

NIEHS fellow begins career in clinical research

By Aleksandra Adomas

Darshini Trivedi, Ph.D., left the NIEHS Laboratory of Toxicology and Pharmacology in April to start her new career as a clinical research scientist at Impact Pharmaceutical Services Inc. (IMPACT). The company is a local contract research organization that specializes in providing regulatory and drug development consulting, medical writing, and project and program management to the pharmaceutical and biotech industries.

Perfect timing

Trivedi's job search is a story of networking, hard work, and perfect timing. She was one of the first members of the Rho Tau Chapter of Graduate Women in Science in Research Triangle Park, N.C., and when one of the chapter officers transitioned to **IMPACT**, (<http://www.impactpharma.com/>) she notified Trivedi about a job opening. That connection led to an interview in February 2012, but Trivedi was not ready to start a new job at that time. She was working on a project that needed a few more months of additional experiments, and she suggested late summer as a potential start date.

"I was not surprised that IMPACT didn't offer me a job back then," Trivedi admitted.

After her manuscript was submitted, Trivedi could again focus on her career, this time with the approaching retirement of her mentor, Robert Langenbach, Ph.D., as a deadline. During a short internship at the Duke Translational Medicine Institute, Trivedi discovered that, with her science and pharmacology background, regulatory affairs could be a perfect fit.

So, she sent her updated resume to the IMPACT hiring manager, with whom she kept in touch as part of her networking efforts. A month later, the same week her revised manuscript was resubmitted to the journal, Trivedi received an invitation for another interview. The acceptance notice for the paper came at the same time as the official job offer, a month before the end of her postdoctoral training.

"It couldn't have been more perfect," Trivedi explained. "I was able to complete my work, publish a paper in a good journal, do an internship, and get a job I'm really excited about."

NIEHS career resources

Trivedi praised opportunities and career counseling, available to trainees at NIEHS, as helping in her success. She was especially thankful for the writing experience she gained over two years of contributing to the NIEHS Environmental Factor. Having decided on regulatory affairs as a career path, Trivedi concentrated on preparing summaries of scientific papers outside her area of expertise, to show her future employer she had good communication skills and competence in a broad range of science.

She also sought out opportunities to gain other skills valued in the industry — leadership and teamwork. As an active member of the NIEHS Trainees Assembly Steering Committee, Trivedi co-chaired the 2012 NIEHS Biomedical Career Fair, and participated in the Citizen Schools (see [story](#)) project, for which she and other volunteers received an award (see [story](#)).

Many of the workshops that Tammy Collins, Ph.D., director of NIEHS Office of Fellows' Career Development (OFCD) and Lori Conlan, Ph.D., director of the NIH Office of Postdoctoral Services brought to NIEHS helped Trivedi answer behavioral questions she was asked during the job interview.

Trivedi also recognized the quality of the mentorship she received while at NIEHS. During those four years, Trivedi and Langenbach identified the signaling protein beta-arrestin-2 as a major player that could be used as a drug target for new treatments in aneurysm development (see [text box](#)).

"I've had excellent mentors who always offered me great support and advice," Trivedi said. "I was fortunate to work with Bob [Langenbach], who gave me independence in the lab, and based on other ongoing beta-arrestin studies, the freedom to develop a new aneurysm disease model."



As part of her networking strategy, Trivedi used LinkedIn to connect with professionals working at different companies. "There were a couple of months that I met one or two people every week," she said. "Almost every single person responded to my invitation and almost everyone was very useful." (Photo courtesy of Steve McCaw)



Collins and OFCD provide NIEHS trainees with career development training and counseling opportunities. One of the sessions Trivedi took advantage of was a mock job interview. (Photo courtesy of Steve McCaw)

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Understanding how aneurysms form

Trivedi and Langenbach studied abdominal aortic aneurysm (AAA), a potentially life-threatening disease that affects blood vessels. Since no current pharmacological treatment exists for the condition, Trivedi and Langenbach set out to understand AAA formation.

Other researchers utilized a mouse model to study AAA formation and established that angiotensin II (AngII), a drug that raises blood pressure by constricting blood vessels, binds to a G-protein coupled receptor called AT1a. Additional studies found that the multifunctional scaffolding protein, beta-arrestin-2, also binds to AT1a, so Trivedi and Langenbach wanted to know if beta-arrestin-2 was involved in AAA formation.

They determined that beta-arrestin-2 contributes to AngII-induced AAA formation, by activating extracellular-signal-regulated kinases (ERKs), cyclooxygenase-2 (COX-2), and other factors involved in the inflammatory response. Their results suggest that beta-arrestin-2 may be a novel target for pharmacotherapeutic design in AAA treatment.

*Citation: Trivedi DB, Loftin CD, Clark J, Myers P, Degraff LM, Cheng J, Zeldin DC, Langenbach R. (<http://www.ncbi.nlm.nih.gov/pubmed/23524589>) 2013. Beta-arrestin-2 deficiency attenuates abdominal aortic aneurysm formation in mice. *Circ Res*; doi:10.1161/CIRCRESAHA.112.280399 [Online 22 March 2013].*

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