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Director's Matters

By H. Frederick Dylla, Executive Director & CEO



Starting out

Science has a lot to gain from early-career scientists. Those just embarking on a life of scientific discovery have a strong mix of drive, creativity, and willingness to take certain risks. These factors together increase young scientists' potential to make significant contributions to science and to the nation's economy—under the right circumstances. This latter parameter is key. In today's economy and scientific establishment, specifically in the United States but also in many other countries, early-career scientists are not afforded the opportunities befitting their potential.

Recovery in the jobs market from the current nearly worldwide recession has been painfully slow. The job market for scientists varies greatly according to the field of expertise and experience requirements.

I've noticed that for the physical sciences, the classified advertising section of AIP's flagship magazine *Physics Today* is a fairly accurate indicator of the job market. The advertising volume ebbs and flows consistently with economic cycles. It always seems to shrink roughly one-quarter before a recessionary cycle hits and begins to grow about a quarter before the primary economic indicators signal recovery. The fact that the classified volume has remained flat for the last three years reflects what we are seeing in the economy overall.

So what does this mean for the prospects of freshly minted scientists just emerging from an advanced degree program?

When I was entering the physical sciences job market in the mid-1970s, I and my fellow graduates had several opportunities in three sectors—national labs, industry, and the traditional academic path of a postdoctoral appointment in a university. The latter choice remains the favored one if a student wishes to follow their university faculty and mentors. In the current climate, however, many universities are seriously considering their cost structures. Hundreds of applications pour in to fill too-few new positions. Those fortunate enough to land these coveted positions are not only expected to carry heavy teaching loads, but must also fund their fledgling research programs with external grant funding—a commodity that is becoming increasingly hard to secure.

At best, congressional appropriations to US funding agencies will continue to be flat—and significant cuts could occur if Congress cannot avoid the sequestration cuts put in place in 2011. A young scientist's success of landing their first grant has a low probability. For example, recent data from the NSF show that the probability of winning a start-up grant is about 17%. The probability with NIH, the largest funder of basic research in the United States, is similarly disappointing at about 15%.

A few decades ago, young scientists were particularly attracted to national laboratories such as those run by DOE, NASA, or DOD, where research funding is usually provided as part of the larger laboratory program. I spent my formative years as a working scientist at DOE's Princeton Plasma Physics Lab, and my research was well supported. I could concentrate on doing science and building my career on rapidly accumulated scientific results. But today these institutions have been hampered with additional oversight and regulation, thus increasing overhead and decreasing funds for research. Prospects for new scientific staff are constrained as a result. (A June [article in Science magazine](#) discusses the latest national panel convened to examine DOE lab operations in an attempt to cut down on bureaucracy.)

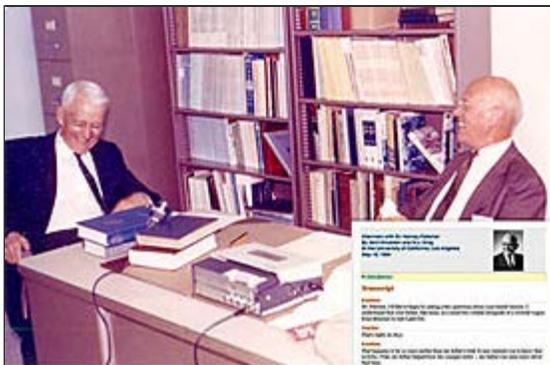
The other viable career option a generation ago was industry. Many large companies still maintained central research laboratories, and they valued and courted energetic new employees in the sciences. Industry is still a productive and important option for many graduates from science and engineering programs, although there are few opportunities to engage in long-range applied research. Industrial jobs predominately involve product development or business functions that require the knowledge base and the critical thinking attributes that graduate training in science brings.

Several US agencies, associations, and institutions sponsor early-career opportunities for budding scientists. Overseas, other entities target this demographic as well, such as the European Research Council with its [starting grants](#) program and Sweden's [Wallenberg Academy Fellows program](#).

Investment in scientists is a long-term prospect. It is essential that we increase our investment in early-career scientists. That investment will pay huge dividends in scientific breakthroughs, which in turn will be the foundation for new products and economic expansion.

Physics Resources Matters

Over 1,000 oral history interviews now online



From the left, Harvey Fletcher is interviewed by Vern Knudsen in 1964. Inset shows online transcript. Courtesy of Emilio Segrè Visual Archives.

The Niels Bohr Library and Archives (NBL&A) staff is proud to announce that they now have over 1,000 oral history interview transcripts online, which is the largest web-based interview collection in the sciences. Staff members Nancy Honeyford, Stephanie Jankowski, Beth Emmerling, Barbara Allen, and Amanda Nelson (project manager) placed 503 transcripts and 50 audio clips online over the past two years and made all of the interviews full-text searchable.

This milestone successfully completes NBL&A's most recent National Endowment for the Humanities (NEH) grant, on time and under budget. Two NEH-funded oral history grants over the past five years have enabled NBL&A to post 1,028 transcripts and 75 audio clips—over two-thirds of its entire oral history interview collection—online for greater access. Staff continue to conduct and receive interviews with important members of the physics community.

The NEH grant also enabled NBL&A to send over 550 audio cassettes to The Cutting Corporation in Bethesda, MD, for preservation and digitization. Please check out this wonderful resource on the

[NBI&A website](#), and learn something new about a famous physicist.

Member Society Spotlight

New APS/AIP Fellowship for Science Education



APS and AIP have partnered to establish a joint fellowship at the US Department of Education (ED) within the Office of Planning, Evaluation, and Policy Development. The fellow may be tasked with conducting research and developing metrics to assess the impact of various ED initiatives, exploring emerging issues in P-12 education, higher education, career and technical education, and teacher preparation. Other potential areas of focus may include developing policy priorities for proposed education programs or conducting legislative research and identifying partnerships between ED and other federal agencies, state and local governments, and the private sector. The fellow will be a PhD-level member of one or more AIP Member Societies and will ideally have a background in physics education research.

Interested applicants should submit their cover letter, curriculum vitae, and a list of references by September 20 to Tyler Glembo at Glembo@aps.org.

Sponsoring such fellowships has been one of the longstanding roles of AIP and its Member Societies in furthering policy development at the federal level. APS, AIP, and other MSs offer additional fellowships, including fellowships in Congress and at the State Department. Those fellows have contributed to policy development in a wide variety of areas, including agriculture, human space flight, intellectual property, nuclear power, energy, environment, and homeland security.

Around AIP

Corporate Secretary Designate



Judith Flippen-Anderson has been selected as corporate secretary designate for AIP. She will serve in this capacity until the Governing Board can consider a formal appointment when it convenes on November 12. Judy has been a dedicated volunteer to the American Crystallographic Association throughout her career and has served on many AIP committees, including the Governing Board and the Executive Committee. [Read more about Judy](#) on the AIP leadership webpage. Please welcome Judy to AIP.

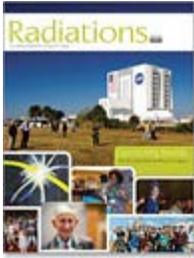
ACP Blood Drive

ACP invites all employees to donate blood on Wednesday, October 2. Every donation can save up to three lives. Help us meet our goal to collect at least 20 units. Snacks are provided by the American Red Cross. All donors will be entered into a raffle drawing. To sign up, contact [Amanda McMath](#).

For additional information about donating blood, visit www.redcrossblood.org.

Off the Press

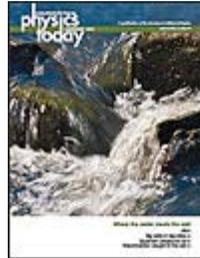
Radiations magazine



This issue covers the content and events of the 2012 Quadrennial Physics

Congress, hosted by Sigma Pi Sigma in November 2012. This three-day gathering, dubbed “PhysCon,” brought together more than 800 people in Orlando, FL, and inspired a new generation of scientists.

Physics Today, September issue



Cover: Turbulence has famously been called the last great unsolved problem of classical physics. Determining the details of energy and momentum transport is even more challenging when turbulent fluids are confined by solid surfaces—such as the inner walls of a pipe or the rocky terrain of a

riverbed. To learn how recent experimental advances might improve our ability to understand and simulate such wall-bounded flows, see the article by Alexander Smits and Ivan Marusic. (Photo by Stefan Kaben.)

Coming Up

September 10

- Learning Together. SSP webinar: *Eliminating Print...really?!* (Melville)

September 11-13

- ALPSP 2013 Conference (West Midlands, United Kingdom)

September 11

- Birthday breakfast (College Park)

September 12

- Birthday breakfast (Melville)

September 17

- First aid training (Melville)

September 17-19

- 2013 PT Sales & Marketing meeting (Linthicum Heights, MD)

September 19

Learning Together. John Dabney of McDermott, Will & Emery will discuss intellectual property and the publishing industry. (Melville)

September 19-22

- SPS Executive and Council meetings (Crystal City, VA, and College Park, MD)

September 25-26

- Individual counseling sessions with TIAA-CREF (College Park)

September 26

- Investment Advisory Committee meeting (Chicago, IL)

September 27

- ISTV's Underwriters meeting (College Park, MD)

October 2

- ACP Blood Drive