



Where Are the Jobs for Researchers?

Earning a PhD in biomedical sciences does not necessarily lead to a career in research. For those who have invested five to seven years earning the degree, plus another two to four in a post-doctoral position, this may spell disappointment and problems in the job world. In 2014, the National Institutes of Health (NIH) selected seven institutions across the country—among them Rutgers Graduate School of Biomedical Sciences (GSBS) in collaboration with the Rutgers Center for Innovative Ventures of Emerging Technologies (CIVET)—to figure out what to do. **BY EVE JACOBS**

The job market for biomedical researchers is shrinking and that's not new. Studies looking back 20 years have confirmed diminishing career opportunities for academic researchers as well as industry researchers, leaving some PhDs high and dry when it's time for a job search. Most have invested at least eight years preparing for their careers.

The BEST (Broadening Experiences in Scientific Training) award to GSBS and CIVET comes with a \$2 million grant to forge full-speed ahead to better understand the problem and figure out solutions. It will underwrite innovative initiatives to help redirect at least some of these doctoral students into other related areas. "We need to come up with new nonacademic, non-research possibilities that still use the students' scientific training," says Stephen Garrett, PhD, Associate Dean of Student Affairs at GSBS and associate professor of microbiology, biochemistry, and molecular genetics at NJMS and one of the co-directors of this program, "because those are the only jobs that are increasing."

He says that less than 25 percent of biomedical research students currently find jobs as academic scientist-researchers. This means, of course, that more than 75 percent do not. Faculty currently wrestle with tough questions regarding the PhD programs, including: Should the numbers of students going on for PhDs be reduced? In fact, that is happening across the country. However, "We know that is only part of the solution, since we have no sure-fire way to know who will go on to be successful in academic research," says Garrett.

"Other questions include: Are there other jobs where the doctorate in research is useful and how should we advise students concerning these other jobs?" he continues. But the answers to these questions are often beyond the expertise of faculty, according to Garrett, since most faculty have spent little, if any, time outside of academe and the job picture is constantly changing.

Interdisciplinary Job Opportunities for Biomedical Scientists—or iJOBS—is a



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Rutgers program that will develop strategies to get a grip on the job problem. Phase 1 of the program will look at “what’s out there for our PhD students and postdocs,” Garrett says. Brown bag networking lunches will feature small panels of researchers working in “alternative careers,” who will speak to students about their jobs and how they got there. At the session on January 20, which was held on the Newark campus, five speakers with very different portfolios demonstrated the applicability of technical and science degrees in the work world:

- **James J. DeCarlo**, with a degree in electrical engineering and a JD, specializes in intellectual property law; much of his work relates to his background in engineering.
- **Sidnee Pinho** earned undergraduate degrees in systems engineering and finance, and a master’s degree in marketing and finance. She is currently head of business strategy and management at Huron Life Sciences.
- **Alexander Habib**—who earned a master’s degree in health policy—is a manager of public affairs and communications for Johnson & Johnson.
- **Barbara Gladson**—with an MS in physical therapy from Columbia and a PhD in

pharmacology from GSBS—is director of the Rutgers Biopharma Educational Initiative/MS in Clinical Trial Sciences. She is also a professor of pharmacology at GSBS and at the Rutgers School of Health Related Professions.

- **Robert Goldberg, PhD**, is vice president and co-founder of the Center for Medicine in the Public Interest. Along with Peter Pitts, he hosts a controversial blog on the pharmaceutical industry and health care at www.drugwonks.com

Gladson told students: “Bringing to market new drugs and devices has become a complex process requiring the skills of specialized and talented clinical research professionals.” It is an opportunity that some GSBS doctoral students may find intriguing.

“What we have here in New Jersey are lots of pharmaceutical and biotech companies,” states Garrett. So, in the spring, student site visits will be arranged at these companies in



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five different tracks: industry development and business management; clinical and regulatory testing and support; intellectual property management; health data analysis; and science and health policy. GSBS in Newark and Piscataway currently trains 500 PhDs spread out over six years, plus postdocs, who are spread over three years.

“We train students and post-docs to conduct research,” says Garrett. “We—like simi-



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lar schools—have been preparing doctoral students and post-docs to take over a lab.” But for many, that model no longer works.

An eight-part course called SciPhD, which started on February 9, will focus on the “business of science,” including leadership styles, networking, negotiation, project management, finance, and communication and business skills for scientists. It is scheduled for three Sundays and five Monday evenings and will be offered every year for third-year students. This year it will also be offered to fourth- and fifth-year students.

“Some students may only benefit by finding out that going into industry or an alternative career is not what they want to do,” says Garrett, “but management and interviewing skills and hearing people’s ideas about how to get a job will be useful no matter what career path they choose.”

That’s Phase 1 of the program, says Garrett. In Phase 2, the students choose an industry track from one of the five different tracks and are paired with a GSBS mentor from that track who will meet with them a couple of times a year. The mentor may advise career-specific training for the student. For instance, if the student is interested in managing clinical trials, specific coursework in pharmaceutical management at a business school may be advised, according to Garrett. Students will also have the opportunity to

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Surgeon with a New Mission

Justin Sambol, MD'97, associate professor of surgery, chief of the Division of Cardiothoracic Surgery, and vice chair of the Department of Surgery, was named senior associate dean for clinical affairs in January. His new duties will include overseeing the clinical operations of NJMS and growing the clinical practices of the medical school, as well as interacting with University Hospital (UH) on clinical agreements that affect both NJMS and UH. He will address issues arising between NJMS and its clinical affiliates, and will "broaden the medical school's footprint as much as I can while also continuing the care we have always given the medically needy of the city of Newark and surrounding areas," he says.

While his new responsibilities are crucial to the future of the medical school, Sambol intends to "continue as a practicing surgeon. That's my life." But this surgeon also has a sharp interest in the business side of medicine, and hopes to apply what he learned as past treasurer of University Physician Associates of New Jersey, the faculty practice of NJMS, as president of the NJMS faculty organization and president of the medical staff of UH. "I want to focus my skills in one job where I hope to make a difference," he says.

Sambol earned his BA in neuroscience from the University of Pennsylvania, where, he says, his roommates went to the Wharton School of Business and he absorbed a lot of knowledge (outside of the classroom). His father owned a small construction company in Jackson, so business concerns were often dinner-table conversation. Both Sambol and his brother chose medicine over business and both are NJMS alumni, graduating in '97 and 2000 respectively. Recognizing the critical connection of NJMS to her family, "my mother came up and spoke often at the family days for newly admitted students," he says. "She realized the importance of having the family feel a strong connection to the school."

How did Sambol choose his specialty? "I always wanted to be a surgeon — since I was a kid," he says. "I decided on cardiothoracic surgery because of the instant gratification in being able to help people. But my two children, who are 7 and 12, don't know yet what they will do when they grow up." ●



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sign up for an externship and spend one afternoon each month (for up to nine months) on site "to watch what people there really do."

"The Phase 2 group will initially be limited to 35 participants, but may increase. This is for students or post-docs who are more committed to one of the five industry tracks than to academic medicine," he says.

Phases 3 and 4 will offer career fairs, job tracking and job placement with an assigned mentor, and interview preparation. Alumni who have finished the GSBS iJOBS program will be invited back to provide feedback.

Garrett says the challenge is to give the students new experiences without overwhelming them. "Their primary commitment is to their lab work," he says. "That's what they need to focus on." In the first two years in the PhD program, students take courses, spend long research hours in the lab, and study for their candidacy exam.

"At the end of their second year, they have more time to concentrate on their research because they're not juggling so much," he says.

The point of this program will be to figure out what works, and what does not, to successfully land a job with a PhD in biomedical sciences. "We can follow who gets jobs in the five tracks," says Garrett. "Success may be hard to determine in some cases but I think the program and the information will be useful to everyone."

"When I came through my doctoral program, there was still a sense that the main focus was academic research, and secondarily nonacademic research, but that has changed," says Garrett. "We hope this will go some way to finding out, 'What's next?'" ●

Principal investigators of the grant are James Millonig, PhD, senior associate dean, GSBS, and associate professor of neuroscience and cell biology at Rutgers Robert Wood Johnson Medical School, and Martin L. Yarmush, PhD, director of CIVET and the Paul and Mary Monroe Chair and Distinguished Professor of Biomedical Engineering.