sites are to make biomedical discoveries more relevant not only to the bedside but beyond, to the community. In a recent review of the first three years of the CTSA initiative, authors Robert Califf, MD and Lars Berglund, MD, PhD writing for Academic Medicine state that through this cooperative agreement mechanism, NIH and CTSA sites can, “link investigators in a robust network for sharing best practices and implementing national, trans-CTSA initiatives,” in order for the CTSA initiative to truly transform the way that biomedical research can translate into patient-oriented best-practices¹.

While the NIH’s CTSA initiative focuses on institutional and inter-institutional cooperatives, translational research still begins with a medically relevant question from the bedside which goes to the bench and stems from the curiosity of the investigator. In an effort to engage the next-generation of curiosity-driven investigators, many medical schools have implemented required scholarly activities into their medical school curricula. Still others have offered elective credits for medical student research, and still others offer dual degrees, such as the MD-PhD combined degree programs but also offering masters in varied topics from business administration to public health. For instance, Stanford University School of Medicine has argued that “the best doctors are those who are medical researchers.” All in all, the prevailing goal of these expanded curricula are to encourage scientific inquiry. Indeed training in the rigorous of scientific and scholarly training seems part and parcel in the overall training of physicians culminating in not only a knowledgeable caretaker but one who is curious and motivated enough to pursue important questions for the benefit of medicine and humanity.

Just what is Translational Research? Dr. Doris Rubio and colleagues have addressed this question by addressing how training programs could structure translational research as bi-directional where translational research does not only offer bench-to-bedside advantages but also how such research, “moves in a bidirectional manner from one type of research to another”².

(See Translational Research on Page 7)

F30, A Physician-Scientist Trainee Lifeline: Survey Identifies Funding Gaps
Jennifer Kwan, University of Illinois College of Medicine at Chicago

From smallpox and cholera to cholesterol biosynthesis and retroviral oncogenes, physician scientists have played a central role in research, advancing breakthrough innovations in the understanding and treatment of human disease. As academic, industrial and governmental leaders mull over the state of the nation’s biomedical research engine, the jeopardized survival of today’s physician scientist in training must be addressed in order to preserve and revitalize the physician-scientist workforce of tomorrow [1-3]; disappearance of physician scientists from the front lines of biomedical research pursuits would debilitating both the biomedical research enterprise as well as advances in medicine [4]. APSA’s F30 survey results help confirm that one such jeopardy comes from shortfalls in NIH NRSA F30 predoctoral funding and revealed significant funding gaps across a spectrum of biomedical disciplines.

An Endangered species
It has been recognized that the current pool of physician scientists has grown very little in recent years and is decreasing by some estimates [5]. Physician scientists, in some accounts, have become “an endangered species” due in part to the financial burden incurred from debt deferred from undergraduate studies and accrued during the extended training period in relatively underfunded predoctoral and postdoctoral programs. Thus, funding of the physician scientist pipeline at all training points is critical. In recent years, the NIH has advanced several successful funding initiatives such as the Loan Repayment Programs (LRP) and a variety of career development (K) awards that are aimed at aiding individual graduates and young faculty members [5]. At the predoctoral level, obtaining independent predoctoral fellowships such as the NIH NRSA F30, decreases the loan/debt burden of an (See F30 Survey on Page 6)
of women in the clinical research enterprise, the shortage of female principle investigators in academic research centers, and the unique choices that women encounter during their education and career. The authors paint a sobering picture, and they argue that academic research centers lack a basic support structure for women faculty to help them through important transition points in their careers. However, they overreach a bit when they suggest new grants specifically for women returning from child rearing, institutional money to pay caregivers when female investigators must leave town for professional reasons, and mandatory educational sessions for faculty to educate them about unintentional gender bias. Still, Jagsi and Tarbell make their point, which is that having more women physician-scientists benefits the whole system, and there are common sense steps centers can take to relieve some of the added challenges experienced by women, especially as they are first beginning to build their career.

Finally, it bears mentioning that Vanishing is so much more than a compendium of facts. Sure, the reader will be exposed to the important studies, findings, and statistics. However, all of the contributing authors are physicians or researchers themselves, and although they do their best to let the facts fall where they may, they also lend the reader the kind of invaluable advice that comes only with experience. In this way, the book can really serve as both a reference and a guide for both the student and the educator. Bottom line: Vanishing should be required reading for all fledgling clinical researchers and those educators who seek to prepare their students for this challenging but rewarding career.

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AAPS—The Leadership Experience
Ivayla Geneva, State University of New York Upstate Medical University

The American Physician Scientists Association is a national organization with strong collaborative ties to the Canadian, French, and Swiss physician-scientist organizations as well as to many of the US-based medical research associations. But does the average AAPS member realize how different AAPS is from all other big national scientific organizations? Isn’t it amazing that AAPS is run by students at all of its administrative levels? From the institutional representatives to the standing committee members to the executive council officers, yes even at our Board of Directors level we have plenty of student involvement!

So how is this made possible? How does AAPS help a student like yourself, learn, grow, and become a great leader at the national level?

Well, the truth is that it takes significant effort from both the student volunteer who has just begun their AAPS experience and from the current AAPS leadership that will serve as their mentors.

Traditionally, most new AAPS leaders begin as Institutional Representatives (IRs) for their respective medical schools. This can be a rather joyful experience where the IR is provided with information about the organization and its activities, information which the IR disseminates to the students at their institution. Through giving PowerPoint presentations about AAPS at their medical school, the IR can greatly increase their personal visibility in their local scientific and medical community. As an IR all your actions are fully supported by the AAPS higher leadership such as the Membership Committee and Public Relations Committee—you receive written materials like PowerPoint presentations and brochures to use, you are provided with surveys that will help AAPS National learn more about the issues and needs of physician-scientist trainees, you are offered guidelines and “projects-in-a-box” that you may carry out at your institution. And yet, AAPS’s IRs are given lots of flexibility and encouraged to contribute their own ideas and create their own activities for which AAPS is very likely to offer support. In fact, the most motivated IRs may even form a local AAPS chapter.

Moving one level up, there is the wonderful opportunity to serve on one of AAPS’s standing committees—Annual Meeting, Finance, Public Relations, Policy, or Membership Committees. As a committee member, you will learn more about the details of how AAPS operates as an organization, how major projects are planned and carried out and most importantly, your committee’s chair and vice chair will serve as your mentors. They will teach you not only what tasks your committee needs to accomplish each year, but also how to accomplish them efficiently, how to think critically and improve the yearly projects, how to turn new ideas into new projects, and much more. You will learn what probably is the most important aspect of leadership, namely the skills needed to create trusting relationships with the people you work with and approaches to motivate them to do what is needed for the success of your team.

Another intriguing leadership opportunity presents itself during the fall of each year. If you happen to live near one of the cities where AAPS holds its Regional Meetings, you may consider getting involved and learning how to successfully plan and coordinate a live event that draws hundreds of attendees. This latter experience will shape you as a great candidate for leading the preparations for the AAPS Annual Meeting in

(See Leadership on Page 8)
F30 Survey (cont.)

already long training process as well as aids in career development by demonstrating that applicants can be successful in obtaining independent grants early on. Further, successfully obtaining an NRSA predoctoral grant is associated with less time to graduation, long term commitment to research and successful contributions to biomedical research as assessed by publication records [6].

Predoctoral Funding Gaps

Retinal Degeneration, Melanoma, Biomedical Engineering, Stem cell differentiation . . . these are examples of research topics that are not covered by NRSA F30 predoctoral fellowship granting NIH institutes. The NIH NRSA F30 predoctoral fellowship is an important predoctoral funding mechanism for physician scientist trainees. However, funding of predoctoral MD-PhD, DO-PhD students, much of which is available through the F30 award, is limited to 11 of the 26 NIH institutes & centers that provide research funding.

In response to member concerns over funding shortfalls, the APSA Policy committee developed the F30 survey and initiative: In the fall of 2009, the F30 Survey was administered through multiple channels, including email distribution via institutional representatives and the APSA website to MD/PhD and DO/PhD students representing all stages of training across the nation. The Survey aims to assess the need to expand NIH F30 predoctoral funding by identifying shortfalls in current coverage of biomedical research areas that MD/PhD, DO/PhD students are engaged in as well as the research areas of their future career goals. To date, >870 responses have been received (roughly 20% of the total trainee population), with >110 US medical institutions represented.

Insights from the F30 survey results

F30 Familiarity and encouragement to apply:

A majority of respondents indicated that they were encouraged to apply and indicated that they are familiar with the F30 grant.

Applying to the F30:

One third of respondents have applied for the F30 before, with nearly 40% saying that they had to modify the topic or aims of their proposed project in order to be eligible to apply for one of the available institutes.

Shortfalls in F30 coverage:

A majority of respondents have been told or found that their area of research is NOT covered by the current institutes involved in F30 funding. Close to 70% of respondents want to pursue research in an area that falls under the purview of a non-funding F30 institute, i.e. NCI, NEI, NIAMS, NIHGR, NIBIB, NIAID, NIGMS. Survey results and comments show that lack of F30 funding in these biomedical areas acts as a source of discouragement and have the unfortunate effect of hindering physician-scientist research pursuits across the full spectrum of biomedical inquiry.

F30 & career:

Of those who applied for the F30, a majority have indicated that obtaining a F30 grant has already helped them financially/career wise. On the horizons: The survey data is currently being analyzed by the APSA policy subcommittee members and will be used to advocate for the expansion of the F30 funding mechanism. To do so, we plan to engage and open discussion of survey results with NIH leaders. Additionally, we would also like to address other issues raised by the survey results i.e. non-resident eligibility and suggestions on applying to the F30, in future APSA events and meetings.

APSA greatly appreciates all MD/PhD, DO/PhD trainees who helped in our advocacy efforts by taking the F30 survey. Your responses are helping to raise awareness of the importance of such funding mechanisms, highlight the shortfalls of NIH F30 predoctoral funding and call upon the participation of all NIH institutes to ensure that physician scientists are supported and encouraged in research efforts that span the entire spectrum of biomedical disciplines.

From personalized medicine to regenerative medicine, physician scientists are poised to contribute to tomorrow’s medical innovations; but first, we must help ensure the tomorrow of physician scientists.

Acknowledgments: Many thanks to Mark Ziats and Carolyn Brokowski for their insights and help with the survey feedback and analysis this year as well as past APSA policy leaders, Eric Schuberger and David Ramsey for contributions to launching the F30 initiative.

References:


For more information about 2010 F30 funding mechanisms, navigate to:

familiar to you, I strongly encourage everyone to try to build new relationships, both with fellow trainees, and with experienced physician scientists who are eager to provide mentorship.

If we are to ensure the future growth and well-being of APSA, even a most successful Annual Meeting must be part of a larger process. Therefore, what we do here at the Annual Meeting should speak to our overall activities, and it is essential to extend some of our Annual Meeting experience to year-round APSA activity. In line with this, I urge APSA members to make every effort to meet with other members in your area, and to commit to and work on organizing local events. The APSA Executive Council is here to help, and importantly, we want to do this throughout the year. We encourage you to talk to us, and come to us for assistance anytime that you need help. Should you wish to go beyond the local level, we very much welcome anyone who wishes to participate in the work of APSA at the national level. So please let us know.

Together, we will continue to build our thriving organization, so that we can best serve the needs of all of our members, and to enhance the prospects for our discipline.

Translational Research (cont.)

other—from basic research to patient-oriented research, to population-based research, and back—and involves collaboration among scientists from multiple disciplines. In this conceptual framework, the training of future investigators must almost be individualized. As such training may require an immersion in clinical sciences if a trainee’s background leans more towards basic science and the vice versa may hold true for one whose background is more clinical. This may then allow for a more authentic bidirectional exchange of knowledge and information.

Indeed, this is an identifiable strength of those in combined degree MD-PhD programs. Typical MD-PhD trainees begin their academic careers by taking science basic to the practice of medicine in medical school (the basic sciences curriculum inherent to most if not all medical schools). In most cases, the MD-PhD student may take concurrent graduate courses, MD-PhD-specific enrichment courses, or other requirements which may be required by their associated graduate program. Then the trainee engages in rigorous PhD training where the he or she is exposed to the full breadth of the PhD experience culminating in the defense of a PhD dissertation. The trainee then returns to medical school and completes clinical clerkships to fulfill requirements for the Doctor of Medicine.

By completing this intense training experience, the trainee has accomplished the immersion in either discipline to the fullest and comes out with not only a license to practice medicine but also the ability to ask questions, develop a hypothesis, to test the hypothesis, and to elucidate conclusions and findings from such experimentation, and to see the project through to completion. Ultimately, after the trainee finishes his or her degrees, it is up to him or her to pursue translational research. With the nation moving forward with a commitment to the betterment of human health through the NIH’s Roadmap, the CTSA consortia, and myriad opportunities in translational research through private and institutional endeavors, it leaves little wonder where MD-PhD trainees may contribute to the goals of improving human health.

Ultimately, the ever-evolving goal of how to translate basic science discoveries—proven discoveries in the laboratory, into relevant and identifiable changes to patient care and best practices is the driving force for re-defining and refining the concept of translational research. Now it is up to the physicians and scientists to pursue rigorous research at the borders of science, medicine, and the community in order to make translational research not only a concept but a reality that reliably changes lives.

References:

the upcoming year, i.e. for becoming next year’s Annual Meeting Chair or Vice-Chair. Further, during the live events themselves there are multiple opportunities for initiating contact with and learning from the various leaders attending the events. In fact, during the 2010 Annual Meeting there will be, for the first time, a special session completely dedicated to mentorship—APSA’s Leadership Panel.

Having served on the APSA Standing Committees or Regional Meeting Teams, and having benefitted by the leadership example and mentoring from the higher APSA leadership, you may wish to move up within the organization and apply to be a committee chair, Member-At-Large, Vice-President, or even APSA’s President. These latter positions are very powerful in nature; however, they demand significant responsibility. Even when you reach the point where you feel confident and experienced enough to hold such a high leadership position within APSA, there will be times of insecurity and confusion. This is precisely the reason why, starting this year, APSA will strive to develop what we will call The APSA Leaders Alumni Group. It will comprise of people who have spent time at the higher levels of APSA leadership in previous years. The APSA Leaders Alumni Group will serve multiple important purposes for the organization and its members. First, it will provide a source of mentors for the current APSA leaders—an essential educational opportunity that will enable the quick growth and perfection of their leadership skills. Second, it will help us preserve APSA’s institutional history which will allow for an even more seamless year-to-year change of officers. Third, it will allow the organization to remain in contact with its retired leaders and through these connections, over the years, APSA will become stronger as organization.

As was mentioned in the very beginning of the this article, growing as a leader demands an effort and is a multi-step process. This is why at APSA we are committed to offer our members leadership opportunities at various levels of involvement and responsibility. What is of equal, if not higher value, is APSA’s commitment to provide mentoring to its future leaders as they learn and grow within our organization. So don’t hesitate to join APSA’s team of leaders—the opportunities are numerous, the help is genuine, and the overall experience is more than worthwhile!

Save the Date!

APSA Seventh Annual Meeting

April 15-17, 2011
Chicago, IL