

# Challenges for the Environmental Work Force

by Larry J. Gordon

University of New Mexico



Recognizing the need to significantly improve the knowledge, skills and effectiveness of the environmental health work force, the Bureau of Health Professions, U.S. Dept of Health & Human Services, contracted with the Association of Schools of Public Health and enlisted the aid of Larry J. Gordon, Visiting Professor of Public Administration, University of New Mexico, to develop the report "Educating Environmental Health Science and Protection Professionals Problems, Challenges and Recommendations." What follows is the executive summary of that report.

The greatest challenges currently facing the environmental health science and protection work force include:

- **Inadequate emphasis on prevention, as opposed to curative efforts and clean-up.**

While the field of environmental health science and protection involves a perception and identification with prevention, a preponderance of effort is devoted to cleaning up problems created as a result of earlier decisions and actions taken by the public and private sectors. Environmental health science and protection personnel must become effectively involved during the planning and design stages of energy production and alternatives, land-use, transportation methodologies, resource utilization, and of product development which may have a negative impact on human health or the environment.

- **Inadequate ability to constructively and effectively impact the process of public policy development, implementation and constituency development.**

- **Inadequate managerial and organizational behavior skills.**
- **Inadequate knowledge of epidemiology.**

The majority of personnel in the environmental work force have had no training in epidemiology. This is a serious problem resulting in misdirected effort and poorly designed programs.

- **Inadequate knowledge of risk assessment.**

Environmental health science and protection programmatic decision-making should reduce risks to public health and safety. Such decisions require agencies to determine degree of safety. Risk assessment is the application of credible science to develop estimates of the likely effects of certain activities or processes.

- **Inadequate knowledge and skills regarding risk communication.**

Risk communication is not understood and effectively practiced by most environmental health science and protection personnel. Environmental health science and protection personnel must be skilled in identifying public concerns and public perceptions, enhancing public participation and involvement, communicating technical information consistent with public sensitivities, providing full information, understanding comparative risks, and in allaying unnecessary public concerns. Risk communication is usually considered to be an announcement, press release or speech.

- **Inadequate knowledge of environmental economics.**

It is essential that environmental health science and protection professionals have a basic understanding of the various impacts the economy has on the environment and environmental programs, and the effects of environmental programs on the economy.

- **Inadequate knowledge of global environmental health science and protection issues.**

These include overpopulation, ozone depletion, global warming, desertification, global toxification & deforestation.

- **Inadequate abilities to consider the need, net impact and effectiveness of proposed control measures.**

Environmental health professionals must be able to scientifically prioritize programs based on good epidemiology, risk assessment, environmental economics, net impact and program effectiveness.

- **Inadequate use of the holistic public health model.**

The public health model takes the community, nation or planet as the patient and, in principle, allocates resources to maximize health and environmental quality for all. The model more commonly used is the individual physician model. In this approach, once a pathology is diagnosed, everything possible is done to cure that pathology, without regard for resources, priorities or effects beyond the particular problem.

### **Leadership**

Environmental health science and protection professionals directing and administering programs should objectively evaluate their roles to determine whether they are leaders or followers in scientific, managerial, policy development and risk communication skills. Schools of public health and other graduate environmental health science and protection program faculty should also evaluate their efforts and the competencies of their graduates. The following may be useful questions for professionals, schools, programs and accrediting bodies to consider.

- **Are environmental health science and protection professionals addressing current and emerging issues, or are they comfortably continuing only those activities which are already approved?**
- **Are environmental health science and protection professionals leading or resisting changes in organizations, programs and goals?**
- **Are they effectively directing public and political attention to real priorities rather than emotionally perceived priorities?**

- Do they have the requisite knowledge and skills to assess risk, manage risk and communicate risk?
- Do they understand and practice the skills and political interaction involved in the development and implementation of public policy?
- Are they seeking political and exempt roles at levels where policy is proposed, debated and adopted?
- Are environmental health science and protection professionals seeking and filling policy-level environmental health science and protection positions in the full spectrum of federal, state, local and private sector environmental health science and protection organizations?
- Are schools of public health and accredited programs teaching environmental health science and protection professionals the knowledge and skills essential to leadership roles?
- Do environmental health science and protection professionals understand and practice the art of networking and constituency development?
- Do civic and political leaders recognize environmental health science and protection professionals and seek their opinions, guidance and expertise?
- Do environmental health science and protection professionals insist that alleged problems be adequately defined and quantified prior to proposing solutions and programs?
- Do they understand and communicate the net environmental, health, economic and social effects of proposed programs?

### Conclusions

Environmental health science and protection programs are components of a wide variety of public agencies and private organizations, not only organizations titled "health departments." The field of environmental health science and protection is diverse and complex. Environmental health science and protection functions are scattered throughout a wide variety of governmental agencies. There is no central comprehensive listing of environmental health science and protection programs by state.

**Environmental health science and protection is an integral component of the continuum of health services, and environmental health science and protection services are essential to the efficacy of the other components of disease prevention, health promotion and health care.**

**Access to health services must include access to effective environmental health science and protection services whether at home, work, play or traveling. Such total access requires availability of environmental health science and protection professionals.**

**There is a national deficit in quality and quantity of goal-oriented, interdisciplinarily educated environmental health science and protection professionals at all levels of government and industry.**

**Protection of the environment is a basic governmental responsibility. Most environmental health science and protection programs are based on federal mandates and needs. Therefore, solving the environmental work force problem should be a federal government priority.**

**The quality and quantity shortage of environmental health science and protection professionals is a major obstacle to public and private efforts to prevent and solve environmental health science and protection problems.**

**Recommendations contained in *Healthy People 2000* and other national reports cannot be fulfilled without significantly enhancing the quality and quantity of the nation's goal oriented, interdisciplinarily trained environmental health science and protection professionals.**

**Additional effort and funding are necessary to insure a supply of properly educated baccalaureate and graduate level environmental health science and protection professionals for the field of practice as well as for research efforts.**

**Environmental health science and protection training and education efforts should be directed to environmental health science and protection education objectives and to current and future challenges of the field of practice.**

**Academia and governmental agencies have not successfully directed efforts to primary prevention of environmental health science and protection problems. To do so, will require competencies in conducting environmental planning, involving land use, energy alternatives, product and process design, resource consumption, transportation**

methodologies, ecological disturbances and involvement in economic development and public education. This lack of emphasis on prevention exists, in part, because schools and programs have not imparted these skills to students.

Education and training needs include properly designed, accessible short-courses and seminars to enhance the knowledge and skills of those already in the environmental health science and protection work force.

Accreditation processes and criteria need considerable improvement and should address the needs of the field of practice.

There is no national environmental health science and protection data collection system to determine programmatic responsibility, expenditures and personnel needs of state and local governments.

Inadequate coordination exists among various federal agencies regarding education for environmental health science and protection professionals.

Each state should have an Environmental Health Science and Protection Institute for development and dissemination of knowledge, including provision of technical assistance.

## **Recommendations**

Enactment of and funding for a National Environmental Health Science & Protection Education and Training Act should be a top priority of the Health Resources & Services Administration (HRSA), and should include funding for continuing In-Service Environmental Health Science and Protection Short Courses. This should be done by January, 1993. Funding priority for graduate environmental health science and protection should be given to proposals based on the proposed environmental health education objectives which are geared to addressing current and future environmental health science and protection challenges.

HRSA should develop a Cooperative Agreement with the National Environmental Health Science and Protection Accreditation Council to improve criteria and procedures and gain Office of Education and COPA approval by Jan. 1, 1992.

**Obtain and tabulate information to indicate environmental health science and protection agencies responsible for the wide array of environmental health science and protection programs in each state by December 31, 1991.**

**Develop a comprehensive environmental health science and protection data collection system which will accurately indicate state and local government:**

- **programmatic responsibility by agency**
- **programmatic expenditures**
- **types of personnel for each program**
- **numbers and types of personnel needed**

**Provide financial incentives for developing an Environmental Health Science and Protection Institute within a university in each state, in accordance with the IOM Technical recommendation and the recommendation of the federal Office of Management and Budget.**

**Develop an effective environmental health science and protection education and training coordinating mechanism involving Department of Health & Human Services, Environmental Protection Agency, Occupational Safety and Health Administration, Department of Defense and Department of Energy by January 1, 1992.**

**By year 2000, the number of properly educated environmental health science and protection professionals in the work force should be increased from 80,000 to 180,000.**

**Ensure that the foregoing are promptly implemented, to the end that all of the environmental health, occupational health and safety, unintentional injury, food protection and sensitive environmental disease recommendations contained in *Healthy People 2000* may be attained.**

**Recognize that the foregoing recommendations are essential to fulfilling the recommendations of *Healthy People 2000*, the IOM "Report on the Future of Public Health," The Public Health**

**Faculty/Agency Forum, The EPA report "Reducing Risk," the "Report to the President and Congress on the Status of Health Personnel in the United States," and the stated personnel needs of the Department of Defense and Department of Energy.**

**A copy of the full report, "Educating Environmental Health Science & Protection Professionals: Problems, Challenges & Recommendations," may be obtained by contacting:**

**Barry S. Stern MPH  
Bureau of Health Professions  
Room 8C-09 5600 Fishers Lane  
Rockville, MD 20857.**

**E.N.D./FALL 1991**