

Conclusions & Implications

- Striking role of arid foresummer in both data periods
 - Precipitation during this hottest and driest part of the year (AMJ), as opposed to other wetter seasons, is most favorable for *Coccidioides* growth in the environment
 - Antecedent foresummer precip alone has cross-val. R^2 of 0.27 with cocci
 - Typically a time of soil desiccation and vegetation dormancy, so the ability to grow opportunistically in the foresummer may be a competitive advantage of *Coccidioides* over other soil biota
- Spores can accumulate and remain viable for years after a wetter foresummer
- Dust (PM10) is a good proxy for dispersion in winter & foresummer
 - Negative precip dispersion role in fall (rather than dust)
- Although initially elusive, careful data processing led to dramatic improvements in explained variance using a simple and robust model
 - Can be implemented for use by public health decision-makers
 - Need to validate model elsewhere (e.g., Maricopa county)
- Overall: strong support for climate-cocci hypotheses (“Grow and Blow”):
 - Fungal growth in the longer term
 - Spore dispersion and exposure in the short term
- New work (EPA-funded): develop and test expanded model in rest of Arizona
 - Add spatial information using satellite soil moisture



Climate and Health: Basic Science and Decision Support for Valley Fever

Andrew C. Comrie
University of Arizona

