

career turn into academia by joining the Systems and Control Group at the Georgia Institute of Technology in Atlanta. She now teaches classes and serves as the director for the Human-Automation Systems Laboratory, which she founded and where she and her students build and test robots.

Her stature in the technology community is not one that Howard takes lightly. "I want to make a big, big impact," she says. "I want to be remembered for changing the world."

Along those lines, one of Howard's major goals is to consciously work to increase the number of minorities and women in the engineering ranks. One of her key reasons for leaving JPL was to have more access to students, particularly African Americans and Latinos.

"I want to bring people in," Howard says. "I think there's a disconnect for underrepresented students because typically engineering is shown as a sterile environment, and culturally, this group of students wants interaction. They want an environment that they can touch and feel."

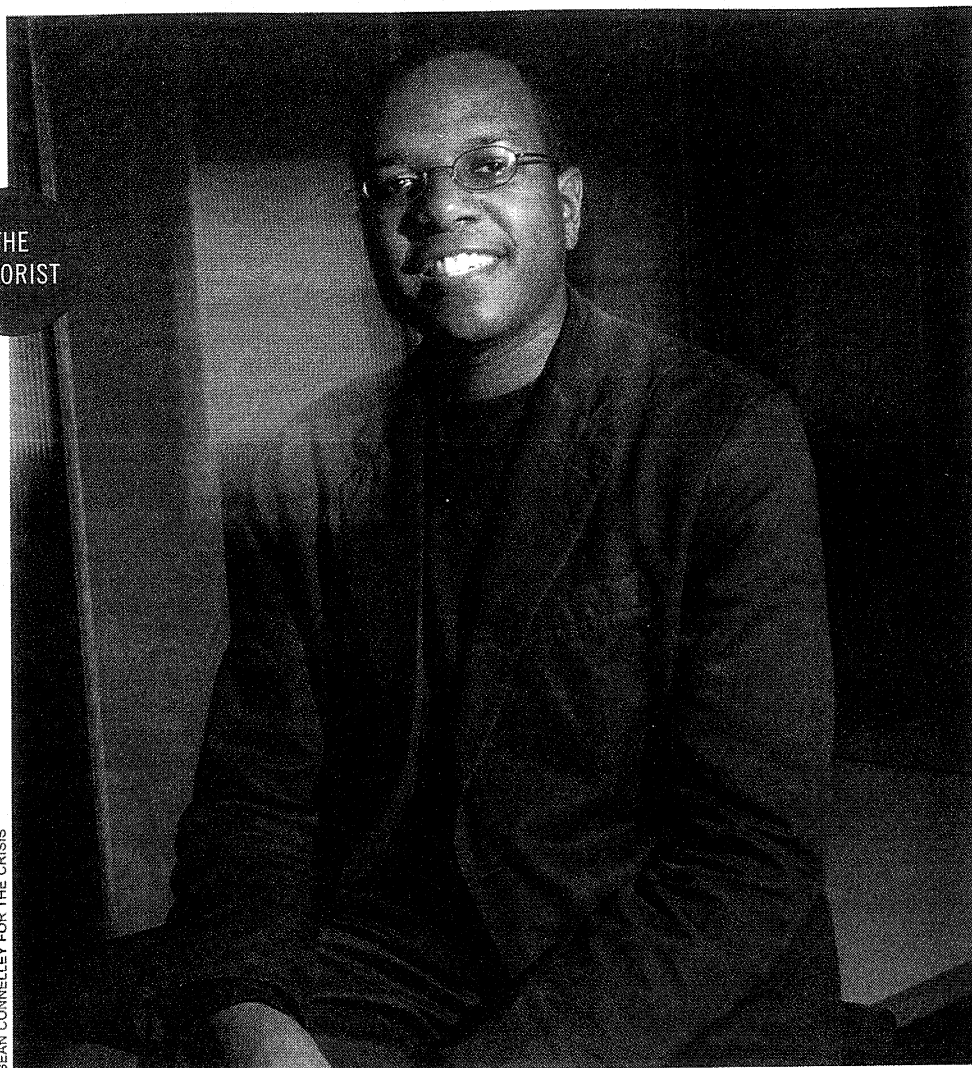
Howard wants to show students both the wealth of opportunity for human interaction and fulfilling work that engineering offers. For instance, her interests lie in creating robots that interact in the same environment with people. These could be household service robots, robots in hospitals, robots assisting with office security or robots interacting with astronauts. And, while Howard concedes this type of work is challenging, she says that people don't appreciate how "cool" it is. Besides that, she stresses that it has to be done — for our community's sake.

"Our students, our kids need to see us on TV getting the Nobel Prize or becoming [an academic] fellow," says Howard. "Only then will they know that those are goals that are attainable."

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THE THEORIST

SEAN CONNELLEY FOR THE CRISIS



JONATHAN FARLEY MATHEMATICIAN

Thirty-six-year-old mathematician Jonathan Farley's efforts at solving decades-old math problems, applying lattice theory to U.S. homeland security efforts and constructing the perfect terrorist cell have put him, and the ventures he helped found, among the go-to sources for both Hollywood screenwriters and defense contractors.

Farley, a science fellow at Stanford University's Center for International Security and Cooperation, in August will become chairman of the department of mathematics and com-

puter science at the University of the West Indies in Jamaica.

"I want to build up the math department to be a highly regarded department," says the Brockport, N.Y., native. "And an integral part of that is having the funds to do it." Toward this end, Farley plans to establish the Institute for Mathematical Methods in Counter-terrorism as a way to help draw funds to the university.

Farley's affair with math began long before he graduated summa cum laude from Harvard University in 1991 and earned a doctorate in mathe-

matics from Oxford University in 1995. The youngest of four sons, all Harvard graduates, says their father, an economics professor, taught him math. Their mother, a professor of African American history, also had a profound impact on him. By age 14 he knew math would be his life.

Today, he specializes in lattice theory — an outgrowth of the study of Boolean algebras which provides a framework for studying hierarchy and ordered sets in math.

What led to this concentration? Farley says the "field