

## ■ DIVITA MATHUR



Image courtesy of Roshni Walia.

**Current position:** Graduate Research Assistant, Bioinformatics and Computational Biology Program, Genetics, Development and Cell Biology Department, Iowa State University, Ames, Iowa. Advisor: Dr. Eric Henderson

**Education:** BE, Biotechnology, Delhi Technological University, New Delhi, India.

**Nonscientific interests:** I try to pursue something recreational every semester, like dance, theater, and artwork. Other interests include reading fantasy fiction, writing poetry, and cooking.

Broadly speaking, my area of interest is DNA nanotechnology. Some of the main facets of this field that intrigue me and form the essence of my research are the design, requirements engineering, nanopatterning, and applications of DNA nanostructures. My interest in this field started with a project using DNA origami to create a nanoscale object with moving parts. I quickly became fascinated by the inherent self-assembly and structural capabilities of DNA and began to address some of the challenges the technique currently poses, such as the size and sequence similarity of the conventional DNA origami-based nanostructures. In this publication, we introduce a simple and universally accessible technique for creating DNA nanostructures that are not limited in size and uniqueness due to the continuous scaffold sequence commonly used in DNA origami. In the future, we would like to explore the application of this technique in designing more complicated DNA nanostructures and devices and the convergence of this method with top-down methods for creating functional macroscale devices containing self-assembled elements. (Read Mathur's article; DOI: 10.1021/sb3000518)

## ■ SEEMA NAGARAJ



Image courtesy of Seema Nagaraj.

**Current position:** Just completed postdoctoral fellowship at the Institute of Biomaterials and Biomedical Engineering, University of Toronto. Advisor: Dr. Kevin Truong.

**Education:** Ph.D. in Electrical Engineering (Biomedical) at University of Toronto. Advisors: Dr. Kevin Truong and Dr. Stephen Davies. M.A.Sc. in Electrical Engineering (Biomedical) at University of Toronto. Advisor: Dr. Stephen Davies. B.Sc.E. in Electrical Engineering at University of New Brunswick.

**Nonscientific interests:** Playing the violin, painting, and dancing

My postdoctoral research focused on engineering synthetic gene networks in mammalian cells, with the ultimate goal of correcting cellular defects at the genetic level. In this paper, we engineered cells that targeted tumor sites for cancer therapy applications. The cells were programmed to fuse to their neighbors in the low-pH environment often found near tumors and then undergo apoptosis when exposed to a light stimulus. As a result, the engineered cells and the tumor cells would be selectively killed. Looking forward, I continue to be interested in engineering applications that improve the quality of human health. (Read Nagaraj's article; DOI: 10.1021/sb3000468).

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