

---

## INTRODUCTION

On September 13, 1988, the Office of Technology Assessment (OTA) and the Massachusetts Institute of Technology (MIT) Japan Science and Technology Program (JSTP) held a one-day workshop to discuss MIT's Japan Science and Technology Program's internship program and its technical language workshop. The internship program provides MIT engineering and science students with Japanese language skills, cultural education, and placements in Japanese industry, government, and university research facilities. These interns get first-hand experience of Japanese methods of research, technology development, and manufacturing. The MIT technical language workshop provides advanced training in reading technical documents in a specific field of science or technology for people who already have some background in Japanese.

OTA co-sponsored the workshop as part of the research for its assessment Technology, Innovation, and U. S. Trade. One part of this study examines the contribution of technology to U.S. manufacturing performance in an increasingly competitive world economy. The workshop helped OTA to understand Japanese approaches to technology development and manufacturing, contrast these with U.S. practices, study MIT's experience in combining an engineering and science background with the ability to speak and read Japanese, and assess the value of such programs to U.S. corporations. Participants at the workshop included current and graduated interns, graduates of the technical language workshop, corporate sponsors of the JSTP, the faculty director and staff of the program, and OTA-staff members.

This document gives a brief description of the MIT-Japan Science and Technology

Program. It then reports the principal themes and issues raised at the workshop.

### **The MIT-Japan Science and Technology Program**

Established in 1981, the MIT-Japan Science and Technology Program has three components: education, research, and public service. Educational activities include the internship program and the development of an interdisciplinary curriculum in Japanese language, science, society, economics, politics, and history at MIT. Research supported by members of the program includes a five-year interdisciplinary project to investigate technology and its diffusion. Among its public service offerings, MIT-JSTP sponsors meetings on Japanese science and technology developments and U.S.-Japan policy issues. Another such service is the workshop in technical Japanese for scientists and engineers, first held in the summer of 1988 and scheduled to be repeated in 1989.

The internship program arranges the placement of MIT science and engineering students in Japan and provides orientation seminars before they go. About 15 to 20 students are placed each year, but participation is increasing steadily. Private Japanese firms that have accepted students include Toshiba, NEC, Matsushita, NTT, Nippon Steel, Mitsubishi, Shimizu and Hitachi. Students have also been placed in Tokyo and Kyoto Universities, the Tokyo Institute of Technology, and Japan's National Laboratories. Before going to Japan, each student studies Japanese for two years (usually 4-5 class hours a week), and is required to take courses on Japan and its culture. The program

encourages students to work collaboratively with Japanese researchers throughout their careers.

The MIT technical Japanese workshop helps participants improve their ability to read Japanese technical materials in their area of expertise. Participants in the first workshop were required to have a knowledge of computers, electrical engineering, or related subjects and be able to understand appropriate technical documents in English. A basic command of the Japanese language is also a prerequisite: this means being able to converse in Japanese and read Japanese at the high school level (equivalent to knowing 800-1000 kanji). The intensive eight-week course covers reading, recognition of kanji used in technical docu-

ments, use of reference tools, and use of on-line and off-line data sources.

The MIT-JSTP's` core financial support comes from thirteen U.S. corporate sponsors: AT&T, Dow Chemical, Dow Corning, Eastman Kodak, Ford, General Electric, IBM, Monsanto, Motorola, PPG Industries, Proctor and Gamble, Teradyne, and United Technologies. Additional funding to support student interns comes from the Starr Foundation and the Japan-U.S. Friendship Commission. The Japanese companies providing placements contribute by paying interns' salary and travel costs. The technical Japanese workshop obtains support from the National Science Foundation, the Hitachi Foundation, the Japan Foundation, and the Japan-U.S. Friendship Commission.