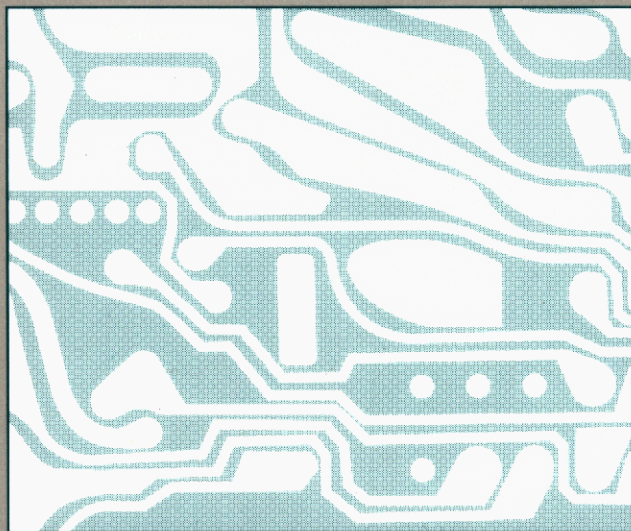


COMPUTING

PROFESSIONALS

*Changing Needs
for the 1990s*



COMPUTER SCIENCE AND
TELECOMMUNICATIONS BOARD

OFFICE OF SCIENTIFIC AND
ENGINEERING PERSONNEL

NATIONAL RESEARCH COUNCIL

Computing Professionals

Changing Needs for the 1990s

A Workshop Report Prepared by the
Steering Committee on Human Resources
in Computer Science and Technology

Computer Science and Telecommunications Board
Commission on Physical Sciences,
Mathematics, and Applications

and

Office of Scientific and Engineering Personnel
National Research Council

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This report has been reviewed by a group other than the authors according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

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Preface

At the invitation of the Office of Scientific and Engineering Personnel (OSEP), the Computer Science and Telecommunications Board (CSTB) joined OSEP in an exploratory project aimed at better understanding the human resource base of the computing profession. CSTB and OSEP convened a steering committee that combined computer scientists with social scientists who specialize in analyzing scientific and technical labor markets. The steering committee was charged with organizing a cross-disciplinary workshop, which was held on October 28-29, 1991, in Irvine, California, and developing this summary report of that workshop and the steering committee's subsequent deliberations, which were carried out primarily through numerous telephone, teleconference, and electronic mail interactions over the year following the workshop.

The workshop illustrated the value of bringing together people from a range of backgrounds—economics and other social sciences, computer science, and computer and electrical engineering; research, product development, management, and data analysis; and government, industry, and academia. The interaction of workshop participants reflected a range of perspectives, as well as areas of agreement and lack of agreement. It is in illuminating that range that this report makes its greatest contribution; it underscores the problems discussed at the workshop that arise from a lack of consensus both within and between segments of the computing professional community on is-

sues as basic as what to call these professionals. The report attempts to define and focus attention on specific problems and approaches to solving them, identifying a range of steps that could be taken by federal statistical agencies, professional organizations, and others.

Appended to the report are three papers that were prepared and delivered as presentations at the workshop. They include information collected and evaluated by their respective authors. These papers were used as resources during the workshop and subsequently by the steering committee.

CSTB and OSEP are grateful for the financial support of the Association for Computing Machinery, the Computer and Business Equipment Manufacturers Association, the Information Technology Association of America, the Institute of Electrical and Electronics Engineers, the National Science Foundation, and the Defense Advanced Research Projects Agency, which made this project possible.

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