## How Can We Expect Today's Science Grads To Remain 'Immersed, Active, and Hopeful'?

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In this issue, we pay special attention to the thousands of young men and women across the United States who have just received their degrees in science and are about to step into the next phase of developing their careers.

The Scientist congratulates all of them and wishes them well. For those who elect to persist in their scientific pursuits, the road ahead, judging from a number of indicators, is likely to be bumpy; their path toward intellectual, creative, and professional fulfillment isn't going to be an easy one.

Why, indeed, should a young man or woman choose to forge ahead in a science career today rather than pursue, say, investment banking, real estate, or advertising? Issue after issue of this publication reports on the crisis in research funding; competition for jobs in many disciplines seems to be heating up; and although salaries in several scientific fields are on the rise (see story on page 1), few positions pay well enough for money to be the central attraction.

Compounding these problems is the presence of several troublesome, more abstract, sources of discouragement: How can a young man or woman get excited about joining a profession now riddled with embarrassing evidence of gross cheating by professional researchers, arrogant abuse of NIH funds by university administrators, and repression of minority scientists?

You can add to this the notion that the egregious deficiency in U.S. science and math education reveals a pathetic indifference to science in general by legislators, government administrators, and educators—an indifference that could further erode the energy and quality of research in the future. And this is as we approach the 21st century burdened with a host of health, economic, and social puzzles whose solutions depend primarily on the committed involvement of laboratory researchers.

In the Opinion section of this issue (page 11), Harvard University biologist Ruth Hubbard is quoted urging graduates at Macalester College, where she was awarded an honorary doctorate, to "stay immersed, active, and hopeful," although "I and my contemporaries may be handing you a world that is in some ways worse than the one our parents handed us." Quite an understatement. Quite an exhortation.

It seems to me that for replenishment and regeneration, the science community must, at least for now, depend on factors in our new graduates' personalities that, at the core, have fostered true scientific achievement throughout history: the unquenchable thirst for truth; a passion to investigate the unknown and make it known: an intractable determination to defend one's verified findings and to acknowledge one's experimental failures-no matter what the price in personal comfort or professional prestige; and the goal of enlightening and improving the welfare of the general population and its institutions.

When I was a teenager contemplating a career in science, financial rewards never entered my mind. In those days, this held true for most young people with professional inclinations similar to mine. They were driven altruistically to help humanity. In those times, inspiration stemmed not from visions of power, fame, and wealth, but from examples of scientists like the microbe hunters Pasteur and Koch, whose intellectual perseverance, whose love of science for science's sake, and whose incorruptibility stirred our emotions, stimulated our imaginations, and sparked our commitment to humanitarian involvement.

As we celebrate our new science graduates, I and my contemporaries—now that we have become "elders" in the science community—cannot expect these fledgling scientists to remain "immersed, active, and hopeful" unless we join in working toward measures that will make their professional involvement more secure and rewarding and that will combat whatever unsavory conditions in the science community might discourage them.