An **economic perspective on improving** public health outcomes during smoke events

the dismal science

Benefits of Reduced Wildfire Smoke Exposure	=	Change in health outcome = f(wildfire smoke exposure)	X	Unit Value: • Medical expenses • Lost wages • Averting/Mitigating expenses • Disutility

We know a few things….

Wildfire smoke makes people sick and can kill them (*change in Health Outcome*)

There are economic costs (*Unit Value*)

- 2003 Southern CA fires: $173M - $173B in mortality cost ($124 M in suppression)
- 2007 Southern CA fires morbidity: Excess hospital admissions + emergency department visits ~$3.4 M

Issues….

- Very few studies in US of the economic cost of wildfire smoke exposure
- Most economic studies use cost of illness
  - Assume no behavioral response to smoke
  - Some cases observe high PM levels but no change (or decrease) in emergency department visits (Kochi et al. forthcoming)

- Do not know much about averting behavior (1 study from Station Fire 2010, CA)
  - Willingness to pay for 1 less symptom day ~$90 vs $3 daily cost of illness ($17 if include lost leisure)

Moving forward…

Improve Cost of Illness Estimates

- Extent of population exposed
- Is it ok to use standard air quality dose/response fn?
- Actual smoke exposure (indoor/outdoor)
- Better measures of lost wages/leisure
- Medical costs (total cost, out of pocket)

Averting/Mitigating Behavior

- How prevalent?
- Why?
  - ✓ Messaging?
  - ✓ Experience?
  - ✓ Health?
- What are the behavioral responses?
- How does averting/mitigating affect health?