

Atmospheric Modeling in Human Health & Climate Change Risk Assessment: Wildland Fire Smoke Exposures

Patricia D. Koman, PhD, MPP

Environmental Health Sciences

M | PUBLIC HEALTH

Wildfire Smoke has Widespread Health Effects



Project Summary

- Wildfires are projected to increase due to climate change
- Forest fires in Quebec resulted in a 30-fold increase in fine particles in Baltimore
- Total global deaths from landscape fire smoke ~260,000 to 600,000 annually (1997 – 2006)

Source: Third National Climate Assessment, Figure 9.3 MOUDIS, Land Rapid Response Team, NASA/GSFC

<http://nca2014.globalchange.gov/report/sectors/human-health>

Research Aims

- Catalyst grant: Resolve atmospheric model to propose for larger effort
 - Identify factors that increase vulnerability of people to wildfire smoke exposure
 - Determine health dose-response function

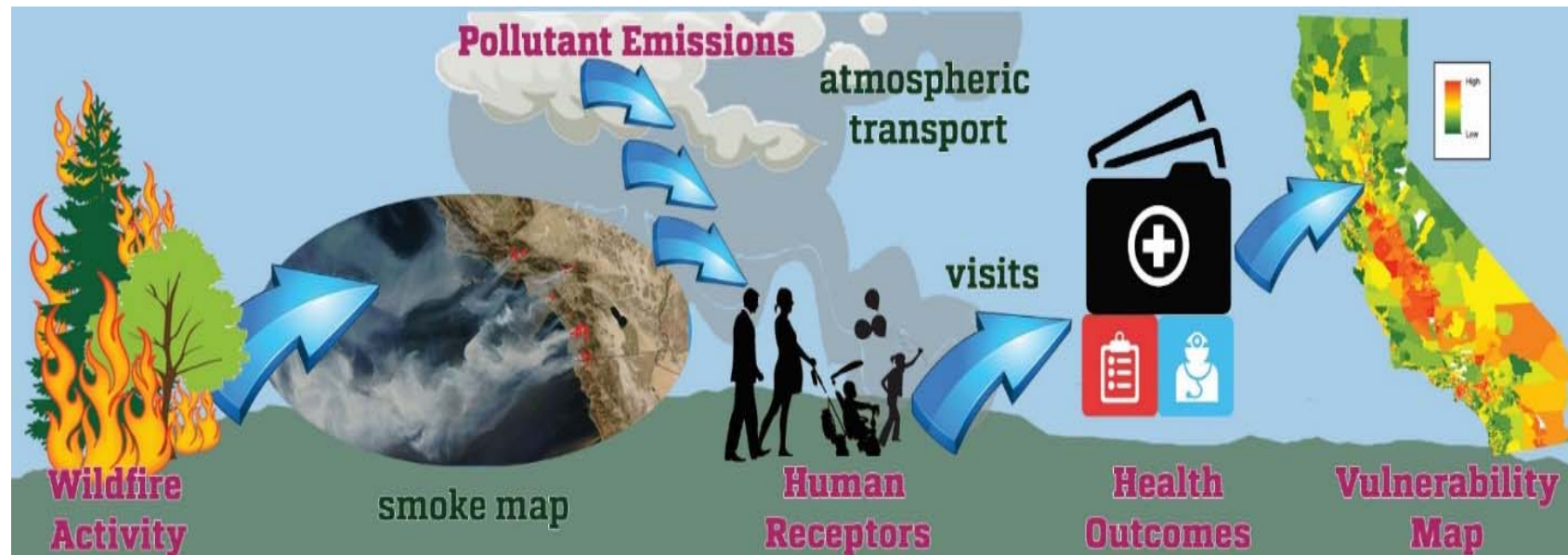


Figure 1: Conceptual overview for studying associations between wildfire smoke and health for mapping vulnerability.

Multi-Disciplinary Partners

- Government
 - California Department of Public Health
 - Sumi Hoshiko
 - US Environmental Protection Agency
 - Kirk Baker, Office of Air Quality Planning and Standards
- Academic
 - University of Michigan School of Public Health & College of Engineering
 - Allison Steiner, Marie O’Neill, Tim Dvonch, Trish Koman
 - Michigan Tech University
 - Nancy French, Shiliang Wu, Mike Billmire, Brian Thelen
 - University of Colorado at Boulder
 - Collen Reid

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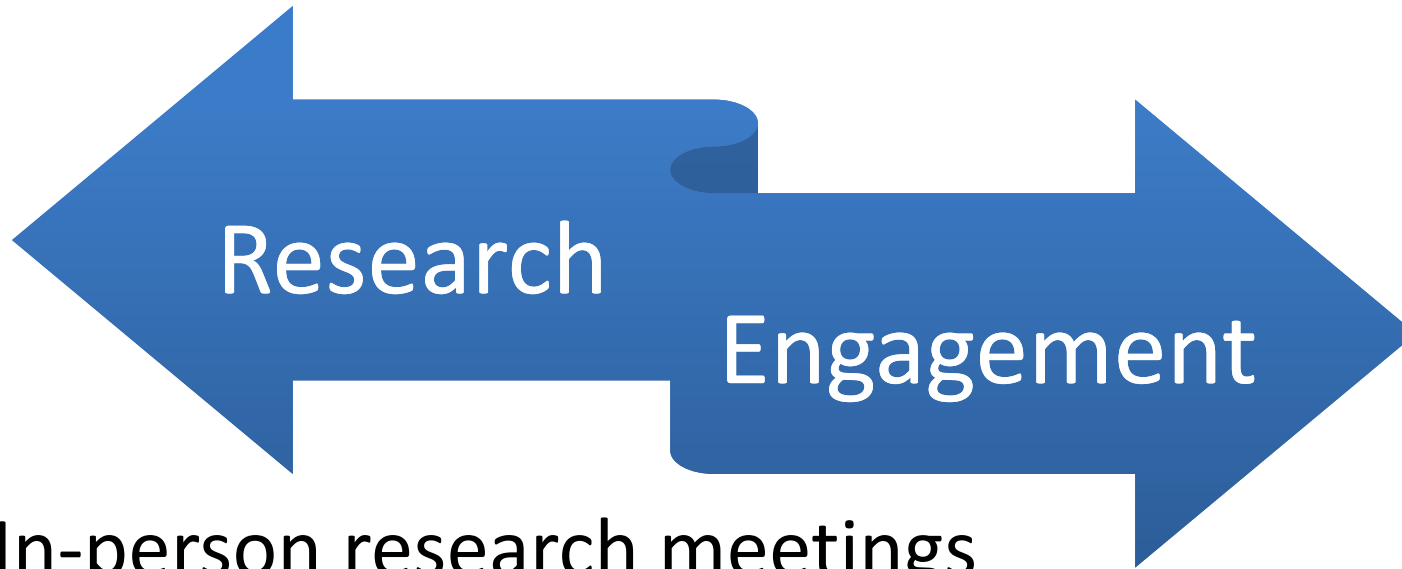


LIFESTAGE ENVIRONMENTAL EXPOSURES AND DISEASE CENTER

UNIVERSITY OF MICHIGAN



Advancing Scholarship



- In-person research meetings
 - National Institute of Health R01 proposal submitted (February 2017)
- Communicating results
 - Planetary Health (Boston, April 2017)
 - Developing manuscript

Thank you, sponsors and the team



Environmental Research Seminar
Global change, air pollution, & environmental health

Shiliang Wu, PhD
Michigan Technological University



Environmental Research Seminar
Health effects of the 2008 Northern California wildfires: a spatiotemporal approach

Colleen Reid, PhD
Assistant Professor of Geography, University of Colorado

Pictured below: Tim Dvnoch, SPH EHS; Marie O'Neill, SPH EHS & Epid; Allison Steiner, CoE CLASP. Not pictured: Mike Billmire, Brian Thelen MTRI; and Kirk Baker, USEPA



Pictured from left: Nancy French, MTRI; Sumi Hoshiko, Cal Dept of Health; Trish Koman SPH EHS, Colleen Reid, U Colorado

