

## Strengthening Research in Europe

**E**urope's future prosperity depends heavily on the next generation of researchers. Yet even as Europe coalesces around big ideas such as the European Research Area and a single currency, its academic system remains fragmented. Moreover, the continent's leadership has been slow to develop mechanisms that empower its young people. The results have been all too visible: a "brain drain" to the United States, difficulties in recruiting the best and brightest from Asia, few opportunities for young people interested in careers in industry, and obstacles to mobility between countries and between academia and industry.

What will it take to ensure that Europe's rising stars stay in—or return to—Europe? What will it take to attract the best and brightest from elsewhere to Europe's laboratories? What will it take to lower the boundaries between academia and industry? How can Europe's academic institutions reward excellence in more visible ways? And how can industry/academia partnerships across Europe be strengthened and increased in number?

European leaders have debated such questions at meeting after meeting, but even with the implementation of the European Union's Framework Program 6 looming, they have failed to develop a workable action agenda for change. One recent effort to turn that around was organized by the European Science Foundation, the Karolinska Institute, and *Science* magazine's Web site for young scientists, Next Wave. Held in March at the Nobel Forum, this colloquium brought together 50 key figures in industry, academia, foundations, and government agencies from across Europe. Each pledged to work to implement the specific recommendations emerging from the meeting. Fourteen action items, with 38 specific strategies for enabling change (too many to list here), were recommended. These are included in the summary report that is posted on both the Next Wave and European Science Foundation Web sites at the URLs given below,\* along with the names of the distinguished participants. Here are some of the most important themes.

Participants proposed significantly expanding at all levels the scope of current programs designed to foster exchange between Europe's academic and industrial scientists. Such efforts, they felt, would help to disperse some of the confusion and misperceptions that exist in the occasionally fragile relationship between Europe's industries and academic institutions—confusion that impedes informed career development by young scientists. And it would spur competitiveness in both sectors.

Participants also pledged to identify, cultivate (and fund!) multidisciplinary training and education programs that promote the flexible team-based approach to research that is increasingly the norm in industry and academia. Also endorsed was training in problem solving, team working, and communicating outside researchers' own disciplines. And the participants advocated the need to prepare young scientists to be leaders in industry, in setting public policy, and in outreach to the public.

Finally, as a unifying principle underlying each of these themes, the discussants in the Nobel Forum vowed to support mechanisms that would provide detailed, accurate, and timely information of value to young scientists, academic institutions, and industrial labs. Among other things, they proposed the creation of mechanisms to facilitate the identification of who is doing promising work in a particular field and pan-European mechanisms for identifying and rewarding top young researchers and their work.

Europe—for now, at least—remains a collection of diverse nationalities and diverse perspectives. Most Europeans reading the list of actions proposed in the summary report will recognize the "limiting factors" that have hindered past reforms: academic rigidity, industrial shortsightedness and lack of transparency, the absence of a robust tradition of personal philanthropy, and the complex mix of competing national and international structures. But as the Nobel Forum discussants recognize, Europe is changing and is now poised to transform its diversity "weakness" into a real strength.

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\*Next Wave URL: <http://nextwave.sciencemag.org/cgi/content/full/2002/08/26/1>. European Science Foundation URL: [www.esf.org/publication/141/ESPB17.pdf](http://www.esf.org/publication/141/ESPB17.pdf)

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