

Convergence research as a bedrock for advancement in climate resilience

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PCAST Virtual Meeting

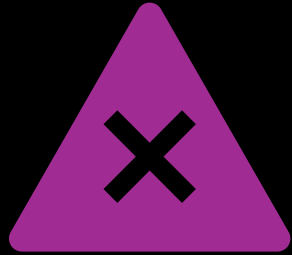
July 11, 2024



Key message

- Societal impacts require convergence research
- Convergence science must address epistemic inequities
- Data does not change society people do.
- AI cannot save us!





Why is siloed
“science” a problem?



How do you do
convergence research?



How do you gauge the
societal impact of your
research?

Problem with siloed “science”

The hierarchization of knowledge systems

Eurocentric orientations deemed universal and objective

Maintenance of the white frame that normalizes racial superiority

Good at hammering data



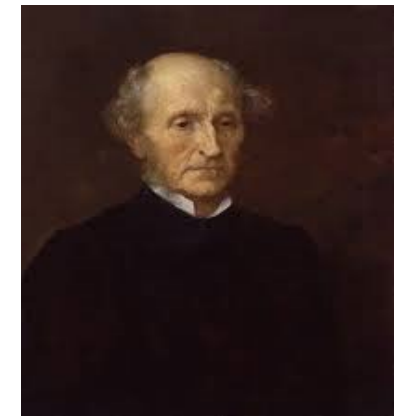
Francis Bacon
1561 - 1626



Augustus Comte
1798-1857



Ernst Mach
1838-1916



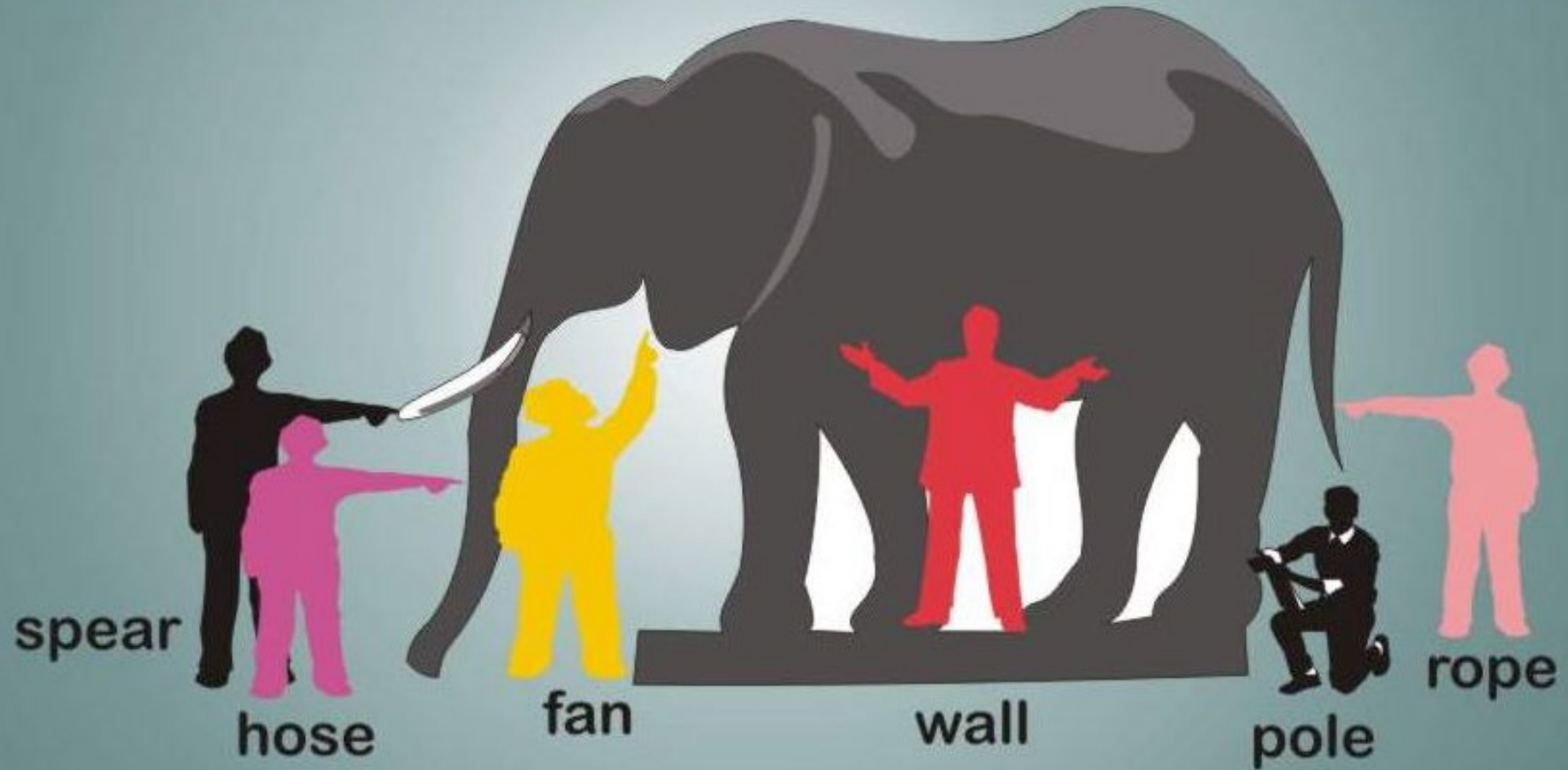
John Stuart Mill
1806-1873

Science- knowledge-power

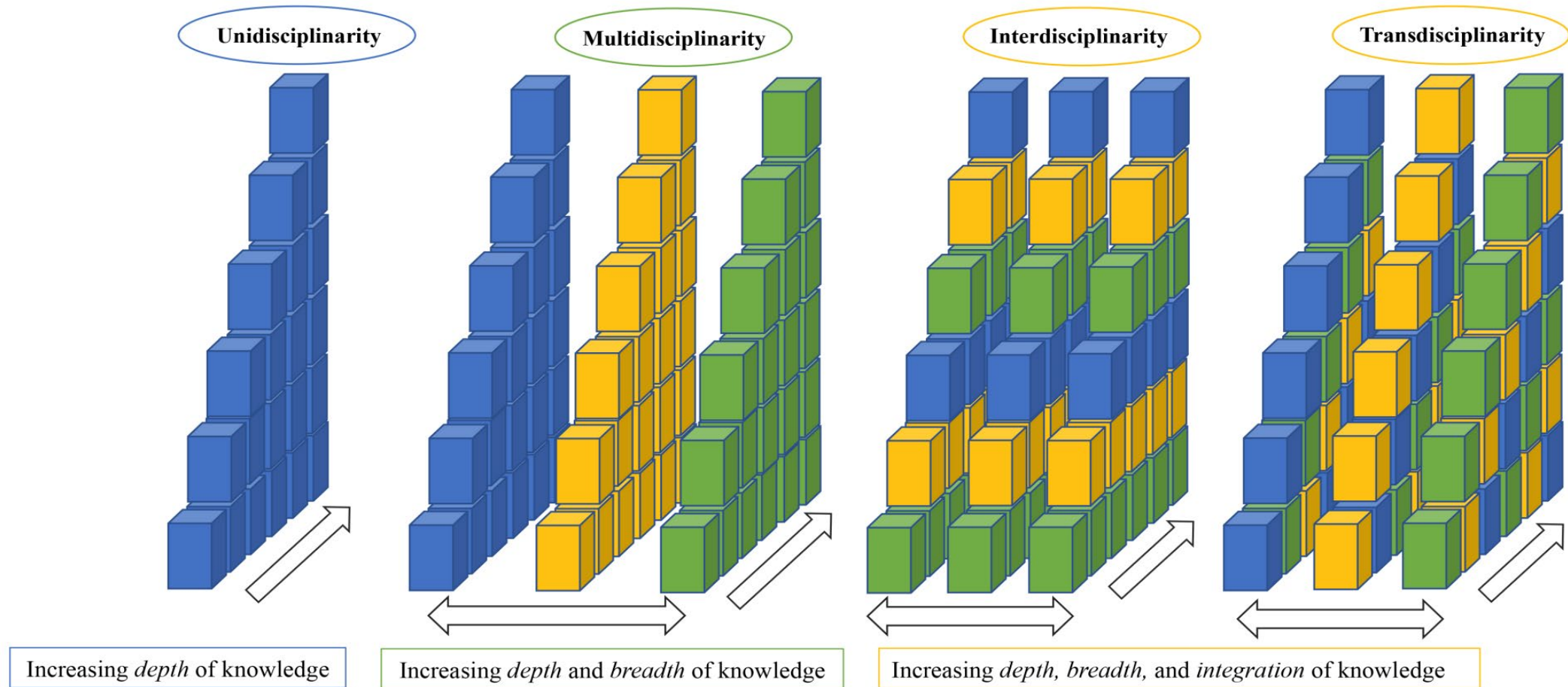
- Fail to democratize decision-making
- Fail to acknowledge the historical and social context of science
- Fail at reducing inequalities



THE ELEPHANT METAPHOR OF REALITY

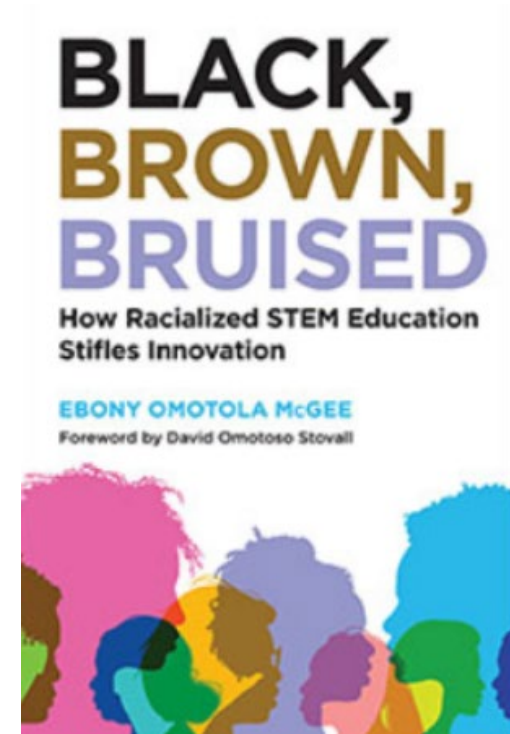


Doing convergence research

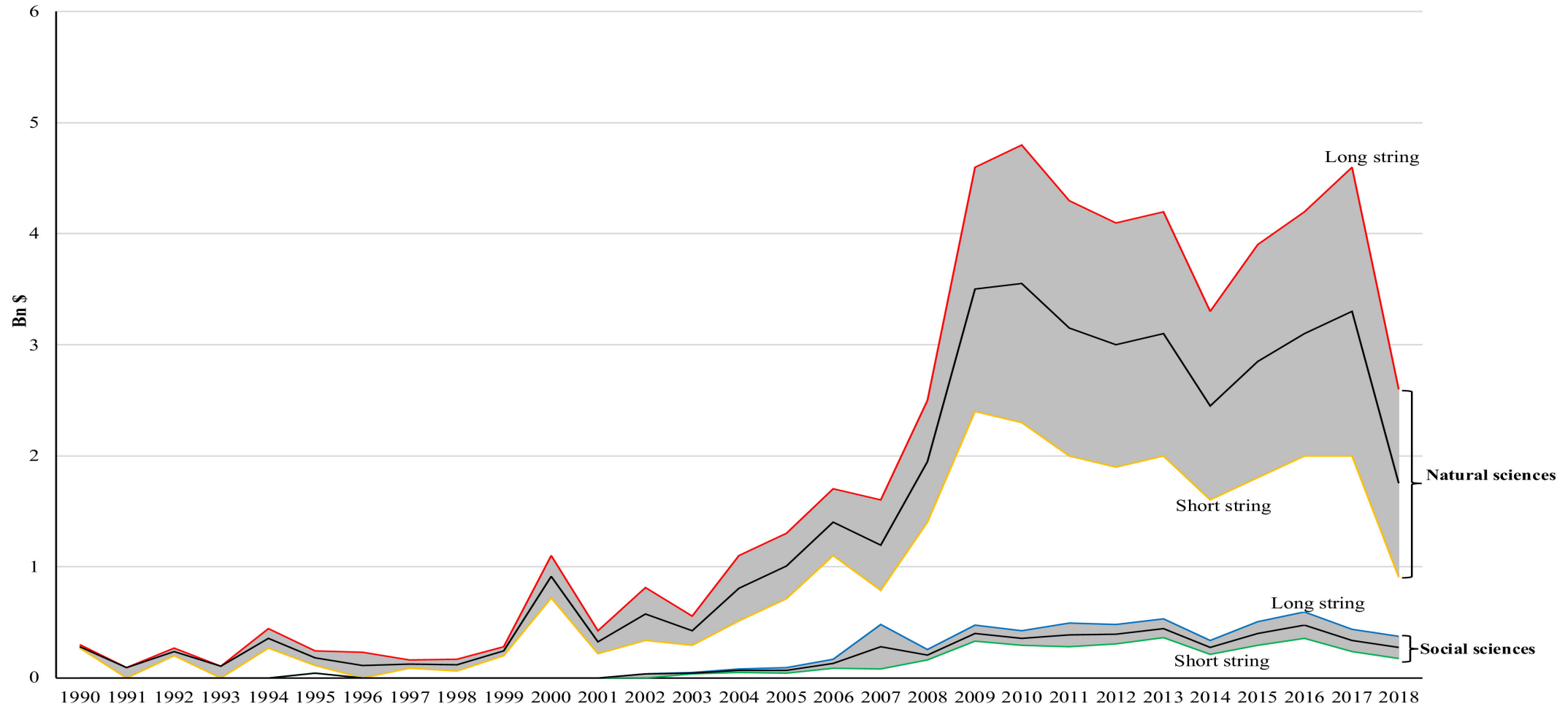


Doing convergence research

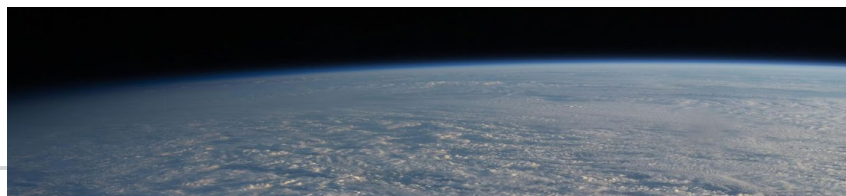
- Addressing **structural biases** built into knowledge production systems
- Diversity and inclusion in STEM
- **Decentering coloniality** from our knowledge-frameworks
- Embrace intentionally **disruptive** approaches



Between 1990 and 2018, the natural and technical sciences received 770% more funding than the social sciences on climate change issues

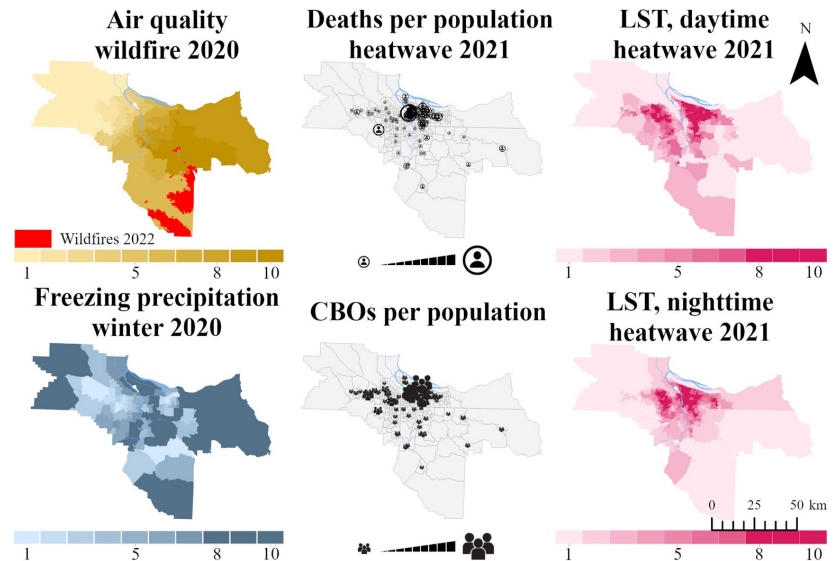
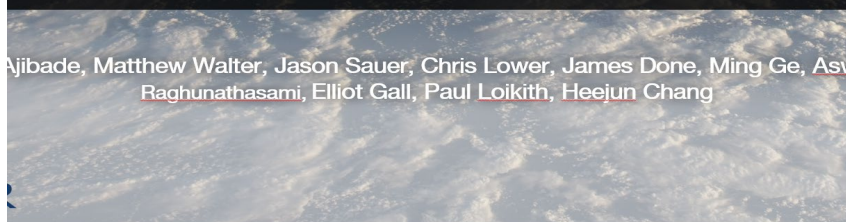


Dignified participatory approaches involving resident experts



Equitable Resilience to Climate-cascading (PERCH):
Identifying levers of transformations
Early Career Faculty Innovator Program

Ajibade, Matthew Walter, Jason Sauer, Chris Lower, James Done, Ming Ge, Asw Raghunathasami, Elliot Gall, Paul Loikith, Heejun Chang



Interviews: Trust in government

Hell no! I don't trust the government to respond well to these issues in future (Male, Native American 2022)

No, I don't, **Because look what they're doing now.** They're trying to take away you know, Social Security and Medicaid and Medicare, and people rely on that stuff. Food Stamps, like don't take those resources away. I feel like they need to be increased.

(30 years old, female, white resident, March 2023)



Government isn't ready for the climate battle

Neighbors helping neighbors



Photo credit: Getty images

No, I don't think the government is going to be able to be the one to respond to it. I really think a lot of these things are really just up to neighbors. You know, the government are not really going to be able to check every house and see if they have an air conditioner or to see if their neighbor's still alive. Like it's really not going to be up to the government.

Resident, Male, White 29, October, 2022

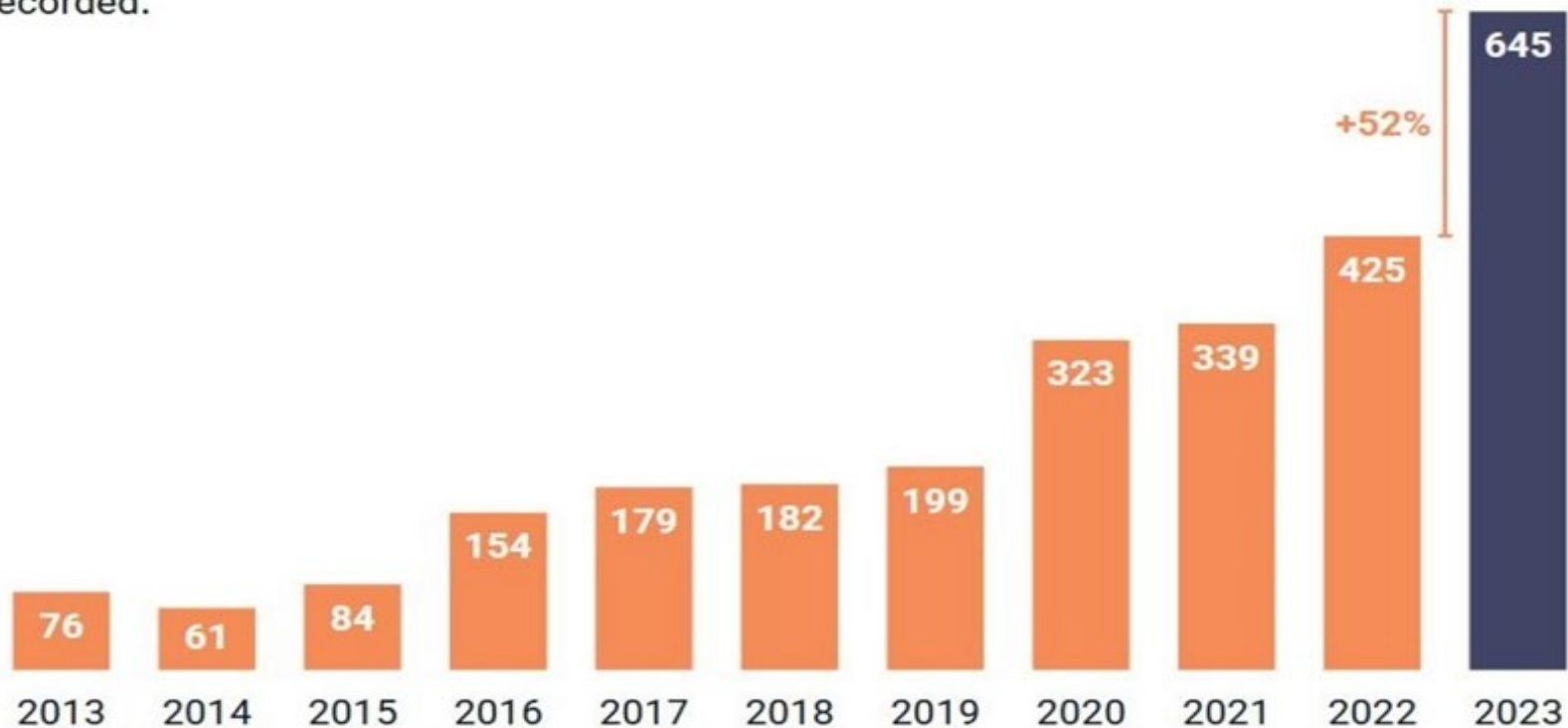
Gauging impacts

Heat Related Deaths Over Time

Deaths by Year

Maricopa County identified a total of 645 heat related deaths occurring in 2023.

This represents a 52 percent increase from last year and the most heat related deaths ever recorded.



* 1 death that occurred in September of 2023 is pending a cause of death

Credit: Maricopa County

- **Patricia Solis mapped heat-mortality hotspots in Maricopa County**
- Hotspots consisted of mobile homes
- Landlords denied tenants to right to install air conditioners
- Patricia worked with CBOs to pass a bill



Conclusion

Make room for epistemic humility

We need a multiplicity of values, expertise, methods, and perspectives to scale up efforts on science-policy.

Using solidarity/convergence science to advance climate resilience