

## UCSB Engineer Wins Guggenheim Fellowship

### Project focused on personalized medicine



*Santa Barbara, California, April 23, 2010* Hyongsok "Tom" Soh, Associate Professor of Mechanical Engineering and of Materials in UC Santa Barbara's College of Engineering, is one of only two recipients nationwide of a 2010 Guggenheim Fellowship in engineering. From a field of 3,000 applicants, a total 180 Fellowships were awarded this year in the United States and Canada to artists, scientists, and scholars "on the basis of achievement and exceptional promise." 23 of those Fellowships were in the natural sciences category, which includes engineering.

Soh's Guggenheim project is to combine two novel technologies—microfluidics and high-throughput sequencing—to significantly accelerate, and reduce the cost of, developing molecular recognition elements (reagents) that specifically bind to their targets. Such reagents are critical in modern biotechnology, but are expensive and require significant time to develop with current techniques. They are the key component in molecular diagnostics, which is the basis for "personalized medicine."

The advances Soh proposes, based on his prior research, may have a significant impact on personalized medicine in both advanced and lesser-developed countries by making available low-cost, thermo-stable reagents that can be used for diagnostics at the point-of-care, rather than requiring that samples be processed in a laboratory.

"This is another well-deserved recognition of the quality and potential benefit to society of Tom's research," commented acting dean of engineering Larry Coldren. "He's been doing groundbreaking, high-impact work since he joined us, and we're pleased that this Guggenheim Fellowship is the latest in his many honors."

As co-principal investigator with a colleague from USC, Soh was also recently awarded a National Institutes of Health Transformative Research Projects grant. The program under which that grant was awarded was created "to support exceptionally innovative, high risk, original and/or unconventional research projects that have the potential to create or overturn fundamental paradigms. These projects tend to be inherently risky, but if successful can profoundly impact a broad area of biomedical research."

Soh received a double-major BS with distinction in mechanical engineering and materials science in 1992 and an M.Eng. in Electrical Engineering in 1993, both from Cornell University, and his Ph.D. in Electrical Engineering from Stanford in 1999. Before joining the UCSB faculty in 2003, he was first a member and then technical manager of the MEMS Research Group at Bell Laboratories. He is the recipient of the MIT Technology Review's "TR 100" Award (2002), Office of Naval Research Young Investigator Award (2004), and Beckman Young Investigator Award (2005). He has published over 40 technical articles and one book, and holds 9 issued patents.

A UCSB faculty member last received a Guggenheim Fellowship in 2007, when two, art professor Richard Ross and religious studies professor David White, were selected for the honor.

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### **Related Links:**

- [Soh Lab at UCSB](#)
- [The John Simon Guggenheim Memorial Foundation](#)

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The College of Engineering at UC Santa Barbara is a global leader in bioengineering, chemical and computational engineering, materials science, nanotechnology and physics. UCSB boasts five Nobel Laureates (four in sciences and engineering) and one winner of the prestigious international Millennium Technology Prize. Our students, faculty members, and staff thrive in a uniquely-successful interdisciplinary and entrepreneurial culture. Our professors' research is among the most cited by their peers, evidence of the significance and relevance of their work.

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