

Medicine goes high tech with computer science alumnus

Prakash Viswanathan is not your typical computer science nerd. After graduating from UR with a double degree in Computer Science (BS) and Biology (BA) in 1998, he headed into the computer consulting industry working as a programmer analyst at American Management Systems. As with many double majors in computer science who eventually migrate to their other interests, it was easier to get a job in a technical position during the .com boom. But that all changed after two years of consulting work.

Though medical school was always a possibility (he took the MCATs while still at UR). after two years working as a programmer, he came to a decision point – grad school in CSC or medical school. He felt his experience as a computer consultant would bolster his medical school application as it showed a diverse set of skills from the typical biology/pre-med applicant. He took a chance and applied. Fourteen years after graduation from UR, he has completed his medical school, internship, residency, a stint as chief resident, a gastroenterology fellowship and is now ready to begin his work as a GI attending physician at a Long Island hospital.

While at Rochester, Viswanathan credits the research he completed under then URCS faculty member Kyros Kutulakos (jointly the Department of Dermatology) with adding to the strength of his medical school application. Though that research wasn't relevant to his current field, he recommends that anyone interested in a career in medicine would be well advised to take advantage of undergraduate research opportunities at Rochester. Medical school application committees put great value in undergraduate research in their admission decisions.

Prakash wasn't sure what area of medicine he would find the most interesting. He chose the field of gastroenterology while doing his clinical rotations because it is a procedure-oriented field. He was fascinated by the minimally invasive internal examinations, the hands-on approach that endoscopy provides for diagnosis and treatment and the recent advances in endoscopy that allow a GI doctor to perform procedures in lieu of surgery. He explains that technology in his field of medicine is advancing in significant ways. Electronic medical record systems are being implemented throughout the country in response to a federal mandate by Medicare and Medicaid. Medical practices not using electronic charts will be penalized if they are not on line by the end of 2012. Aside from medical records, doctors are joining with computer scientists to create intelligent assistant smart phone apps to improve communication between doctors and patients related to chronic gastrointestinal symptoms. Software companies are developing better user interfaces for patients who use smart phones to report problems to their doctors. The endoscopes are getting more efficient in size and speed, but there is still room for improvement for data collection and analysis. One software company making important advances in the GI field is the result of collaboration between a computer scientist and a doctor. There is much yet to be discovered in medicine and advancing technology will play a significant role. Collaboration across disciplines and effective user interfaces will be the key.

The BS in Computer Science at URCS was the ideal combination of problem solving and research experience to prepare him well for a medical career. Prakash believes that his computer science undergraduate degree enables him to problem solve differently from many of his colleges. Although many doctors rely on recall of past memorization to diagnose their patients, Prakash uses a combination of recall and logical problem solving, which brings the whole picture together. “It’s a more efficient method to use both,” says Viswanathan. He was also well prepared for the demanding rotation schedules of a medical intern/resident because of the many nights he spent in the major’s lab in CSB. “I still remember the all-nighters I did in the major’s lab the day before a program was due. It definitely prepared me for 24 hours shifts!”

Prakash hasn’t totally forgotten his CSC roots. He occasionally modifies existing software packages to make obtaining chart data more simplified for the other physicians. Also, Viswanathan still spends some of his spare time tinkering with his computer. Most of all, he and his wife spend their free time with their one-year old daughter Krithika. Although computer science isn’t his primary focus on a day-to-day basis, as the technological advancements continue in his field of medicine, Prakash will be comfortable adopting the technologies involved. The geek in him is still there, even if he’s disguised in a white lab coat with a stethoscope.