OpeningREMARKS

Grand Visions of the Infinitesimal

Like many of you, I've reached that point in life where reading requires either longer arms or a magnifying glass the size of a hubcap attached to my nose. I now consider print size before purchasing a book. In the supermarket, I nearly get my head stuck between shelves while squinting at the packages. And while fly fishing, I fumble around much too long trying to thread ultra-thin tippet line through the minuscule eye of a fly.

But that stuff is huge compared to molecular life. In the past two issues of this magazine we've covered a lot of territory looking at global issues. This time, we're getting small—right down to the microscopic maneuvers of cells, peering into the world within our world. In "Signals of Life" (page 30), you'll learn about the research of some of our scientists as they explore the fascinating work of cells—how they communicate, interact, and take on rogue invaders. Biology professor Tom Fondy, for instance, is examining how ultrasound can be used to kill a specific kind of cancer cell. Fondy's biology department colleague Melissa Pepling is studying the effect of genistein, a naturally occurring estrogen found in soy-based products, on egg cells and fertility. Physics professors Kenneth Foster and Juree Saranak are investigating how a single-cell alga signals its two cilia to move in various directions.

What's often intriguing about such studies is how the cellular world mirrors ours. There are good cells and bad cells, life-saving moves and subversive acts, clear, crisp communications and miscommunications. And while you're thinking small, you may want to read the profile of Peter Hebert '99, a venture capitalist with a strong focus on nanotechnology (page 52). Nanotechnology is, according to one definition, the "engineering of functional systems on a molecular scale." As this technology advances, so too will progress be made in a variety of fields. Picture molecular-sized factories, dwarfed by cells, toiling away in our bodies, cleansing our systems of toxins or monitoring and adjusting our nutrient levels.

Sure, this may sound like science fiction, but it's on our doorstep. The more we discover about cell signaling and nanotechnology, the more we may benefit from applications that enhance our lives. Of course, evolving technologies are often accompanied by cautionary considerations. But, as a society, we have to follow the instructions and read the fine print—and remember to keep our reading glasses within reach.

JAY COX
Editor

SYRACUSE
UNIVERSITY MAGAZINE

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CONTRIBUTORS
Jaime Winne Alvarez '02, Margaret Costello, Rob Enslin, Paula Meseroll, Kayleigh Minicozzi '08, Kevin Morrow, Lauren Pauer '07, Kelly Homan Rodoski '92, Christine Yackel G'75

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CHANGE OF ADDRESS ONLY: Advancement Services, 820 Comstock Avenue, Room 009, Syracuse NY 13244-5040. Telephone: 315-443-3904. Fax: 315-443-5169. E-mail: *alafranc@syr.edu.* For duplicate mailings, send both mailing labels to above address.

LETTERS TO EDITOR, OTHER MAGAZINE BUSINESS: Syracuse University Magazine, 820 Comstock Avenue, Room 308, Syracuse NY 13244-5040. Telephone: 315-443-2233; Fax: 315-443-5425. E-mail: *jacox@syr.edu.* E-mail letters must include a mailing address. Letters are subject to editing for style, clarity, and space limitations.

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