exploration of the burning plasma environment, at a time when a good fraction of the interested physics community had been led to believe that ignition was a goal that could not yet be pursued. Rosenbluth was certainly not part of that opinion, and he has been a constant supporter of the Ignitor program.

Bruno Coppi
Massachusetts Institute of Technology
Cambridge, Massachusetts

Although Stix/Sessler and Rosenbluth are clearly on different sides of the fence when it comes to whether or not to construct the ITER, they are just as clearly on the same side with respect to whether or not we should continue to pursue the objective of realizing controlled fusion's potential as a source of energy. As Stix and Sessler declare, "We three authors all pursue a common goal, an optimal strategy for magnetic-fusion research."

This statement and the rest of the ITER article imply that the quest for fusion power is an agreed-upon and broadly supported national goal, both in the US and in other developed countries. In reality, however, there is no such consensus, and fusion power clearly has both its supporters and its detractors.

Therefore, it would be a great service to the physics community if a comparable debate on the merits of fusion power—with emphasis on the technical and policy aspects of the issue and the implications thereof for both basic and applied research in this country—were to be published.

Janis Lawyer
Washington, DC

Article on Ethnic Diversity Prompts Minority Retort

In his article "Making a Difference: Ethnic Diversity in Physics" (July, page 39), James Stith paints an honest but somewhat gloomy statistical picture of our production of minority physicists, and makes some good points about what we need to do to improve the situation.

There are two related points on which I would like to comment briefly. One is the importance of minority students having both majority and minority role models, as exemplified by the experience of just about all the individuals profiled in the article's sidebar.

My other point is that there is a diversity of role models, with some also serving as mentors and others exerting their effect at a distance. Consider the far-reaching influence of, say, Nobel prizewinners or, albeit not in the field of physics, Michael Jordan and the late Barbara Jordan. And also consider the potential impact of the half-dozen physicists described in Jean Kumagai's lively sidebar—role models all, I'd say, and possibly future mentors as well.

Aklilu Sauvage
Washington, DC

James Stith's article prompts me to make the following observations about ethnic representation and ethnic diversity.

Surely there is no logical reason why ethnic representation in physics needs to be homogeneous and mathematically proportional across ethnic groups; after all, there is no other academic or professional area in which ethnic representation is mathematically proportional. Although Stith describes disproportionate ethnic representation as a major problem, it is not at all clear why that should be so. Similarly, he states that disproportionate representation constitutes "isolation" and creates "stereotypes," but such an assertion implies that the only way to avoid stereotypes is to enforce totalitarian homogenization. Stith's account leaves me wondering why disproportionate ethnic representation is regarded as the absence of diversity. Need all groups be homogeneous and proportionately represented to establish "diversity"? When Stith says "diverse," he actually means "homogeneous."

Stith appears to be concerned only with ethnic diversity among physicists (in fact, he is concerned only with racial diversity). Perhaps it would be useful to know about diversity among physicists on the basis of, say, age, sexual orientation, weight, political views, religious beliefs, citizenship, geographic distribution or dietary preferences. And even within the category of ethnic diversity, Stith covers the subject in a very nondiverse manner; he inquires into representation only for three arbitrarily selected ethnic groups—blacks, Hispanics, and American Indians. Why the arbitrary selectivity? Does not this arbitrariness itself constitute bias?

Steven E. Plaut
University of California, Berkeley

James Stith's study is based on a classification system that includes whites, blacks, Hispanics and Asians, and the author refers to these groups as "races." I must point out that

neither Asian nor Hispanic is a race and therefore mixing these groups with whites and blacks is incorrect and does not make any sense.

An "Asian" can be any person from, say, China or India, but Chinese and Indian people are obviously of different races. Likewise, a "Hispanic" can be a white person of European descent, a black person of black African origin or a person of Native American origin. If a black person from Colombia or a Native American from Guatemala or Peru is called a Hispanic because that person speaks Spanish, why is a black American or a Native American from the US not called an Anglo because that person speaks English?

Moreover, Asians do not have a common culture, and neither do the diverse peoples of Central and South America that get lumped together as "Hispanics" or "Latinos" just because they might speak Spanish (and many do not).

Studies like that undertaken by Stith, which are based on such misconceived ideas and dubious data, are of very little value, essentially meaningless and tend to perpetuate ignorance in and of our society.

Luciano N. Blanco
Institute for Theoretical Research
Coral Gables, Florida

Is it not racist to expect that an African–American student must have an African–American role model, or a white student a white role model? In addition to increasing the diversity of our role models, perhaps we could simultaneously move toward a society in which racial and ethnic considerations are irrelevant to the use of role models. To do otherwise would be to sustain racism in a more subtle guise.

Vincent H. Crespi
University of California, Berkeley

Stith replies: "Making A Difference: Ethnic Diversity In Physics," describes the current representation of underrepresented minorities in physics and cites examples of practices employed by institutions that have been successful in recruiting and retaining the underrepresented.

I am in total agreement with Aklilu Sauvage's letter pointing out the need for a diversity of role models. I would also add that it is doubtful if a single role model is sufficient; students need advice from a variety of sources.

Steven Plaut states that "there is no logical reason why ethnic representation in physics needs to be homogeneous and mathematically proportional across ethnic groups. . . ." I fail to see how a call for diversity implies that the solution is to achieve homogeneous and mathematically proportional representation. While I am not certain of the value of the appropriate number, I am convinced that the present distribution falls short.

Plaut seems to question whether the low number creates a sense of isolation and creates stereotypes. I would only suggest that he speak with a representative cross section of the students at his university. It is a well-known fact that the majority's view of what may be termed the climate for the underrepresented is often significantly different from the view expressed by the underrepresented themselves.

Both Plaut and Luciano Blanco question my use of arbitrarily selected groups and point out that neither Hispanics nor Asians are races. Those groups were selected because there exists a body of knowledge about their representation in, and progress within, the discipline of physics. I leave it to others to argue and come to closure on the politically correct group designations. Meanwhile, my personal response to this is quite simple; I will use whatever designation the group in question wishes me to use.

In response to Vincent Crespi, I answer that neither the article nor I take the position that "an African–American student must have an African–American model, or a white student a white role model." In the case of the underrepresented, given that we believe role models are important, and given that we believe it is desirable to increase the underrepresented population of physics majors, then we must all serve as role models for all of our students. There are numerous cases (such as at Stanford University, MIT and the Georgia Institute of Technology) of minority students being effectively mentored by majority faculty members, and other institutions would do well to learn from these experiences. "Making a Difference" is my attempt to consolidate such ideas for use by those who are committed to seeing that all students who have an interest in and the ability to do physics have an opportunity to succeed.

There are cultural differences among our students, and all of us must be sensitive to those differences. It simply is not reasonable to expect that one common view should exist on any subject in a nation that is as diverse as ours.

If we physics faculty members expect to address the needs of the learner, then we must focus on the

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learner, not on the teacher. When we give all students their due, when we treat each of them as an individual and respond as best as we can to meet their needs, when we act on no preconceived notion about an individual student, when we encourage all students to work to achieve their full potential, then there will be no need for articles such as "Making a Difference." I hope that my critics are willing to join me in working toward reaching that point within the foreseeable future.

JAMES H. STITH
Ohio State University
Columbus, Ohio

Views on Steel-Pan Tuning Process Harden—or Soften

The interesting article in the March issue (page 24) entitled "Music from Oil Drums: The Acoustics of the Steel Pan" contains two errors that might not be picked up by most physicists. In discussing the tuning of a pan, the authors say that the tuner raises each note area and then works it up and down repeatedly to soften the metal. A competent metallurgist has assured me that such manipulation of steel at anywhere near room temperature would actually lead to hardening.

The second error is merely one of nomenclature. The process of hardening the surface described in the final paragraph is called "nitriding," not "nitrating."

ELLISON H. TAYLOR
Oak Ridge, Tennessee

ROSSING, HAMPTON AND HANSEN REPLY: Taylor is correct about "nitriding," which evidently derives from the German word *nitrieren*. We used "nitrating" because that was the term given in the paper by Felix Rohner that we cited in our article.

With regard to hardening versus softening, metallurgists and pan tuners appear to be in disagreement. Although metallurgists tell us that some metals may soften with working, steel generally hardens. Why the tuners find that the steel surface softens deserves further study.

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