

SCIENCE

Science in Japan: Competition on Campus

TABLE OF CONTENTS

EDITORIAL

- Science Education in Japan 15
Hiroo Imura

NEWS

- Universities Step Up to the Challenge 44
- Schools Scramble for Niche to Keep Up With Competition 47
- System's Rigidity Reduces Lure of Science As a Career 49
- Job Market Shapes Undergrad Studies 49
- Women Fight Uphill Battle for Equity 50
- Simple Life Satisfies This Grad Student 51
- Corporate Concerns and Cost Clamp Down on Ph.D. Output 52
- Gaijin Find Balmy Climate for Cutting-Edge Science 54
- Risky Career Move Pays Off 54
- Many Japanese Say West Is Still to Their Liking 55
- Search for Truth Points to America 55
- Reformers Fight to Draw More Students Into Science 56



KAZUKO ASHIZAWA

Two opposing forces—competition and cooperation—are beginning to coexist at Japanese universities as they enter an era of increased funding, increased demand for graduate students, and increased pressure to contribute to the country's economic growth. The new environment promises to be a challenging one, with great rewards for those who succeed and great risk for those who fail to keep pace.

On the competitive side, there is the unprecedented bidding for talented students, the growing use of peer review to make awards, and the emerging recognition that lifetime tenure, tiny but equitable grants, and immobility are not compatible with cutting-edge science. Those below the top tier—dominated by the University of Tokyo and Kyoto University—liken the new atmosphere to the law of the jungle: "I have to get everything for my team by myself, like a small *yakuza* [organized crime] boss," says one researcher at Waseda University.

But cooperation is too deeply ingrained in Japanese culture to be driven out by the latest demands on science. From high school teachers sharing their ideas on improving the precollege science curriculum to universities putting out the welcome mat for foreign scientists, increased domestic and international collaboration are seen as vital to a successful transformation of academic science.

The stories in this special section are intended to be a snapshot of life on campus and the issues affecting academic research in Japan. It is part of our broader, ongoing effort to report on the country's vibrant and growing scientific enterprise. We welcome your comments and your ideas for future coverage.

—Jeffrey Mervis

This section was reported and written by Dennis Normile, head of the Japan news bureau of Science, and June Kinoshita, a science writer based in Belmont, Massachusetts.

For more information on career opportunities, see Science's Next Wave's forum on "Training Young Scientists in Asia for the 21st Century" at <http://sci.aaas.org/nextwave/public.html>.