

## **ENVIRONMENTAL FELLOWS PROGRAM - PROFESSIONAL DEVELOPMENT IN ENVIRONMENTAL MANAGEMENT FOR EMERGING WORLD LEADERS**

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### **ABSTRACT**

A unique program, the "Environmental Fellows Program (EFP)," has been established by the Waste-management Education & Research Consortium. The mission of the program is to expand the world's capability to address issues associated with the management of wastes. This mission will be accomplished by establishing a world-wide community of highly qualified administrators, engineers, and scientists in the field of environmental management. The EFP is the only program in the world that provides intensive graduate level training to world leaders emerging from academia, government, and industry. Through this program, future strategies of the international community of leaders will be directed with an understanding of the technology, economics, the risk awareness, and other issues related to environmental management. The program includes five components.

- Professional Fellows Training Program,
- Graduate Fellows Program,
- Colloquium series featuring world-class experts in environmental management,
- Annual international conference focusing on a timely, relevant, specific issue of environmental management, and
- Practical internship.

The Professional Fellows Training Program and Graduate Program are provided to individuals selected from industry and government on the basis of their technical and administrative abilities. These Fellows receive intensive graduate level training at a New Mexico university in an area relevant to environmental management. This program has been initiated with nine Fellows from Mexico selected jointly by the Mexican authorities and the U.S. The Colloquium Series is designed to bring the Fellows together on a frequent basis to discuss specific environmental issues, thus using their expertise to shed light on a major international environmental issue. The conference on environmental management. The practical internship will be made available to the Fellows who desire practical experience at a government laboratory, university, or industry.

### **INTRODUCTION**

The Environmental Fellows Program (EFP) managed by the Waste-management Education and Research Consortium (WERC) and is funded by the Department of Energy (DOE). Future sponsors may include the Administration of International Development (AID) and U.S. Industry.

WERC, which was approved and funded by the DOE in 1990, recognized the need to establish a world-wide community of experts in environmental management. Further, WERC had previously established the necessary infrastructure to successfully implement such a program. WERC membership consists of New Mexico State University (NMSU), the University of New Mexico (UNM), the New Mexico Institute of Technology (NMIMT), the Navajo Community College (NCC), Sandia National Laboratories (SNL), and Los Alamos National laboratory (LANL). WERC is the first consortium in the U.S. to establish an integrated research and education program in the area of environmental management.

### **MISSION OF THE ENVIRONMENTAL FELLOWS PROGRAM**

The long-range mission of the EFP is to establish a world-wide community of highly trained and qualified administrative and scientific experts in the field of environmental management. The short-term mission of the EFP is to provide for the education, technology transfer, and personal interactions for current and promising leaders in the environmental management field.

### **DESCRIPTION OF THE ENVIRONMENTAL FELLOWS PROGRAM**

The EFP will simultaneously administer the five components listed below:

- Professional Fellows Training Program,
- Graduate Fellows Program,
- Colloquium series featuring world-class experts in environmental management,
- International conference focusing on a timely, relevant, specific issue of environmental management, and

- Practical internship.

Each program component is described below.

### **Professional Fellows Training Program**

The goals of the Professional Fellows Training Program include the following:

- Enhance the careers of current managers and scientists dedicated to careers in environmental management,
- Encourage and enable personnel from industry, government, and academia to be trained in, and pursue, careers in environmental management,
- Enhance the establishment of a worldwide community of experts in the field of environmental management, and
- Enhance technology transfer both world-wide and within the U.S.

The Professional Fellows Training Program will be a continuous, full-time, short term (one to nine month) series of intensive short courses and lectures dealing with all aspects of environmental management including: science, engineering, law, economics, public policy, and environmental issues. The program will be conducted on the three campuses (NMSU, UNM, NMIMT) depending on the specific educational needs of the Professional Fellows and the technical or administrative expertise available at the university, and will require a full-time commitment from the participants. The program is designed to provide the opportunity for the Professional Fellows to participate in both the monthly colloquium and the annual international conference on environmental management. The Professional Fellows Training Program curriculum will be developed with assistance from an EFP Advisory Board which will be formed in the early stage of the program. Although most courses and lectures will be presented in person, the infrastructure of WERC's interactive television instructional network will be utilized when appropriate. The course instructors and lecturers will be selected from the WERC membership or from other experts throughout the U.S. as well as the international community.

The Fellows will be selected worldwide from prominent or promising scientists and/or managers from industry, government, and academia. The formal selection criteria will be established with assistance from the EFP Advisory Board. The Fellows should be committed to a future in environmental management in order to contribute to the mission of the EFP. The fellows will consist of approximately 20 U.S. and 10 international participants who will be assigned to spend one to nine months (full-time) on the appropriate campus.

Upon completion of the program, the fellows will be awarded a Congressional Certificate of Completion in Environmental Management. Further, each fellow will be given the option of participating in an "experience" session at one of the national laboratories or DOE or industry sites. the length of this assignment will vary according to the Fellows schedule and availability of a host.

All Fellows income, travel, and living expenses during their participation in the Professional Fellows Training Program will be provided by their sponsor. The EFP will assume responsibility for all other expenses of the program including tuition, books, associated fees, etc.

### **Graduate Fellows Program**

The goals of the Graduate Fellows Program include the following:

- Educate students in the areas of science, engineering, economics, and public policy to enhance their technical and administrative capabilities related to environmental management, and graduate
- Increase technology transfer between the U.S. and the other countries of the world.

Initially, approximately 10-20 students will be selected to participate in the Graduate Fellows Program. The Fellows will enroll in the graduate school and academic department at one of the WERC universities. Attendance at more than one of the universities during the program is optional and will be a function of the Fellow's course selection and graduate program plan. The program will terminate with the Fellows receiving a master's degree. All Fellows will be allowed a maximum of 24 months to complete the degree requirements.

This prestigious group of Fellows, to be selected from candidates nominated by industry, government, and academia, will be required to meet the graduate entrance requirements at the WERC university of their choice. The Fellows will choose from three master's degree options: M.S. degree in Environmental Engineering, Master of Engineering degree in Hazardous Waste Management, or an M.S. degree in an area relevant to environmental management. Each Fellow will be required to provide transportation and living expenses through self-sponsorship. Tuition, fees, books, medical insurance, and a half-time research assistantship will be provided by the EFP.

An "experience session" at one of the national laboratories or DOE or industrial sites will be optional depending upon availability. this session will be arranged for summer periods, between semesters, or at the completion of the Fellows degree.

### **Colloquium Series on Environmental Management**

The goal of the colloquium series is to provide the public with information relevant to environmental management from a world-wide perspective. Leading experts from environmental management or a related field will be scheduled for a monthly seminar to be presented at one of the WERC member locations. The colloquia which can be televised to other WERC sites, will be advertised and made available to the general public. The colloquia will also include a "brainstorming" session where the Professional and Graduate Fellows and other participants can meet to discuss the world-wide issues related to environmental management.

### **International Conference on Environmental Management**

The goals of the International Conference include:

- Increase world-wide technology transfer, and
- Enhance professional interaction of international experts.

The conference will focus on a specific, central environmental management issue, will be held annually, and will address all aspects related to the central issue including technical, legal, social, economics, etc. World leaders will be recruited as session and workshop participants. The first conference will be scheduled to coincide with the completion of the individuals participating in the Professional Fellows Training Program and the Graduate Fellows Program. The conference will be held in New Mexico at a location to be determined based on the central issue.

### CONCLUSION

The EFP presently supports ten Mexican students under the International Graduate Program. The Fellows were selected from a group of faculty members nominated for leave of absence from teaching and research responsibilities from the Technological Institutes (Institutos Technologicos) in Mexico. Seven Fellows are enrolled at NMSU, one at UNM and two at NMIMT. The Fellows are pursuing M.S. degrees in engineering (civil, electrical, industrial, mechanical, and

water resources), chemistry, and hydrology. the Fellows initiated their studies in January 1993. For the present, the Colloquium Series has been incorporated into the weekly Environmental Management Seminar which is offered at each campus during the fall and spring semesters. The weekly seminar is sponsored and coordinated by the WERC program. The International Fellows Training Program and the Professional Conference are presently in planning stage.