

Applicant Webinar for HEI RFA 21-1: Quantifying Real-World Impacts of Non-Tailpipe Particulate Matter Emissions

Health Effects Institute

October 19, 2021

10:00 am EDT

The meeting will begin shortly.

A few logistics before we start:

If you experience any logistical difficulties, please contact us using the **“Chat” box**. You can also email us at rshavers@healtheffects.org.

Please put your questions about the RFA and application process in the **Q&A box**.

After the webinar, HEI will post all questions and answers to the HEI website.



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Participation in the webinar is not a requirement to apply to the RFA.

The recording is for internal purposes only.

After the webinar, HEI will post all questions and answers to the HEI website.

Specific research ideas from applicants will not be discussed.



Today's Agenda

- 10:00 am EDT Welcome and Opening Logistics
Ms. Martha Ondras, Research Fellow, HEI
- 10:05 am EDT Introduction to HEI
Overview of the RFA and Expectations for Research Proposals
Dr. Allison Patton, Staff Scientist, HEI
- 10:30 am EDT Question and Answer Session
Dr. Jeff Brook and Dr. Allen Robinson of HEI's Research Committee and HEI staff are available to answer questions about the RFA and the application process
- 11:00 am EDT Webinar ends

*After the webinar, HEI will post all questions and answers to the HEI website.

Introduction to HEI

The Health Effects Institute

An independent, nonprofit corporation chartered to provide policy-relevant high-quality and impartial science

Funded jointly by government and the worldwide motor vehicle industry and, occasionally, private foundations

Funds research that is selected, conducted, overseen, and reviewed independently of HEI's sponsors

Does not take policy positions

HEI's goal is "simply to gain acceptance by all parties of the data that may be necessary for future regulation."

William Ruckleshaus
Former EPA
Administrator

Ensuring the Quality of Research Funded by HEI

Research Committee



David A. Savitz, Chair

Professor of Epidemiology, School of Public Health, and Professor of Obstetrics and Gynecology, Alpert Medical School, Brown University



Jeffrey R. Brook

Assistant Professor, Occupational & Environmental Health Division, Dalla Lana School of Public Health, University of Toronto, Canada



Francesca Dominici

Professor of Biostatistics and Senior Associate Dean for Research, Harvard T.H. Chan School of Public Health



Amy H. Herring

Sara & Charles Ayres Professor of Statistical Science and Global Health, Duke University



Barbara Hoffmann

Professor of Environmental Epidemiology, Institute for Occupational, Social, and Environmental Medicine, University of Düsseldorf, Germany



Neil Pearce

Professor of Epidemiology and Biostatistics, London School of Hygiene and Tropical Medicine



Allen L. Robinson

Raymond J. Lane Distinguished Professor and Head, Department of Mechanical Engineering, and Professor, Department of Engineering and Public Policy, Carnegie Mellon University



Ivan Rusyn

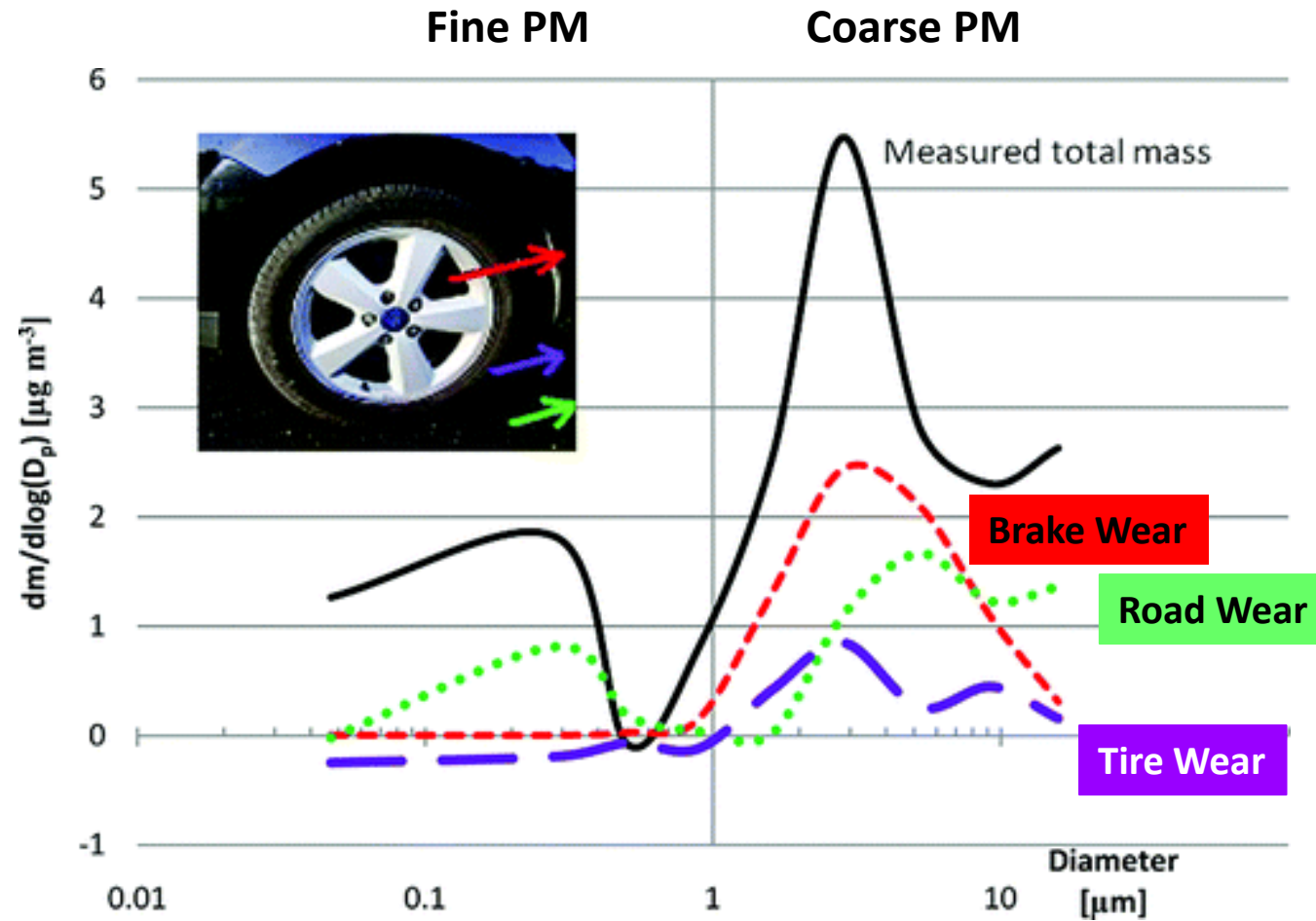
Professor, Department of Veterinary Integrative Biosciences, Texas A&M University

HEI staff work with the Research Committee on:

- Strategic planning
- Defining research needs in Requests for Applications (RFAs)
- Selecting and overseeing funded studies

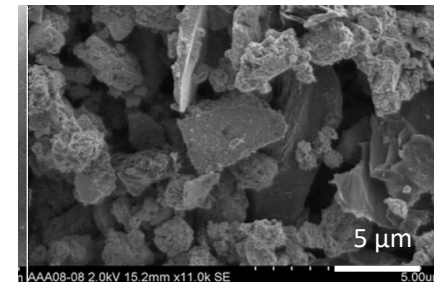
Overview of the RFA and Expectations for Research Proposals

What are non-tailpipe particulate matter emissions?

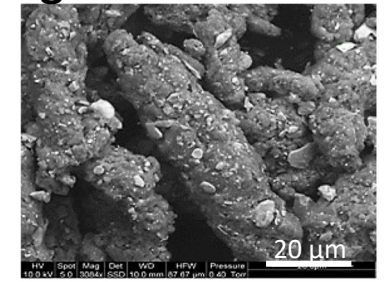


- Primary/directly emitted particles
- Mechanical abrasion \rightarrow larger particles
- Composition:
 - Brake Wear: metals (Fe, Cu, Zn, ...)
 - Tire Wear: microplastics, Zn
 - Road wear: crustal (Si, Al, Fe, Ca ...)
 - Resuspended road dust: Crustal

SEM images



Brake wear
(Kukutschová et al. Env Pol. 2011)



Tire/Road wear
(Panko et al. AE 2019)

Research needs for non-tailpipe particulate matter emissions in air

1. Improve characterization of non-tailpipe emissions.
2. Reach consensus on which measurements or combinations of measurements best represent non-tailpipe emissions for use in exposure and health studies.
3. Better characterize human exposures and health effects of non-tailpipe particulate matter.

For more background information

November 2020 workshop details and slides: <https://www.healtheffects.org/meeting/virtual-workshop-non-tailpipe-particulate-matter-emissions-and-exposure>.

Recordings and slides from a public webinar at HEI's Annual Conference 2021: <https://www.healtheffects.org/meeting/annual-conference-2021>.

Overall Objectives of RFA 21-1

Develop, evaluate, and apply real-world exposure indicators of non-tailpipe particulate matter emissions from motor vehicles and assess the impacts of such emissions on air quality, human exposure, and human health.

Identify and validate exposure indicators to characterize non-tailpipe PM emissions in near-road or ambient air.

Develop or extend existing approaches to measure non-tailpipe PM in the near-road environment.

Estimate current and future potential impacts of non-tailpipe emissions from passenger and/or commercial vehicles on air quality, exposure, and/or potential contribution of non-tailpipe emissions to health burden attributable to ambient PM_{2.5} mass.

Key Study Design Features

Consideration of Sources

Non-tailpipe PM sources, including tire, brake, and road wear and resuspension of dust from the road surface

Other sources, both tailpipe and non-vehicular

Pollutants

Justify selection of non-tailpipe pollutants

Include PM_{2.5} mass

No single-pollutant studies

Locations with similar air pollution to North America

Relevant for studying health effects of current fleet

Ease of application in later studies

Strong statistical analysis

Criteria for Evaluating Research Applications

Relevance to the objectives of the RFA

Scientific merit

Experience, competence, and diversity of the research team

Adequacy of facilities

Reasonableness of the proposed budget

Research Team

Principal Investigators

Researchers with advanced degrees (PhD, MD, or equivalent)

Affiliated with an eligible established research organization in a position that allows grant submissions

HEI will consider the characteristics of the entire proposed study team, including:

Past research and publication history

Access to resources needed to complete the research

We encourage diverse research teams (see the [NIH statement on populations underrepresented in the extramural scientific workforce](#) for additional information)

Eligible Organizations

Lead organization must be an academic or independent, non-profit, free standing research institution

Scientists from non-regulatory government agencies can participate but not lead a study

For-profit companies can participate as consultants

Staff of HEI sponsors are welcome to provide data and information to investigators just as they would any other member of the public

Budget

Maximum of \$800,000 (total budget) per study

- Indirect costs are capped at 30% (cannot be waived)
- Includes preparation of the final report

HEI expects to make available up to \$2.5M to fund up to 3 studies

Investigator Commitments

- HEI issues cost-reimbursement contracts (not grants)
- Guidelines for Quality Assurance / Quality Control and data sharing
- Biannual progress reports and site visits to ensure high quality
- Present a poster at HEI's Annual Conference
- Changes to proposed work or budget require Research Committee approval to ensure the study stays true to its original goals and the RFA
- Final reporting requirements

PLEASE REVIEW HEI'S PROCESS BEFORE APPLYING:

<https://www.healtheffects.org/research/investigators/commitments>

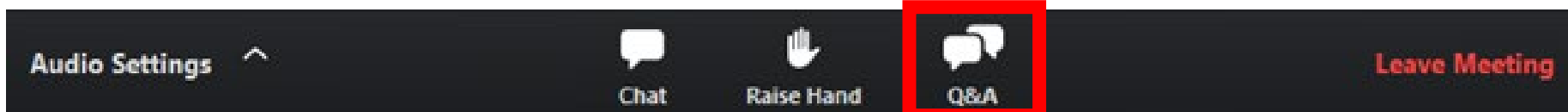
Important Dates

January 19, 2022	Preliminary applications due*
March 2022	HEI Research Committee discusses preliminary applications
May 25, 2022	Invited full applications due
July 2022	HEI Research Committee discusses full applications and recommends studies for funding
October 2022	HEI Board approves studies for funding
November 2022	Studies begin (2-3 year study duration)

*Email applications as bookmarked PDF attachments to funding@healtheffects.org.

Question & Answer Period

Please type your questions about the RFA and application process via the Q&A function. If someone else has already typed the same question that you have, please upvote that person's question.



Thank you for your interest!

Preliminary Application Deadline: January 19, 2022

Questions and answers from today, including any not answered during the webinar, will be posted on the HEI website in the coming days.

If you have additional questions, please contact apatton@healtheffects.org

For more information and application materials:

<https://www.healtheffects.org/research/funding/rfa/21-1-quantifying-non-tailpipe-PM-emissions>

For general questions related to the HEI application process, please visit:

<https://www.healtheffects.org/faqs>