



Doreen Badheka (far right) with other founding members of the GSBS Alliance for Career Advancement

A Long and Winding Road

BY EVE JACOBS

In the 10 years since Doreen Badheka emigrated from her native India to settle in the U.S., her life has taken some unforeseen twists and turns. She came to this country to join her fiancé, a graduate student in structural engineering at New Jersey Institute of Technology in Newark, and to matriculate in a three-year Master's degree program (with thesis) in cell biology at New York Medical College. The couple married not long after her arrival. No surprises so far.

In 2010, Badheka came to Rutgers Graduate School of Biomedical Sciences (GSBS), Newark, to pursue a doctoral degree in basic science research. After the required rotations through three different laboratories, she joined the lab of Tibor Rohacs, MD, PhD, in the Pharmacology and Physiology Department, studying the sensory Transient Receptor Potential (TRP) ion channels. Life was good—she found her colleagues to be collaborative, the research to be interesting, and, in 2015, she made her mark as second author on a cover-story in the journal *Science Signaling*. She was headed straight toward

her goal. Like most basic science doctoral students, Badheka was focused on a position directing her own laboratory at a university—with the opportunity to teach the next generation of researchers.

But the world of academic research is changing rapidly. Deep cuts in National Institutes of Health (NIH) funding have translated into seriously diminished career opportunities for would-be academic scientists. Over the past few years, just 25 percent have found jobs directing research labs at a university.

When Badheka heard these figures, in the third year of her doctoral program and six years into her graduate studies, she says, “Reality sank in and I thought, ‘What are my options? I love research. What else can I do to stay close to it?’”

Her first foray out of the lab took her into the world of technology transfer via a year-long internship in the Rutgers Office of Research Commercialization, which she began in August 2013. “It gave research a whole different flavor for me,” she remembers.

“You fight for a patent, and you have to be in touch with everything that is currently out there or will soon be out there in that field.”

Inspired by this work, Badheka pondered her future. She thought, “My problem is shared by all basic science doctoral students. We could research career options together.” So, she built a team at GSBS, hand-picking fellow students who could help develop a program investigating “alternative” careers.

In 2014, the NIH selected seven institutions nationwide—among them GSBS in collaboration with the Rutgers Center for Innovative Ventures of Emerging Technologies (CIVET)—to figure out how to help redirect some basic science doctoral students into other related areas. “We need to come up with new nonacademic, non-research possibilities that will use the students’ scientific training,” says Stephen Garrett, PhD, associate dean of student affairs at GSBS. Interdisciplinary Job Opportunities for Biomedical Scientists—iJOBS—is the program that was initiated at Rutgers to address these issues. Almost simultaneously, Badheka launched the Alliance for Career Advancement (ACA), a student-run organization tackling the same issues as iJOBS.

The group’s first event in March 2014 “focused on young faces in academia,” says Badheka. The message of the evening was: the traditional dream is still possible. “It was a huge success,” says Badheka.

One of the panelists, Mona Batish, PhD, an international student who graduated from the GSBS doctoral program, “won a big NIH grant, and is currently working on her research at the NJMS Public Health Research Institute,” says Badheka, who says she learned about Batish through *Pulse* magazine.

Since then, the ACA has sponsored a series of panel discussions on career opportunities outside of academia. All have been enthusiastically attended.

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On the Road Again

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have Raykar traveling the globe, interacting with world leaders, and playing a lead role in the production of a landmark report aimed at strengthening health care systems in low- and middle-income countries throughout the world.

The commission was formed by the UK medical journal, *The Lancet*, in 2013 with Boston Children's Hospital's Plastic Surgeon-in-Chief John G. Meara, MD, DMD, MBA—Raykar's mentor and fellowship director—serving as one of three co-chairs. The commission's aim was “to develop the best evidence on the state of surgery worldwide, to study the economics of surgical and anesthesia care delivery, and to develop strategies for improving access,” according to its website. With more than 500 individuals from 110 countries, the commission has expertise in surgery, anesthesia, obstetrics, oncology, health care policy, finance, economics, and research.

“The challenge with global health going back to the early 20th century is that it has not been focused on surgery,” and, most notably, not on building strong health systems, comments Raykar. Long considered too complicated and expensive to do in low-resource settings, “we have started to look at what surgery provides. And we realized that more than a third of all human disease requires some surgical expertise or evaluation.”

That the fellowship began its work with the commission just as Raykar came on-board was sheer serendipity. “I came in at the perfect time,” says Raykar, who spent a good portion of his fellowship traveling the world, conducting research, gathering data, and meeting with high-level policymakers, including ministers of health and finance as well as officials from the World Health Organization and the World Bank. In April 2015, the commission's 32,000-word report, entitled “Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development,” was published.

Raykar was one of the report's four principal writers.

By serving as a roadmap, of sorts, for heads of state and other stakeholders to follow, the report expresses the vision of a new era when surgical interventions are seen not as a luxury but as an “integral, indivisible component of a properly functioning health system” everywhere. In addition to making more than 100 recommendations pertaining to health delivery, workforce training, information

Committed to fighting threats to public health worldwide, **Glenn Fennelly**, professor and chair of pediatrics, says:



“If infections like tuberculosis, HIV, and Zika virus exist anywhere, we are at risk everywhere.”

management, and finance, the report, notes Raykar, also offers “a structured, systematic framework for how to improve a health system, looking at five domains of surgical systems and health systems.”

Raykar opted to stay with the fellowship a third year to play a role in implementing the report—set to take place over 15 years. He and his team are currently working with the governments of Zambia, Cape Verde, and India.

As Raykar prepares to resume his residency in June, he has his sights set on a career working on health equity issues in the U.S. and beyond. In the meantime, he is grateful to have been part of the commission's work and the life events leading to it. “I'm so thankful for my experiences at NJMS and the strong mentorship of Drs. Dorian Wilson, Anne Mosenthal, Caryl Heaton, and Winthrop Dillaway.” ●

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Badheka says the format for the evenings has grown progressively more informal. Students particularly like “speed networking,” a concept not unlike speed dating. The idea is for one panelist and one student to chat for a short time, and then move on to another pairing. If there's “chemistry,” the hope is that panelists, many from New Jersey's pharmaceutical industries, will help students with their job search.

All four events in 2015—including a panel from Bio NJ and an event featuring human resources professionals from Novartis—have been “awesome,” says Badheka. “I've been on Cloud 9.”

This spring, Badheka hopes to successfully defend her dissertation and find a job. Like any thoughtful leader, she has planned for this eventuality and has collaborated with team members who will carry on the work of the Alliance when she leaves.

In the meantime, a workshop planned for May will teach participants how to write a LinkedIn profile to attract the attention of employers. A session with a professional photographer will follow. Badheka's ideas flow fast and furiously as she looks ahead. One program she envisions will host 10 mentors to come to the school for several hours with students signing up for half-hour mentoring sessions. Her team will meet with each student to go over resumes and discussion topics prior to the mentorship session. “There's been such interest in this program that we are already planning a second date,” she says.

What awaits Badheka after she earns her PhD? She doesn't know yet. It could be post-doctoral work in her current lab. Or she might move on to do tech transfer or research in industry. Or she could happily envision a future in a university career development office. The founder of the Rutgers Alliance for Career Advancement sees an array of attractive career possibilities where before she saw just one. ●