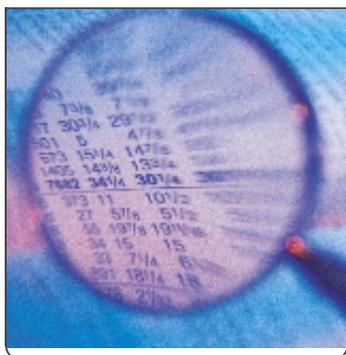


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 Issues & Perspectives

The Job Outlook for Physician-Scientists

Susan Voglmaier describes herself as "the last one standing" in academic medicine from a residency class that included six M.D.-Ph.D. students. Voglmaier, a new assistant professor of psychiatry at the **University of California, San Francisco** (<http://psych.ucsf.edu/>) (UCSF), is the only one of the six to choose a career in academic medicine. The others are either working in private practice or working in pharmaceutical industry jobs.

Voglmaier's M.D.-Ph.D. colleagues chose other career paths despite the fact that prospects in academic research are excellent for the approximately 500 M.D.-Ph.D. graduates who emerge each year from an arduous 9- to 10-year training period and decide to stay in academia. In stark contrast to many areas of academic science, researchers with clinical degrees have good jobs waiting for them at the end of their long roads, say administrators at the nation's academic medical programs. "The positions are there," says Richard Rudick, vice chair of neurology at the Cleveland Clinic Lerner College of Medicine of Case Western Reserve University. The problem is that "there's somewhat of a lack of qualified applicants for those positions."

Rudick's experience corroborates from the results of a survey of 837 clinical department chairs conducted by the **Association of American Medical Colleges** (<http://www.aamc.org/>) (AAMC) in 2005 and published in 2007. Nearly two-thirds of the responding department chairs reported having junior faculty openings. More than half (52%) of those with openings reported that they were not able to fill all their open positions.

The issue is two-pronged. For those with very marketable degrees in clinical medicine, the lure of private practice and industry can be strong; three of Voglmaier's colleagues opted for research careers in the pharmaceutical industry, whereas the other two chose private practice. Deeply committed scientists like Voglmaier are proving hard to find as attrition exacerbates a shortage of clinicians interested in academic research careers. But the second and perhaps deeper problem is that "there simply aren't enough of them," says Lawrence "Skip" Brass, associate dean and director of the **physician scholar program** (<http://www.med.upenn.edu/mstp/>) at the **University of Pennsylvania (Penn) School of Medicine** (<http://www.med.upenn.edu/>). Brass recently led another AAMC survey, this one of M.D.-Ph.D. graduates, to find out where they end up and to assess the pipeline of trainees.

All told, there seems to be a surplus of training slots for physician-scientists and plenty of job openings for clinicians who want to do research. That means excellent career prospects in academic medicine. But that doesn't mean that finding the right job is easy. The usual problem of matching the candidate to the opportunity still applies. Despite a happy outcome, Voglmaier herself is a good example of how the struggle to find the right position can play out. "Although there are many departments that do great clinical research, the pool of those that support basic research, which is what I do, is much smaller," she says.

"You have to be successful in the lab, but by the same token a major part of your research is driven by the care of patients. So you have to find a way to do all of that and still be able to sleep." --Dan Cahill

Under capacity

The results of the AAMC survey, which are still being prepared for publication, suggest that nationwide, a steady but inadequate number of students are enrolled in the 110 M.D.-Ph.D. programs, which are designed to prepare the next generation of clinical and translational researchers. Out of about 500 annual graduates, some 400 choose careers in research, about 270 of those in academic medicine. It's a better ratio than in Voglmaier's class, but the attrition is still too large, administrators say. Considering all the medical subspecialties that exist, Brass says, attrition leaves a very limited talent pool in any one area.

The AAMC's numbers corroborate what has become conventional wisdom among program directors: Not enough people are choosing to go the M.D.-Ph.D. route. Last summer, at a meeting of M.D.-Ph.D. program directors, Brass reports that someone asked, "Who felt they had the resources to train more M.D.-Ph.D. students but weren't getting enough qualified candidates?" "Hands went up all over the room," Brass says.

Those empty training slots are occurring even as the **National Center for Research Resources** (<http://www.ncrr.nih.gov>) (NCRR) in Bethesda, Maryland, part of the National Institutes of Health, is making a \$500 million investment in a network of 60 clinical and translational science-training centers to be funded by 2012. The goal is to bring more people into clinical research at each institution, at an earlier stage of training, says Barbara Alving, director of NCRR, which administers the **Clinical and Translational Science Awards** (<http://www.ctsaweb.org/>) (CTSAs).

Rudick, who is co-principal investigator of Cleveland Clinic's CTSA program, says the CTSA movement will increase clinical and translational research capacity by drawing in researchers who have not been previously involved in clinical research and by exposing students to clinical research at an earlier stage in their careers.

This pipeline problem has mobilized the M.D.-Ph.D. program directors, Brass says. Most are developing outreach efforts geared toward demystifying translational-research career options for college students. Brass says that a major selling point for M.D.-Ph.D. programs is that the odds of having a meaningful career as a physician-scientist are quite high compared with Ph.D. scientists in other fields, in which competition for jobs in basic science departments is intense.

The right fit

Many of those who complete the M.D.-Ph.D. process, which typically takes 7 to 8 years and is followed by a 2-year medical residency, end up choosing among several job offers. Still, every physician-scientist career has a unique balance of clinical and research duties, so it can be challenging to find a position that's a good fit for a clinician's practice and research specialty. Daniel Cahill, a surgical resident at **Harvard Medical School** (<http://hms.harvard.edu/>) in Boston, found that as a neurosurgeon who also conducts translational research, he had his pick of jobs. But he estimates that no more than 10 institutions in the United States offered an environment in which he would have time to do research in his specialty--the genetics of brain tumors--as well as surgical practice.

"The tricky part is trying to find a place where you can get general exposure to patients and focused, protected [research] time," says Cahill. "You have to balance how you are going to set all that up. You have to be successful in the lab, but by the same token, a major part of your research is driven by the care of patients. So you have to find a way to do all of that and still be able to sleep."

Cahill spent a year evaluating his job prospects. He applied for about 10 positions, interviewed for five, and ended up accepting an offer at **M. D. Anderson Cancer Center** (<http://www.mdanderson.org/>) in Houston, Texas. He starts his new job in February. Cahill says he felt M. D. Anderson best matched his professional criteria and offered him a glimmer of hope at having a personal life. At age 38, Cahill, like many of his peers who have spent so much time in training, has started a family and wants to make sure he will have time to spend with them. "That was a big factor," he says.

Given the difficulty of finding the right balance of clinical and research opportunities, many M.D.-Ph.D. trainees are opting to remain at the institution where they did their residencies. By the time physician-scientists reach a point when they are looking for jobs, they have settled on a narrow research interest. Consequently, the number of places that offer support for their specific circumstances is very limited. Voglmaier's situation seems typical.

Voglmaier conducted a national job search in the 2nd year of her medical residency--scanning job ads and calling department chairs in psychiatry departments that support



basic research--and applied for 10 positions. In the end, she chose between two places and found the best fit right where she started, at UCSF. The medical school had a program to support young investigators. It offered flexibility in her clinical responsibilities, allowing her to see patients whose conditions align with her interest in the basic biology of schizophrenia, and it was among only a few institutions with an interest in basic research within a clinical psychiatry department.

Similarly, Jay Dorsey, a radiation oncologist who trained at Penn's School of Medicine, found institutional support and protected research time at his alma mater that could not be matched elsewhere. "Certainly, if you have had success at a place and it's a good fit for you, a lot of times you have an advantage in that you know how everything is structured, you are already set up, and you can kind of hit the ground running," says Dorsey, now an assistant professor at Penn. "To be realistic, you don't have much time to get your papers published, to get your laboratory up and running, and your grants submitted. So if you move to a new institution and spend 6 months getting all these things done, it's really a big chunk of time out of your initial evaluation phase."



Courtesy, Susan Voglmaier

Susan Voglmaier

The job search



Courtesy, Rene Galindo

Rene Galindo

Although more clinically trained scientists are staying at home, Rene Galindo, an assistant professor of pathology at the **University of Texas (UT) Southwestern Medical Center** (<http://www.utsouthwestern.edu/>) in Dallas, advises his students to make changing institutions as easy as possible if the need arises. That means building their curricula vitae at each stage of training. Galindo, who trained at UT Southwestern and in the pediatric pathology department at **Johns Hopkins Hospital** (<http://www.hopkinsmedicine.org/>) in Baltimore, Maryland, also advises making sure the institution you choose can provide adequate support for the work you intend to do. He says he probably would have stayed at Hopkins except that his mentor left, taking most of the institutional support for his specialty with her.

"A lot of people, I think, are looking at the job search a little bit like I did, which is to say you've been training for so long, you're kind of ready to grow up, and you're looking for a place that will answer everything for you," he says. Unfortunately, "you're probably not gonna find it." He advises his students to take things one step at a time and cultivate good connections with the places they think are the best fit. Let's face it, you are looking for a specialty job," he says. "You keep your fingers crossed and hope for the best. I feel very fortunate; let's put it that way."

Photos. Top: Comstock Business Impacts. Middle: Courtesy, Susan Voglmaier. Bottom: Courtesy, Rene Galindo.

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