

PANEL DISCUSSION ON IMPLEMENTATION OF RESEARCH NEEDS

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In a special session at the 12th Biennial International Conference on Water Pollution Control that was held in Amsterdam, R.S. Engelbrecht of the University of Illinois and President of the International Association on Water Pollution Research and Control presided over a panel discussion on the topic of the administration of research programs. Panelists were: E.H. Bryan, U.S. National Science Foundation; F.A. DiGiano, University of North Carolina, representing the Association of Environmental Engineering Professors; K.J. Ives, University College London; S. Elmaleh, Université des Sciences et Techniques du Languedoc; P.E. Odendaal, Water Research Commission, Republic of South Africa; and W. Robel, Water Technology Project Agency, Nuclear Research Center, Karlsruhe, Federal Republic of Germany. Each panelist described the process by which research needs relating to water problems and potential performers of research are linked in their respective countries, how research needs are identified and prioritized, and methods for dissemination of the results of research.

E.H. Bryan emphasized the roles of individual investigators in proposing projects for support and that of peer reviewers, external to the National Science Foundation, in guiding the decision regarding selection of projects for support. Investigators are encouraged to publish their findings in the open, scientific and technical literature and any final reports received are made available to the public through the National Technical Information Service, U.S. Department of Commerce. Coordination of research and assistance in identification of research needs is accomplished by support of conferences and workshops. International cooperation is encouraged that promises significant benefit to U.S. science and engineering through formal, bilateral programs and by ad hoc arrangements between U.S. and foreign institutions on behalf of investigators who apply for support through their own respective funding agencies.

F.A. DiGiano reviewed the process that led to a conference supported by the National Science Foundation on Fundamental Research Needs for Water and Wastewater Systems that was held in December of 1982 in Washington, D.C. He emphasized the significant role played by representatives from industry, consulting engineering firms, and the cooperation of the U.S. Environmental Protection Agency in the structuring and conduct of this conference and announced the current availability of its Proceedings from the Association of Environmental Engineering Professors, c/o D.F. Lawler, Department of Civil Engineering, University of Texas, Austin, Texas 78712, U.S.A.

K.J. Ives described the process by which research funds are allocated to the research community in the United Kingdom, noting that the principal funding agency is the Science and Engineering Research Council (SERC) which provides grants to universities and polytechnics based on proposals responding to special announcements or upon the initiatives of the investigators. Funds provided through these grants may be utilized for the usual costs of conducting the research except for academic staff salaries and institutional overheads - cost items that are provided for within the British concept of "dual support" viz. regular direct funding for universities already includes funds for conduct of both teaching and research, and research is expected of all academic staff. British universities may contract with government agencies, water authorities, and industries for conduct of research. Some support for research is also provided from private foundations. International collaboration with SERC funds may include short visits by United Kingdom scholars to other countries and provide for the support of visits of up to one year in duration by foreign academics to British universities, and for research by British scholars in selected developing countries.

P.E. Odendaal noted his country's emphasis on applied research, funds for which are obtained by a special tax levied on consumption of water. The Commission only engages others to conduct research through contractual arrangements that are closely monitored. The concept of technology transfer is strongly encouraged, the strategy for which is by encouragement of user involvement in all phases of the research. This is accomplished through formation of user committees relevant to publications that present results from research projects in a manner that relates those results to user needs. The Commission also provides support for demonstration projects.

S. Elmaleh emphasized the role of industry in supporting research on water issues in France. Pollution fees and fines are used to finance both the construction of pollution abatement facilities and for support of research. He also mentioned that much of the water related research is conducted by personnel employed by ministries on problems relating to their functional mission responsibilities.

W. Robel presented an overview of research project support procedures used by the Nuclear Research Center at Karlsruhe. Projects at universities are fully supported while research conducted by industries and municipalities receive only one-half of the necessary funds from his agency for conduct of projects proposed and accepted for funding. He pointed out that, being a small country, German researchers are generally aware of problems that require research and about research being conducted by their professional colleagues. He stressed the role of his Center in obtaining cooperation of scientists in government, industry and at universities by distribution of projects lists and the publication of final and special reports, the quality of which is achieved by a system of peer review. He also mentioned international cooperation through bilateral arrangements with selected countries for exchange of experiences, results of research projects, and development of research needs.

Audience participation followed presentations by the panelists. A significant issue emerging from this discussion was concern that unconventional, "far-out" concepts of merit might not receive deserving support as a consequence of the peer review processes that seemed generally common among all programs that were described by the panelists.