Letters

High School Scientists

Daniel E. Koshland, Jr., in his editorial "Sources for new scientists" (7 Mar., p. 1053), describes the merits of exposing minority students to science at an early age and formative stage in their lives. He cites the National Science Foundation and American Chemical Society projects in this area.

The National Institutes of Health (NIH) has conducted the Minority High School Student Research Apprentice Program (MHSSRAP) each year since 1980. Institutions that have received awards from either the NIH Biomedical Research Support Grant Program or the Minority Biomedical Research Support Program are eligible to apply for a MHSSRAP grant. In 1986, awards were made to 299 institutions for support of 1000 minority high school students. Each student is recruited by the institution and assigned for 8 weeks in the summer to an established investigator, who is committed to develop in the student an understanding of the research in which they participate and the technical skills involved.

Most of the students who participate continue into postsecondary education with the intention of pursuing a career in health research or a health profession, or both.

We agree with Koshland that early exposure of minority students to science is productive and worthwhile.

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I heartily agree with the sentiments expressed in Koshland's editorial of 7 March. I would also like to inform readers of a simple and effective way to provide laboratory research opportunities to high school students. Three years ago I became involved with the Abraham Lincoln High School Magnet Program in East Los Angeles. The location of this school ensures a high minority and disadvantaged student enrollment. In the first year I took one student into my laboratory. She was bright, eager, and endlessly enthusiastic about her work. This experience prompted me to encourage other colleagues to get involved, and in the second year we placed six students in research laboratories. I decided that, to ensure continuance and substance, the program should be formalized, and so last year the STAR (Student Tutoring and Research) Program was officially born. The STAR Program is a formal (but voluntary) agreement between the University of Southern California (USC) and the L.A. County Schools District. The agreement involves no cost to either party and was not difficult to arrange. Both USC and L.A. County are covered for insurance purposes under the STAR Program agreement. The USC and L.A. County lawyers were a great help in writing the agreement, and it is now much easier to get support and to enroll new laboratories.

This year we placed 20 students from the senior class in research laboratories on the USC Health Sciences Campus. The students work 3 days a week, from 1:00 p.m. to 5:00 p.m., for a full year. With a little good will, the relatively short high school day can accommodate such activities. Many students continue their involvement through the summer. We have obtained a "Minority High School Student Research Apprentice Program" grant from the National Institutes of Health to help support summer stipends. Some of our STAR students are working on partially self-directed projects, while the majority fit in with the research of the host laboratory. Most students also help out with general laboratory chores. Naturally, not all students are suited to a research career, and it is important to diagnose discontent at an early stage. Nevertheless, our overriding experience has been one of excitement, enthusiasm, and fulfillment for students and professors alike.

I encourage other scientists to initiate STAR programs. I would be happy to provide colleagues with copies of the legal documents we developed. Decreasing enrollment in the sciences and inadequate minorities representation are problems that scientists must face; they are also problems that scientists might remedy!

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Directions of Research

I write concerning the News & Comment article "Research coterie meets at NAS to assess budget" by Mark Crawford (14 Mar., p. 1239). If it is true that "400 members of academic, industrial, and scientific communities" devoted 2 days to this topic, "No promising new solutions were unearthed, and participants [were] left knowing that their options are limited and in instances painful," the world of research is in trouble.

Even as science advances by the right questions being asked about nature by receptive, perceptive, and trained minds, so too will the research upon which science depends. In this case, the "coterie" might have been selected according to the wrong commonalities. It might be that the continued inbreeding of researchers under the protective laboratory conditions now afforded by government support has resulted in another laboratory animal that has lost its resistance and resilience. Here again we might face the problem of finding some researchers "in the wild" for some imaginative crossbreeding to return our stock to one that can deal with problem-solving in the real world.

The other alternative, in fairness to those assembled, might be asking the right questions. Why should such a discussion take place today "in an atmosphere shaped by the Reagan Administration's budget proposal"? Let us return to being challenged by science in those many ways that have served us so well in the past. Let us have some positive thinking that is focused on the goals ahead and dedicated to finding ways in which they can be achieved. Enough of the hand-wringing and tunnel vision demanding more of the same. That "same" has not served us or science well. Let us concentrate on where *research* should be going next, not where *we* are going.

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Serine Proteases

Errors creep into even the best of writer's reports. On the first page of the article by Jean L. Marx on killer cells (Research News, 21 Mar., p. 1367), it is noted that "serine proteases . . . split protein molecules at residues of the amino acid serine." However, serine proteases are named for their active site and not their target site: consider, for example, trypsin and chymotrypsin, which are both serine proteases.

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Erratum: In the Research News article "How killer cells kill their targets" by Jean L. Marx (21 Mar., p. 1367), the wrong picture appeared with the caption "Killer cell target." The cell pictured had been treated with isolated granules from killer lymphocytes, not with the lymphocytes themselves, as was stated in the caption.

Erratum: In the article, "McLean-AMI agree on joint venture" (News & Comment, 21 Mar., p. 1363), the name of the new company formed was inaccurate. It is McLean Health Services, Inc.