

Wildfire smoke PM_{2.5} and health outcomes: 2022 Calf's Canyon/Hermit's Peak Fire, New Mexico

Olivia Sablan¹, Bonne Ford¹, **Colin Hawkinson**², Leiqiu Hu³, Jihoon Jung⁴, **Chelsea Eastman Langer**², Courtney Maichak⁵, Kamal Jyoti Maji⁶, Stephanie Moraga-McHaley², Armistead G. Russell⁶, Chris K. Uejio³, Melissa Vansickle³, Emily V. Fischer¹, Jeffrey R. Pierce¹, Sheryl Magzamen⁶

1. Colorado State University, Department of Atmospheric Science

2. New Mexico Department of Health

3. University of Alabama Huntsville, Department of Atmospheric and Earth Sciences

4. Florida State University, Department of Geography

5. Colorado State University, Department of Environmental and Radiological Health Sciences

6. Georgia Institute of Technology, Department of Civil and Environmental Engineering

HAQAST Showcase

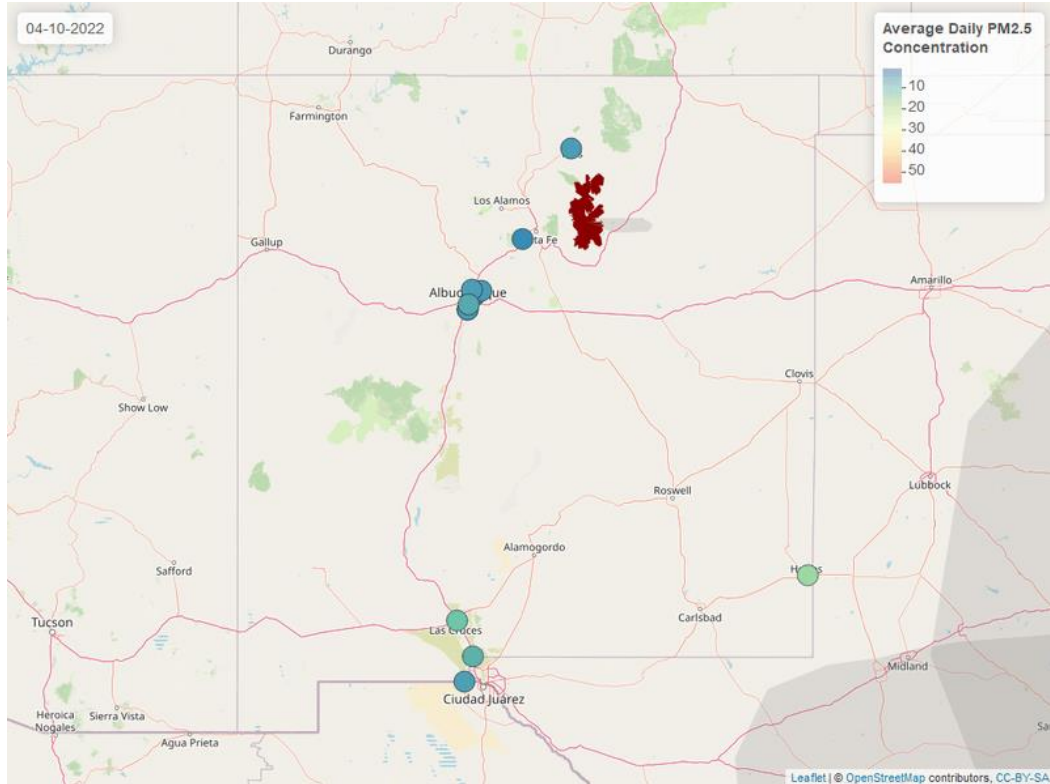
January 28, 2025

sheryl.magzamen@colostate.edu

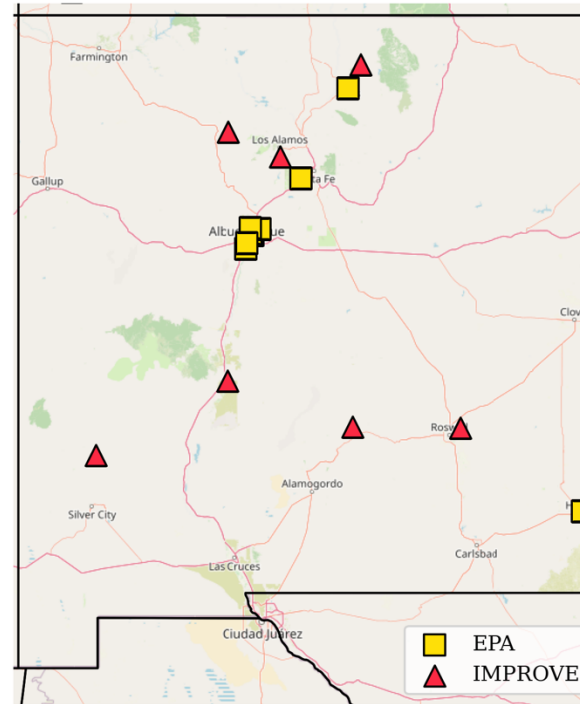


Colorado State University

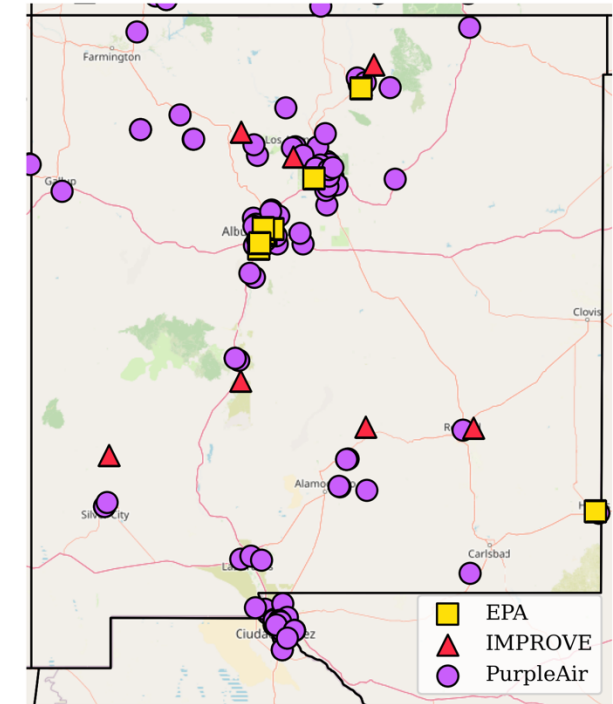
2022 NM Case Study



Hermit's Peak/Calf Canyon Fire
Hotspots, EPA Monitors + HMS Smoke Plumes

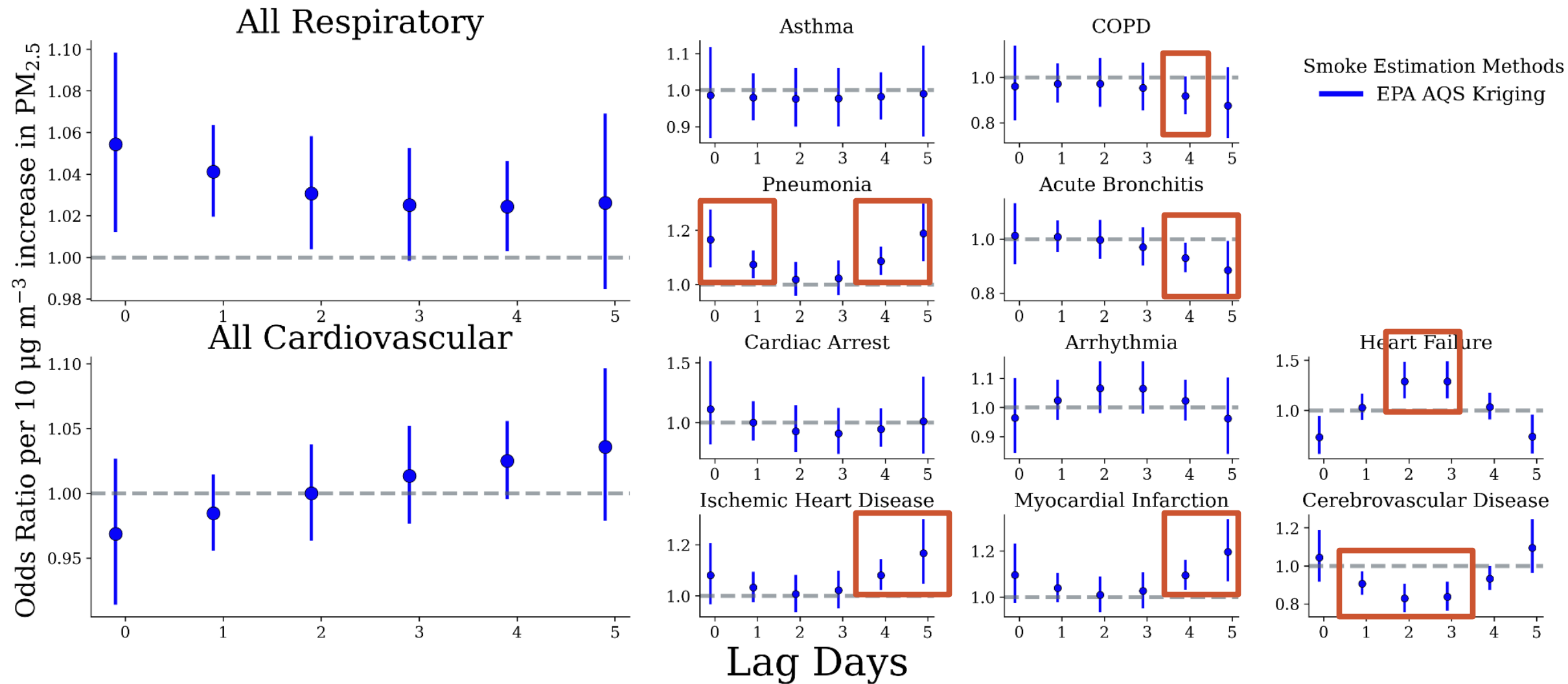


EPA Monitors + IMPROVE
Monitors



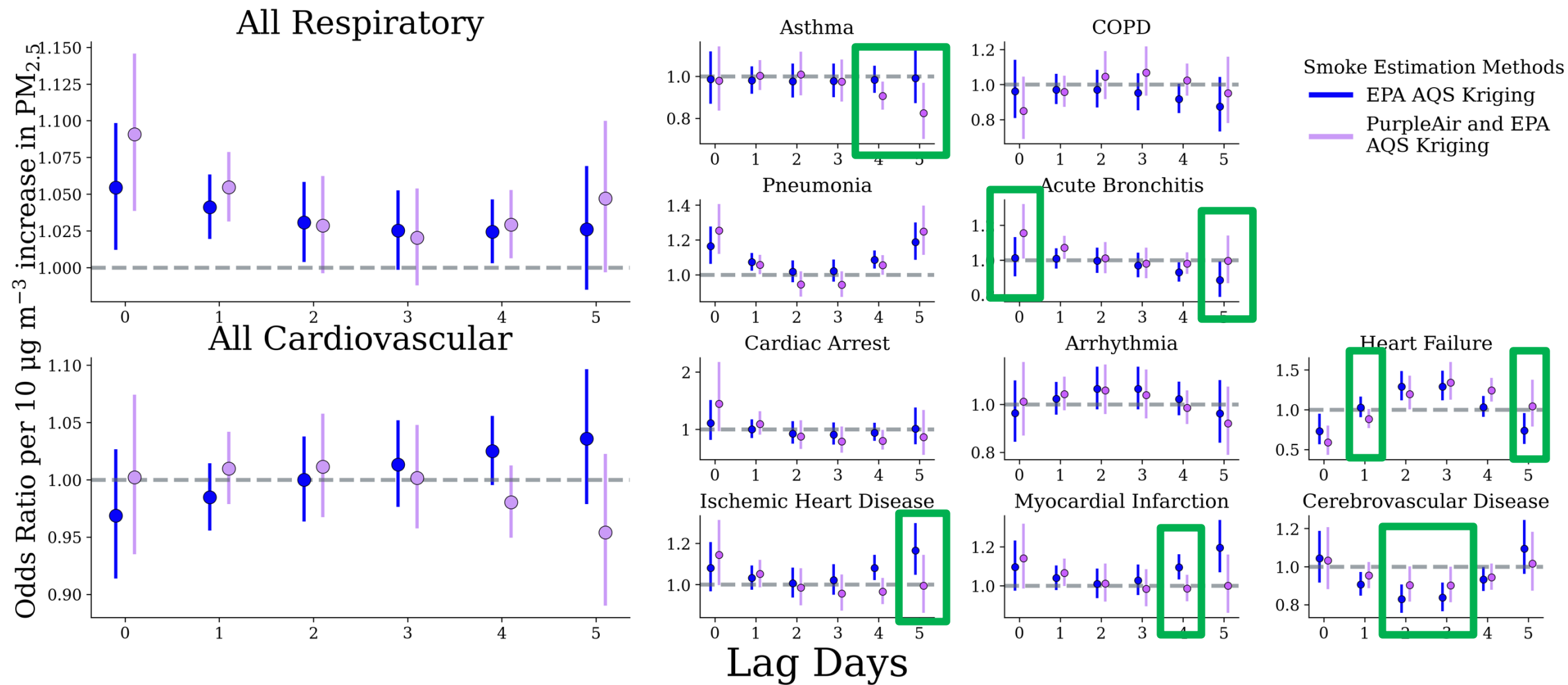
EPA Monitors, IMPROVE
Monitors + Purple Airs

2022 NM Case Study: Results



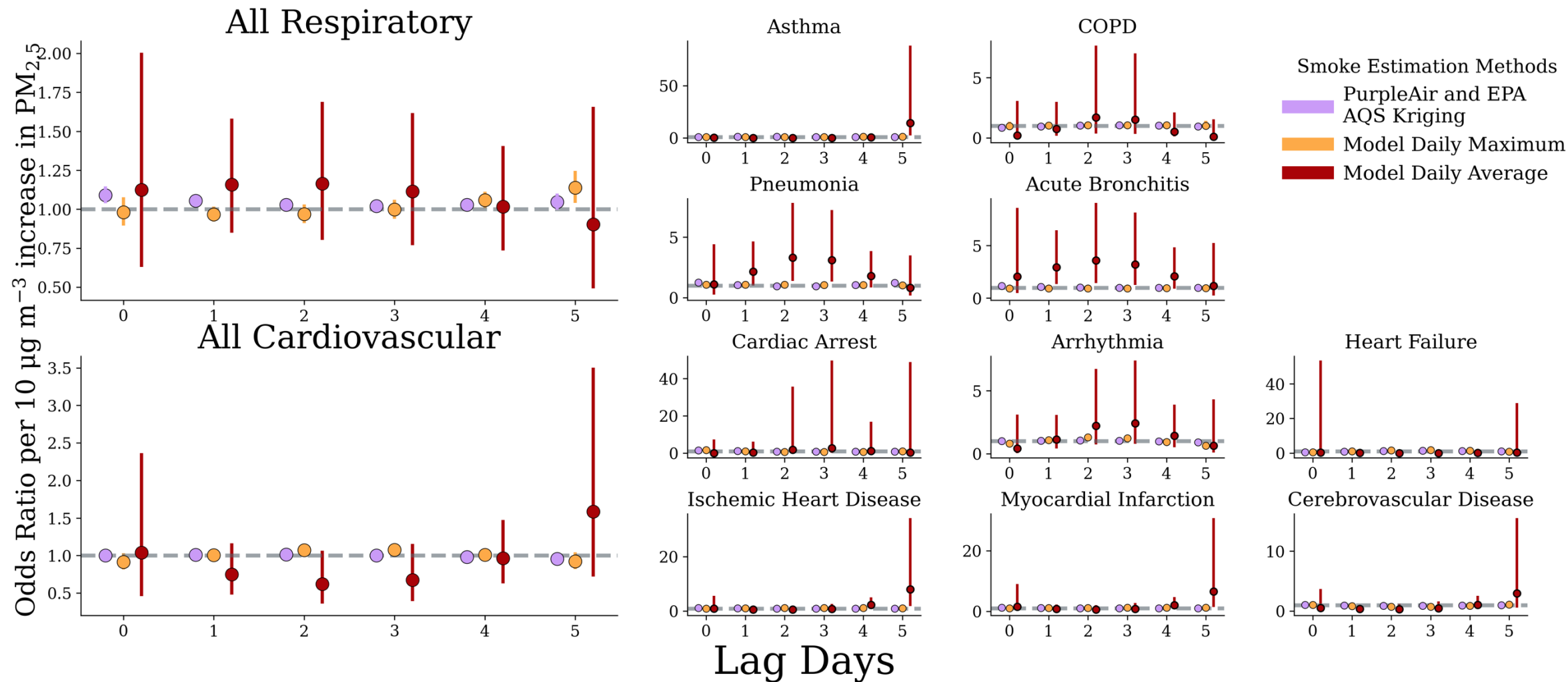
2022 NM Case Study: Results

April to September 2022



2022 NM Case Study: Results

April to September 2022



2022 NM Case Study: Discussion

Exposure assessment methods:

- Calf Canyon/Hermit's Peak fire hit a sparsely monitored and sparsely populated area of NM
- Limited EPA/IMPROVE monitoring; local Purple Air monitors may have helped calibrate results
- Purple Air monitors are not randomly distributed throughout the US
- Modeled data results approached measured data when daily max was used, rather than daily average

Epidemiological methods:

- Asthma was not the “bellwether” event we normally see for WFS studies
- Old mining town areas; potentially diseases of older populations more apparent