LETTERS

"Science driven"

The National Science Foundation is said to employ "the best people with the best ideas" in its rotator program. An engineer provides details about the "ring laser C-II," which is expected to "measure the fluctuations of Earth's rotation rate." Reasons are given as to why there is "skepticism" about proposed "ambient air quality standards" (Right, a smoggy day in Los Angeles). A scientific consultant discusses industry's ability to supply "enhanced-potency inactivated polio vaccine" to the world. And when might a scientist be analogous to "a helicopter traffic reporter"?

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Top Talent at NSF

Jeffrey Mervis' News & Comment article about the National Science Foundation's (NSF's) application of the Intergovernmental Personnel Act (IPA) ("Revolving door brings in scientists—at a price," 12 Sept., p. 1599) gives us the opportunity to highlight how vitally important the rotator program is to NSF's mission to fund the best people with the best ideas and to push back the frontiers of knowledge. Our ability to temporarily "hire" experts who serve at NSF for a few years helps us ensure that agency funding decisions are based on the best input from the field and that they reflect fresh ideas and creativity. The home institutions gain, too, from the knowledge and insights that these "IPAs" (rotators) take back home with them.

Certainly there is "a price" for top talent, but the ultimate price of settling for less would be far greater. IPA salaries are determined both by federal law and by regulation; the salaries of IPAs working at NSF are based on their salaries at their home institutions. In order to attract top people to come to NSF for a few years, we pay their current salaries. The taxpayers trust us to spend their investment wisely. We are obliged to deliver our best effort.

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Ring Laser Design

I was pleased to read Alexander Hellmans' article "Ring laser senses Earth's spin" (Research News, 5 Sept., p. 1435), which describes the use of large ring lasers in high-precision geodetic measurements. The article states that scientists from the Federal Office for Cartography and Geodesy in Frankfurt, Germany (IfaG), the Technical University of Munich (Germany) (TUM), and the University of Canterbury in New Zealand "built" the ring laser C-II and that I "helped" to design it.

The company Schott/Zeiss (Mainz, Germany, and Oberkochen, Germany) also participated in building the device, and I designed it alone. TUM/IfaG commissioned it, and the University of Canterbury has been testing it since February 1997.

The picture accompanying the article shows C-II in its final stages of construction at Zeiss, with Zeiss employees. It was not at the University of Canterbury.

The "adaptive optics" consist of one mirror mounted on a piezo element to correct for path-length variations by moving it in and out (not by "bending" it). Also, the 1.2-meter × 1.2-meter [× 0.18-meter] "glass block" mentioned is actually a very-low-expansion glass ceramic called Zerodur, manufactured by Schott.

A good part of the attraction of C-II is due to its mirrors, which approach reflection loss of 1 part per million. This accounts for its extraordinarily high cavity quality factor.

The precision of this ultrahigh-resolution instrument is expected to surpass that of Very Long Baseline Interferometry in measuring the short-term (less than 1 week) fluctuations of Earth's rotation rate.

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