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The Challenges Facing GI Investigators Today and What (More) the GI Societies Can Do to Help

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Much has been written recently about the serious challenges GI investigators face these days because of the increasing competition for National Institutes of Health (NIH) support to conduct biomedical research. Beginning in 2003, the NIH budget for digestive disease research has flattened and not kept up with inflation.¹ This translates into a declining success rate for grant applications, which is at its lowest in >30 years. As any investigator engaging in active research will attest, he or she is spending more and more time on writing and rewriting grant applications, and less and less time performing actual experiments. Young investigators trying to obtain their first R01 grant and midlevel investigators in the process of renewing their first R01 grant or obtaining a new second R01 grant, are particularly hard hit; as a consequence, they have the highest attrition from a career in research.²

A particularly vulnerable group in research is the physician scientists, defined as physicians who perform biomedical research as their primary professional activity. In the last 2 decades, the proportion of physicians who chose this career path has been steadily declining.³ A recent report indicated that physician investigators consistently experienced high rates of attrition, even after receiving a first R01 grant when compared with nonphysician investigators.⁴ Even more alarmingly, physicians who conduct clinical research were less successful in obtaining funding than those performing nonclinical research.⁴ Many reasons have been cited that might be responsible for this alarming trend. In addition to the recent difficulty in obtaining grant funding, reasons include increasing financial obligations, competition from the private sector, insufficient institutional support, lack of appropriate mentors or role models, and discouragement.

In addition to the worsening funding situations, the research community is facing other challenges. For example, many of the findings in basic science are now ripe for clinical application, but there are insufficient numbers of formally trained translational and clinical scientists to put the new information to use. Similarly, recent advances in drug discovery and new technology have tremendous potential, but are limited by the availability of capital for further development. Systems biology is becoming an increasingly important discipline that can be applied to numerous areas of biomedical research, but there is a lack of qualified non-biologists, including mathematicians, physicists, and computational scientists, to further advance the field. Stem cell research holds great promise in the field of regenerative medicine, but faces political and ethical barriers. In short, biomedical research is positioned to gain great strides in advancing medical diagnosis and therapies, but, at the same time, is subject to significant stress owing to the reasons cited.

It is without question that research is an enterprise that requires the combined effort of numerous parties, including the government, scientists, industry, and academic institutions, to safeguard its continuing success. A recent report by the Association of American Medical

Colleges called on the leaderships of academic medical centers to promote translational and clinical research.⁵ Increasingly, many successful academic medical institutions are using clinical revenue to invest in biomedical research and are emphasizing recruitment of research-oriented leaders throughout the institutions.⁶ The NIH has also implemented key changes in an effort to maintain as high a level as possible support for investigator-initiated research in an age of shrinking grant dollars.¹ Last, innovative methods have been proposed that will depend on the partnership between research institutions and industry.⁷ All are encouraging signs that should provide concrete assurances to the investigators of the institutional commitment to biomedical research.

What are the roles of major GI societies (the American Gastroenterological Association [AGA], American Association for the Study of Liver Disease, American Society for Gastroenterological Endoscopy, and American College of Gastroenterology) in promoting and propagating GI research? It is apparent that GI societies are and should be major stakeholders in maintaining the stability and assuring the further advancement of GI research. For example, the stated mission of the AGA is “to advance the science and practice of gastroenterology.” Moreover, as outlined in its most recent strategic plan by the Governing Board (see www.gastro.org/user-assets/Documents/10_About_AGA/strategic_plan_106_for_web.doc), a core commitment of the AGA is to expand the science of gastroenterology by actively pursuing support for research, education, and training to improve understanding of the causes, prevention, treatment, and cure of digestive diseases. Indeed, the major GI societies have already in place various mechanisms with which to support GI research. Take the AGA as an example; as managed by the Foundation for Digestive Health and Nutrition, research awards are available for investigators at various levels, including young and established investigators. However, in view of the tightening NIH budget, the question becomes whether the GI societies can do more to support GI research. The answer is an unequivocal “yes.” Herein, I outline potential steps that the GI societies could undertake to further their support of GI research. Again, I use the AGA as an example because of my familiarity and involvement with it.

As an organization that encompasses both research and clinical practice, the AGA is ideally situated to exert significant influences with which to fulfill its core commitment to expand the science of gastroenterology. First, the AGA Institute could become an even stronger advocate for GI research by expanding its capability as a granting agency. The AGA Institute could increase its fundraising efforts from private, philanthropic, and industrial sources to enable it to fund additional research projects. More resources will help to bolster some of the AGA Institute's vastly popular programs such as the Research Scholar Awards and the Bridging Grants, and may render the AGA Institute a major granting institution that mirrors other established disease-specific organizations such as the American Heart Association and American Cancer Society.

Second, the AGA could engage in increased active pursuit of policy and advocacy at the national level. The Public Affairs and Advocacy Committee has been very successful in doing this and the formation of the National Commission on Digestive Diseases is a shining example of the AGA's effort in influencing policy. However, the AGA could enhance its effort by encouraging its members to become more politically involved in a manner similar to other societies, such as the Federation of American Societies for Experimental Biology and American Society for Biochemistry and Molecular Biology. The AGA could also encourage its members in establishing dialogues with the recent NIH effort to revise the Peer Review system (see, for example, the recent announcement by Dr Elias Zerhouni, Director of the NIH; www.nih.gov/about/director/newsletter/Summer2007.htm).

Third, the AGA Institute must continue to invest in training and education, for not only the mentees, but for mentors as well. Mentorship sometimes takes a back seat in today's busy

environment, but must be encouraged and sustained to propagate the next generation of GI researchers. The AGA Institute has been successful in engaging trainees and young investigators in meetings such as the Academic Skills Workshops and MD/PhD Workshops, but could expand its realm of involvement by supporting workshops designed to train established investigators, namely, “teaching the teachers how to teach.”

Fourth, the AGA Institute must continue to invest in future trends and technology as it is currently doing with the Future Trends Committee, which is designed to study and make recommendations in these fields. Last, the AGA Institute must engage the international scientific community at large in a global effort to advance GI research and GI-related world health. Liaisons between the AGA Institute and numerous international GI organizations have been formed, but could be further enhanced with regard to meaningful scientific collaborations and exchanges within the international GI community. For example, networking of young investigators from different countries is a good direction because they are the future leaders in GI research.

In summary, abundant challenges lie ahead in the GI research arena. At the same time, these challenges present themselves as remarkable opportunities that the GI societies could take advantage of in advancing their missions. If the societies could successfully implement some of the programs suggested, the future of GI research is bound to be full of tremendous excitement and potential with which to advance the practice of GI medicine.

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