

Moving Beyond Bibliometric Analysis: Emerging  
Evaluation Approaches at the National Institute of  
Environmental Health Sciences

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# AGENDA

- What is the Program Analysis Branch?
- Preliminary work in bibliometrics and evaluation.
- Goals for evaluation project.
- Initiating the contract.
- What were the tasks in the contract?
- Next steps
- Acknowledgments

# What is the Program Analysis Branch?

Created in 1998 to:

- Provide guidance in shaping the direction of the NIEHS grant portfolio through grant assignment and tracking, and coordination of division activities.
- Conduct long- and short-term scientific evaluation and analyses of grant programs to provide a basis for priority setting, decision-making, and strategic planning.
- Develop methodologies to conduct impact analyses to assure maximum benefits of research funding.
- Use results of program analyses to recommend areas for program development and to identify emerging emphasis areas for consideration by the Institute Director and advisory groups.
- Communicate high impact science and public health relevance of extramural research.

# Preliminary work in bibliometrics and evaluation

- Creation of SPIRES—The Scientific Publication Information Retrieval and Evaluation System
  - Joined PubMed data on ES publications to IMPACII grantee records
  - Enabled tracking of publications on a program-, not just grant-level.
  - Tested by NIEHS, NICHD, and NIA over a period of 4 years
  - Became an NIH Enterprise System in FY2008. Contains 1.2M NIH-supported publications from 1985 to the present day and is updated daily. Is searchable by grant/s, author, date, journal, key word, etc.
- Evaluations/Analyses
  - Small Grants Program
  - Microarray Supplement
  - Centers Program
  - Program Project Grant Analysis
  - Method to Extent Research in Time (MERIT) Program Analysis

## Goals for Evaluation Project

- To develop additional tools for analysis/evaluation.
- To determine the possibilities of tracking inputs to outputs to outcomes. Is NIEHS research making a difference in the regulatory and public health arenas?
- To search for outcomes beyond publications/bibliometrics
- To provide assistance in understanding the full impact of particular research portfolios.
- For setting priorities and making hard decisions in times of lean budgets.
- To augment available expertise in DERT.

# Initiating the Contract

- *Ad hoc* committee from within DERT to identify key scientific portfolios that would benefit from an evaluation or assessment.
  - Assessment – internal tool for gauging portfolio balance. No expert panel review.
  - Evaluation – larger study involving an expert panel which puts contributions into a larger context and aids in understanding past performance as well as current and future opportunities.
- Topics considered
  - Asthma**, air pollution, metals, oxidative stress, Environmental Genome Project, Small Business Innovative Research Program, Community-Based Participatory Research Program, **development of tools to assess public health impact**, productivity by mechanism, impact of Worker Training Program, **endocrine disruptors**, neurosciences
- Selected Battelle Centers for Public Health Research and Evaluation as the contractor based on prior experience, proximity, and history of evaluating HHS/NIH research programs.
- Task Order Awarded September 2005.

## What are the tasks in the contract?

### Work Assignment 1—Literature Review on Research Impact Assessment Methods and Concepts

Status: complete

#### Highlights/Recommendations:

- Engel-Cox JA, Van Houten B, Phelps J, Rose SW. Conceptual model of comprehensive research metrics for improved human health and environment. *Environ Health Perspect.* 2008 May;116(5):583-92. Review.
- Development of a Logic Model that details the connections between inputs, outputs, and outcomes.
- Identified potential metrics and indicators that link back to their source and forward to their area of influence.
- Conducted a thorough literature review
- Expert Panel review by: Goldstein, Jordan, Melkers, Monroe, Pahl, Wogan

## What are the tasks in the contract?

Work Assignment #2—Asthma Research Evaluation (existing data)

Status—Complete-Final Report received 4/3/2007

Feasibility Assessment

- Are data available for all the components of the logic model?
- Do the available data help answer our main evaluation questions?

Expert Panel Review (Eggleston, Holian, Leaderer, Mayrides, Peters, Postlethwait)

Work conducted in 2006/2007.

Manuscript in preparation.

## What are the tasks in the contract?

Work Assignment #3—Primary Data collection of end users of asthma data.

Status: Underway. OMB Clearance applied for and received after long delay. Survey data gathering is complete.

Targets were asthma researchers, regulators, and end users such as clinicians, educators, and business and industry representatives.

Statistical analysis and report preparation in progress.

Carlyn Orians and Joanne Abed will present findings.

## What are the tasks in the contract?

Work Assignment #4—Assessment of Endocrine Disruptor  
Research Portfolio

Status: Complete--Will aid in setting priorities in relation to recent  
ED meeting.

## Next Steps

- Publish findings in peer reviewed journals.
- Explore options for better tracking NIEHS research into regulations.
- Continued evaluation activities

- Global Environmental Health article

Drew CH, Barnes MI, Phelps J, Van Houten B. NIEHS Extramural Global Environmental Health Portfolio: Opportunities for Collaboration. Environ Health Perspect. 2008 Apr;116(4):421-5.

- Institutional Trainees/Trainee Tracking Database

- Bibliometrics – NIH groups linking citation data along with publication data to grants

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- Expert Panel Members
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