{ **Closing Thoughts**

National Academies Roundtable on Artificial Intelligence & Climate Change
Accelerating Climate Progress with AI: From Science to Action

Marc J. Alessi, PhD
Climate Attribution Science Fellow
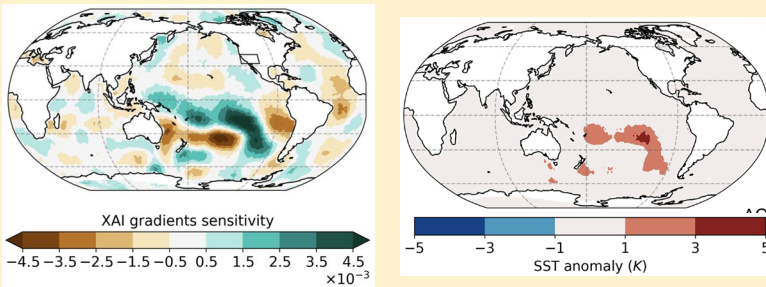
Union of Concerned Scientists

What's next for climate science and AI?

Returning to the fun of being an atmospheric scientist

Proving the causality and dynamical mechanisms in AI-identified relationships

Hypothesis generation

XAI gradients sensitivity
−4.5 −3.5 −2.5 −1.5 −0.5 0.5 1.5 2.5 3.5 4.5 ×10⁻³

SST anomaly (K)
−5   −3   −1   1   3   5

Alessi et al., 2025, JClim

Climate science and AI in the international space

United Nations Loss & Damage Fund

Climate litigation

Importance of *rapid* climate attribution studies (event to impact to source attribution)

Addressing data gaps in Global South

Climate science and AI in a new era

Science is currently under attack

Privatization of our work

Importance of communicating our work and gaining trust