

THE WORLD OF  
Undergraduate  
Education

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## INTRODUCTION

## MANY VOICES, ONE MESSAGE

KATRIN SCHÄFER AND YUN YING WILL PROBABLY NEVER CROSS PATHS. BUT IF the 48-year-old biological anthropologist at the University of Vienna, Austria, and the 82-year-old physics educator at Southeast University in Nanjing, China, chanced to meet at a conference on global undergraduate education in the STEM (science, technology, engineering, and mathematics) fields, they might recognize each other as kindred spirits.

Both Schäfer and Yun are convinced that their students—native speakers of German and Chinese, respectively—need to possess a solid grasp of English to succeed as scientists or even lay claim to being scientifically literate citizens of the world. The hegemony of English is just one of many forces shaping undergraduate STEM education. This special issue looks at the topic by focusing on the lives of Schäfer, Yun, and 10 other faculty members in a dozen countries on six continents. The group is meant to be representative of scientists teaching large numbers of undergraduates around the world. The list is skewed toward the most industrialized countries but also includes those in which the scientific infrastructure is developing rapidly. An accompanying map presents some basic information about higher education in each country.

Despite the vast differences in the makeup of their students, the policies that govern higher education, and the cultural and economic factors that shape the profession, these scientists speak in surprisingly similar voices. In story after story, they point to lagging interest and poor preparation in science among students, insufficient resources, heavy professional burdens, and antisience attitudes in society at large. Yet there are patches of light among those dark clouds. Each faculty member has managed to bring science to life for students in exciting and innovative ways. They are also engaged in myriad activities outside the classroom—from informal science education to election campaigns—aimed at spreading knowledge and the values of scientific thinking.

For an additional perspective, *Science* invited three distinguished educators to explore the issues facing undergraduate STEM education. Excerpts of their comments appear in this issue; the complete discussion is available at [www.sciencemag.org/sciext/undergrad\\_education07](http://www.sciencemag.org/sciext/undergrad_education07). This issue also marks the debut of the Signal Transduction Knowledge Environment Journal Club, as well as three Teaching Resources.

We hope that you'll find the entire package compelling enough to alter your own worldview of undergraduate education. If it does, please let us know at [www.sciencemag.org/sciext/eletters](http://www.sciencemag.org/sciext/eletters).

—JEFFREY MERVIS

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