

Overview of RFA 14-3
***Assessing Health Effects of Low
Levels of Air Pollution***

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Quoting Julius Caesar ("veni, vidi, vici,")

Planning Group: Jay Lubin, Richard Smith, and
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- We held a workshop to develop and refine research questions around “low-dose” exposures.
- We wrote a RFA (14-3).
- We solicited responses.
- We reviewed them.
- Some were funded.



OVERALL OBJECTIVES OF RFA 14-3

- **Fund studies to assess health effects of long-term exposure to low levels of ambient air pollution**, including all-cause and cause-specific mortality and morbidity endpoints. Studies should analyze and evaluate **exposure-response function(s) for PM_{2.5}** and other pollutants at levels currently prevalent in North America, Western Europe, and other high-income regions and may also address related questions about health effects at low levels of ambient air pollution.
- **Develop statistical and other methodology** required for, and specifically suited to, conducting such research including, but not limited to, evaluation and correction of exposure measurement error.



SPECIFIC OBJECTIVES OF RFA 14-3

- Compare and contrast alternative models and their uncertainty, e.g., threshold/non-threshold, linear/non-linear, and parametric/non-parametric, to characterize the exposure-response function(s) at low levels of ambient air pollution.
- Explore possible variability in effect estimates at low levels among populations, and identify possible contributing factors. Such factors may include age, socio-economic position, health status, and access to medical care, as well as differences in air pollution sources and time-activity patterns.
- Develop and evaluate exposure assessment methods suitable to estimate exposure to low levels of air pollution at various spatial and temporal scales in large study populations, including populations who reside in areas not covered by routine ground-level monitoring.
- Develop, evaluate, and apply statistical methods to quantify and correct for exposure measurement error in risk estimates and in characterization of exposure-response relationships.
- Develop and validate approaches to assess the impacts of co-occurring pollutants on health effect associations at low ambient concentrations.
- Develop and validate indirect approaches to correct risk estimates for the effects of important potential confounding variables, such as smoking, in the absence of such data at the individual level.
- Improve techniques for record linkage and methods for disclosure protection for optimal use of large administrative databases in air pollution and health research.



RFA Process

Advisory Committee to develop the initiative, consisting of some members of the Research Committee and outside consultants

Workshop held with leading researchers, sponsor experts in June 2014 to assist the Committee

RFA issued in December 2014

Preliminary applications due in February 2015 to demonstrate feasibility

Full applications due in July 2015



RFA Process

The response was strong: 39 preliminary applications received from research groups all over the world

We requested and subsequently received full applications from 8 teams

Three teams were recommended for funding after a two-stage review process: an external review followed by an internal review



Review Process

1. Independent panel of experts*

Rank the applications according to predefined criteria (e.g., relevance, scientific merit, competence, costs)

2. HEI Research Committee*

Focuses on the top-ranked applications, recommends applications for funding

3. HEI Board of Directors

Makes final funding decision

* Members with conflicts were recused from discussion and decisions, per HEI policy



THE BIG SMOKE



A history of air pollution in London since medieval times
PETER BRIMBLECOMBE

LONDON FOG

THE BIOGRAPHY



CHRISTINE L. CORTON