

**National Health and Environmental Effects Research Laboratory
Director, Integrated Systems Toxicology Division**

Background

This position is located in the Integrated Systems Toxicology Division (ISTD), National Health and Environmental Effects Research Laboratory (NHEERL), Office of Research and Development (ORD), Research Triangle Park, North Carolina. NHEERL is responsible for formulating and implementing a comprehensive research program to investigate the effects of environmental pollutants and other anthropogenic stresses on human health and the ecosystems in which we live. NHEERL is the focal point for toxicological, clinical, epidemiological, and ecological research within the Agency. NHEERL scientists utilize a broad range of molecular, cellular and animal assays and models in support of the Agency's health and ecological risk assessment processes. These include the application of predictive pharmacokinetic/pharmacodynamic models, ecosystem function theory, and advanced extrapolation methods to improve the scientific underpinnings of the Agency's risk assessments and regulatory/policy decisions. In addition to its intramural research, NHEERL fosters collaborative research projects with other government agencies and academic and other scientific institutions to complement NHEERL mission-oriented efforts as well as to insure that the Agency has the benefit of the highest quality peer-reviewed science. NHEERL has seven major components; three are located in North Carolina and four are geographically dispersed in Oregon, Minnesota, Florida and Rhode Island.

This is a five year, renewable, term position under the Agency's Title 42 Program. The incumbent of this position is recognized as an expert in the area of the assessment of the impacts of perturbations to toxicity pathways, preferably employing a systems biology approach. This expertise includes the integration of toxicological responses at the molecular, cell, organ and organism levels using experimental and computational approaches.

Major Duties and Responsibilities

The incumbent is responsible for scientific leadership of the Division and has substantial hands-on involvement and participation in the scientific research of the Division. It is expected that the incumbent will serve as a leader in the development and oversight of a new and innovative, integrated systems toxicology research program that will incorporate a variety of disciplines including systems biology, molecular biology of disease, molecular genetics, in vitro cellular models and pharmacokinetic biologically-based dose-response and computational modeling. In the framework of the recently reorganized NHEERL health program, the incumbent will coordinate the ISTD program with the Toxicity Assessment Division and the Environmental Public Health Division. In addition, the incumbent will serve as a lead for developing collaborative research projects with entities outside NHEERL, both within and outside the Agency. The ISTD Director will serve as a lead for communicating the impact of the research both to partners within the

Agency and to entities outside the Agency. The incumbent will have substantial oversight and involvement in directing the research of the ISTD staff. It is anticipated that the incumbent will spend approximately 40% time in the broad oversight of research and in the development of new research directions; 40% time in supervision and mentoring; and 20% serving as an expert to other NHEERL programs and leading the broader program across ORD. Responsibilities will include:

1. Serves as the Director for the Integrated Systems Toxicology Division. In this scientific leadership role, the incumbent plans, develops, oversees, directs, and implements a highly technical and complex science research program that has nationwide impact and a staff of approximately 82 employees located in RTP, North Carolina.
2. Serves as leader of an integrated research program utilizing a systems biology approach to describe normal biological, homeostatic processes and to identify key events that signal departure from those processes leading to adverse health outcomes. Research seeks to develop an integrated framework across health endpoints through the identification of toxicity pathways. This approach is accomplished by the use of computational models and cellular, molecular and in vivo approaches to identify “key events” for biologically based dose-response models; the development of physiologically based pharmacokinetic models for linkage to biologically based dose-response models; and the application of genetic/epigenetic approaches for understanding differential life-stage sensitivities.
3. Serves as a member of the Senior Leadership Research Coordination Committee that will prioritize research projects for NHEERL Health Divisions.
4. Serves as senior spokesperson/representative for ORD in the area of toxicity assessment, including participation on workgroups within and outside EPA.
5. Working in close coordination with appropriate management and staff across all NHEERL Divisions and ORD laboratories and centers, the incumbent will seek to maximize integrated, multidisciplinary collaborations in addressing the Agency’s high priority science issues. In a similar manner, the incumbent will proactively seek to influence the research agendas of outside research organizations and further collaborative opportunities.

Extramural Resources Management

This position has no extramural resources management responsibilities.

Supervisory Controls

The incumbent will report to the NHEERL Associate Director for Health. The supervision provided to the incumbent is in the form of guidance at the research and

administrative levels. The nature of the supervisory relationship is characterized by a high degree of confidence in, and reliance on, the incumbent's productivity, competence, and judgments such that there is an unusual level of support for his/her recommendations. It is expected that the individual selected to fill this position will be recognized by management as a leader responsible for planning, designing, and managing research programs. Interpretations, recommendations and conclusions made by the incumbent which have major impact on matters of great urgency and significance are furnished to other agencies and the professional community without reference, to or knowledge of, higher authority in the Agency.

Qualification and Scientific Contributions

The incumbent must have a doctoral degree in a scientific discipline related to ISTD's research. He/she should be nationally and internationally recognized as an authority and leader on complex problems of concern to EPA for which integrated systems based approaches are relevant. The incumbent is expected to have received honors and awards from major national and/or international organizations for his/her accomplishments. He/she should be sought after as an advisor and expert on scientific and technological programs relevant to ISTD's mission. As evidence of his/her qualifications and scientific contributions, the incumbent may also: 1) hold elected position(s) in scientific societies; 2) serve on journal editorial boards; 3) have received an extensive number of invitations to write and speak on issues related to toxicological sciences; 4) have written numerous book chapters and peer reviewed publications in high quality journals; 5) serve in leadership roles on numerous task forces/committees; and, 6) have been an advisor to national and international institutions/governments.