



The Abdus Salam
**International Centre
for Theoretical Physics**



2356-22

Targeted Training Activity: ENSO-Monsoon in the Current and Future Climate

30 July - 10 August, 2012

Global Warming in the 20th and the 21st Century

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ICTP, Trieste, Italy, 6 Aug, 2012

Global Warming in the 20th and the 21st Century

Jagadish Shukla

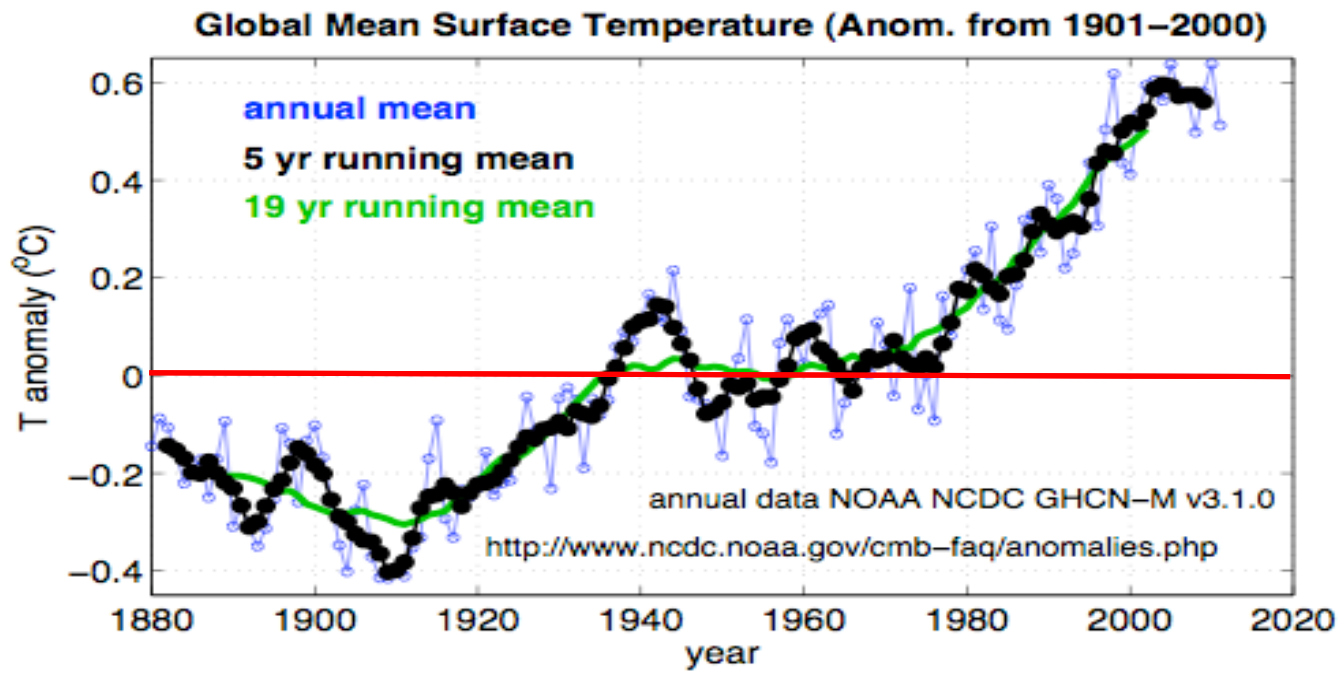
Department of Atmospheric, Oceanic and Earth Sciences (AOES)

George Mason University (GMU)

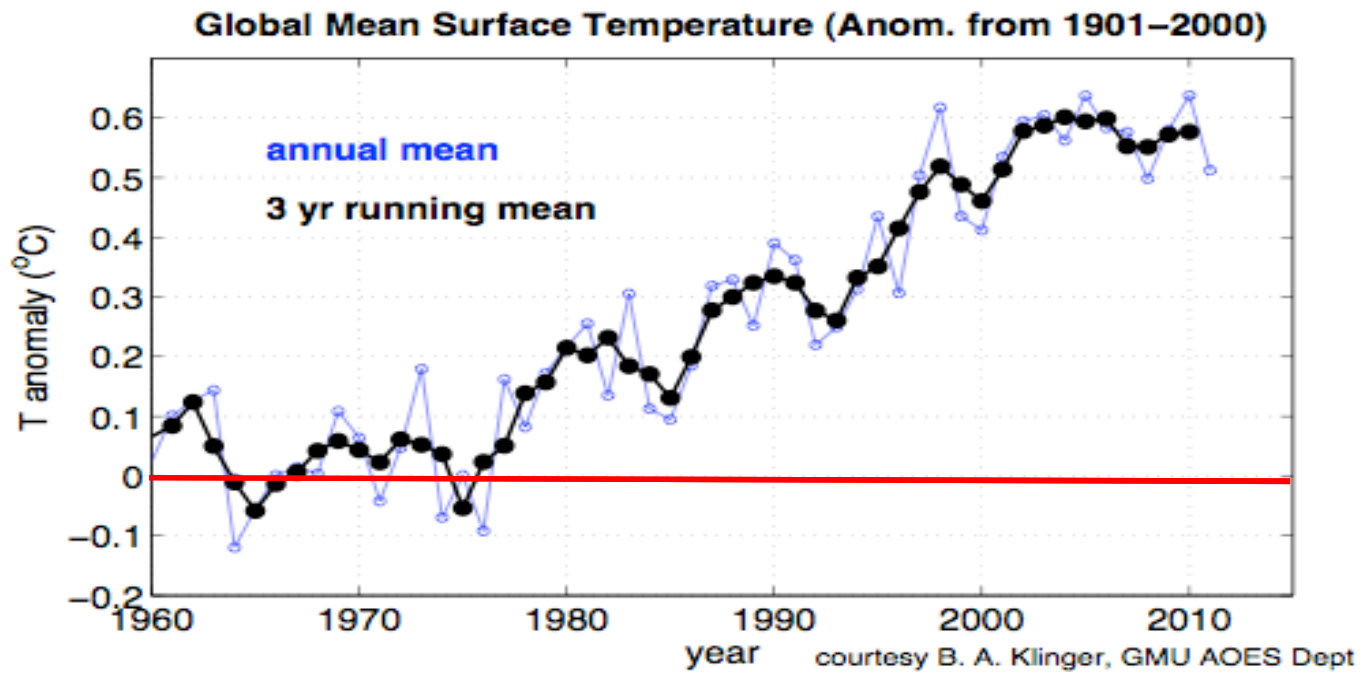
Center for Ocean-Land-Atmosphere Studies (COLA)

Institute of Global Environment and Society (IGES)

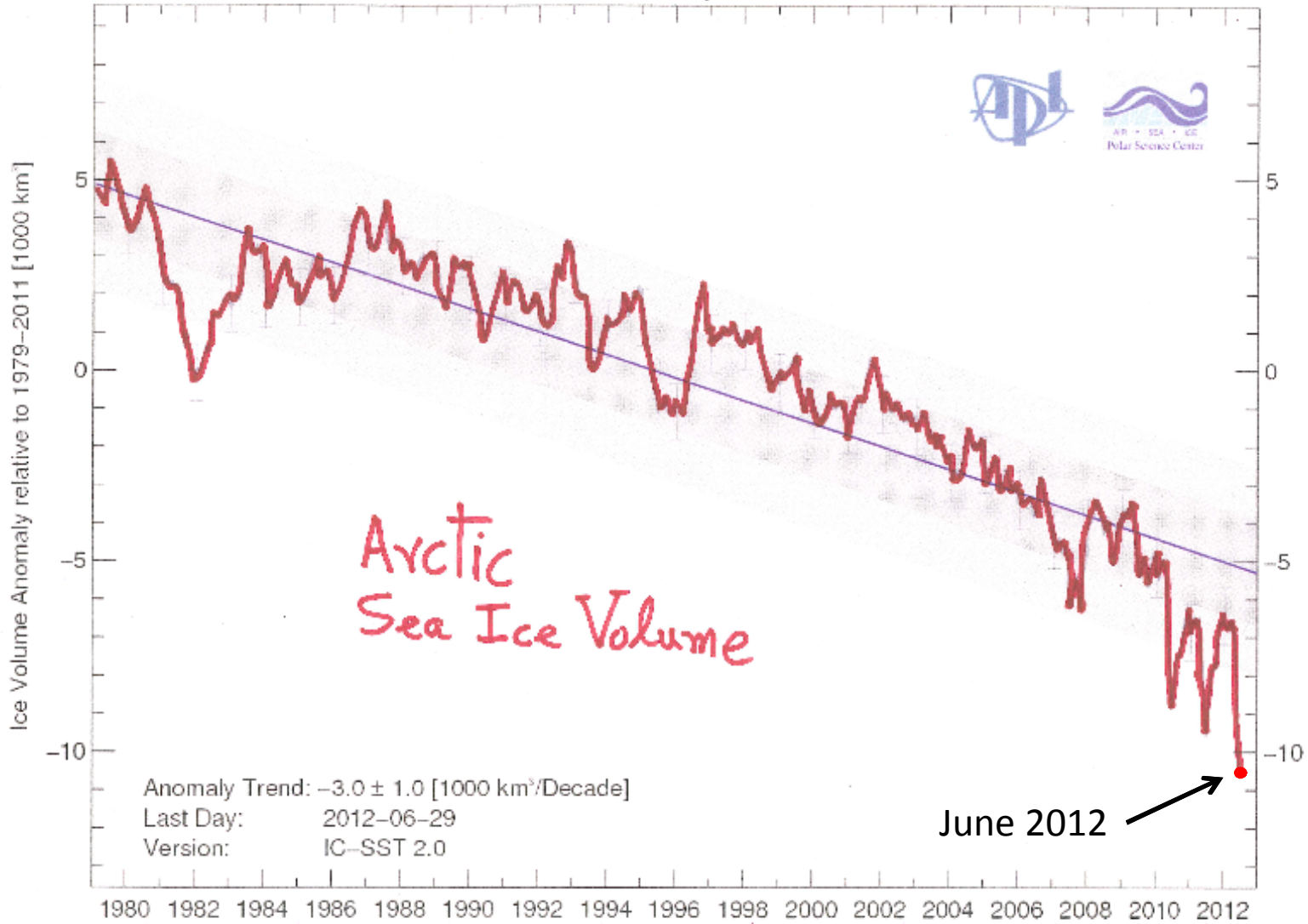
6 Aug 2012



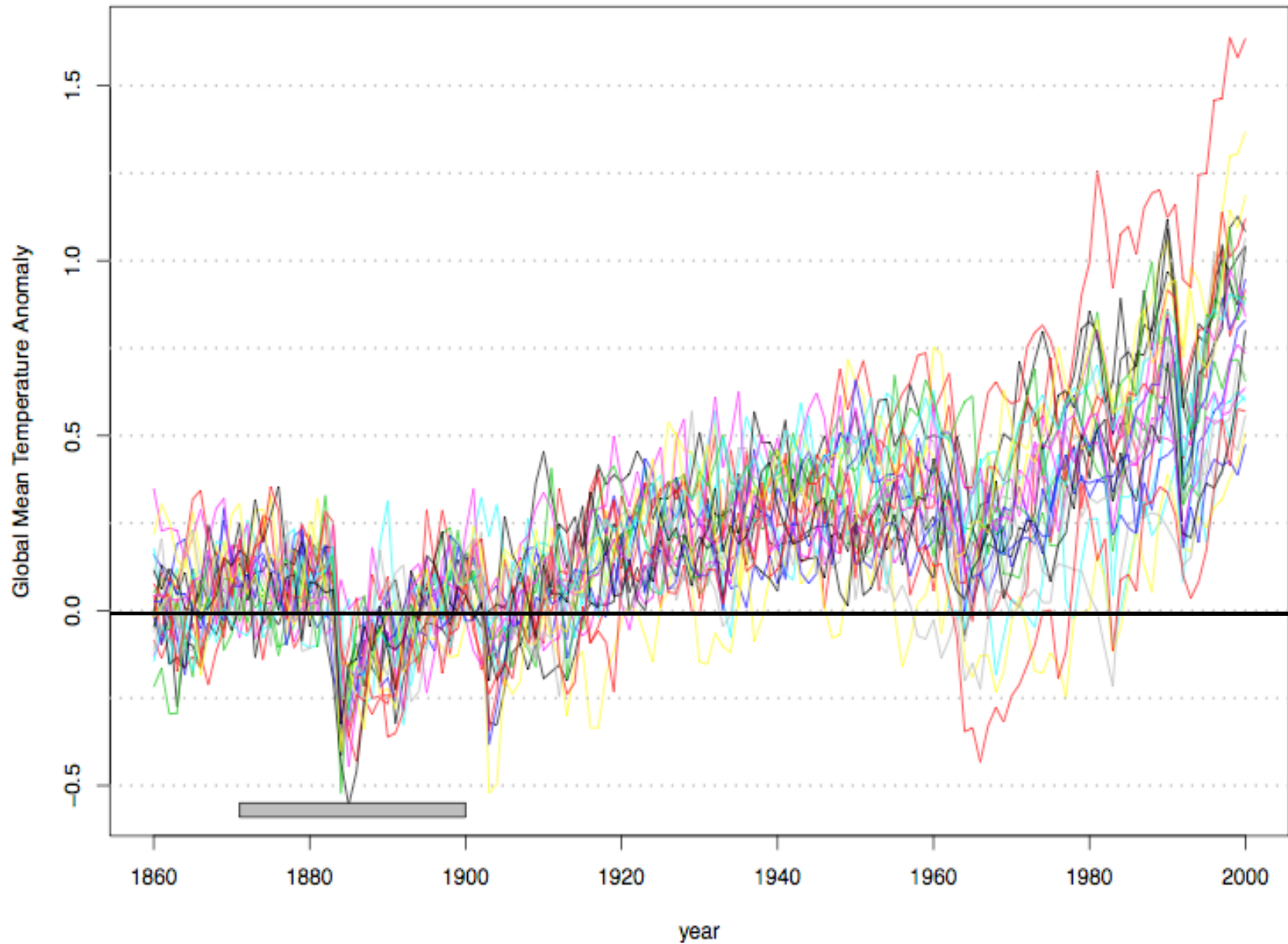
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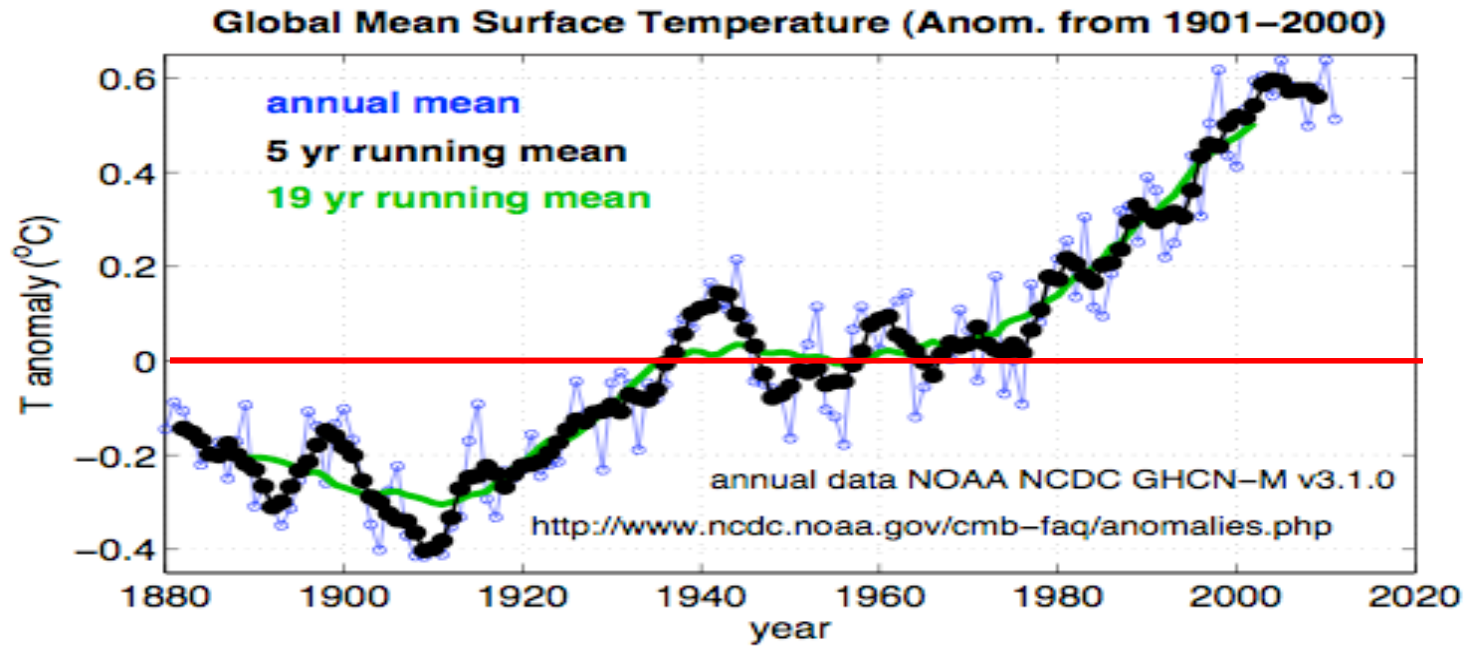
Arctic Sea Ice Volume Anomaly and Trend from PIOMAS



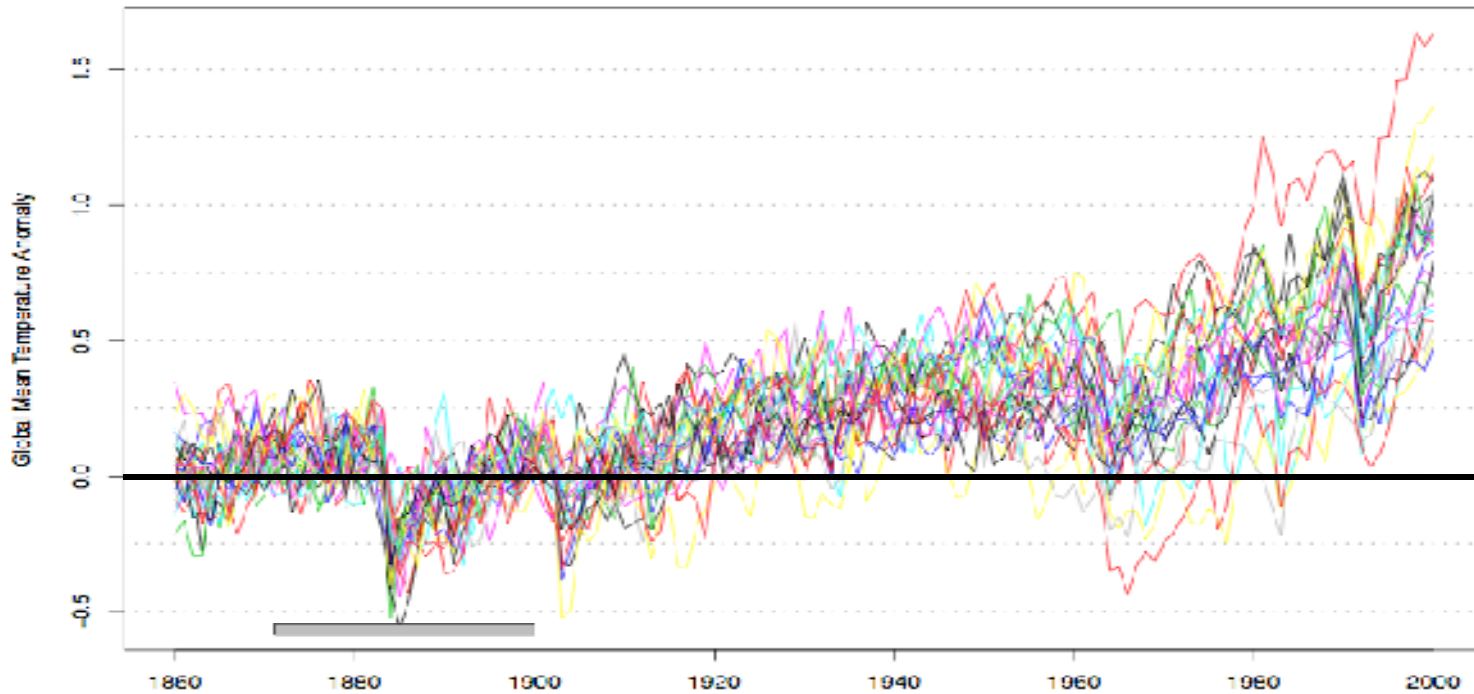
CMIP5: Global Mean 2m Temp ($^{\circ}\text{C}$) for 20th Century Historical Runs



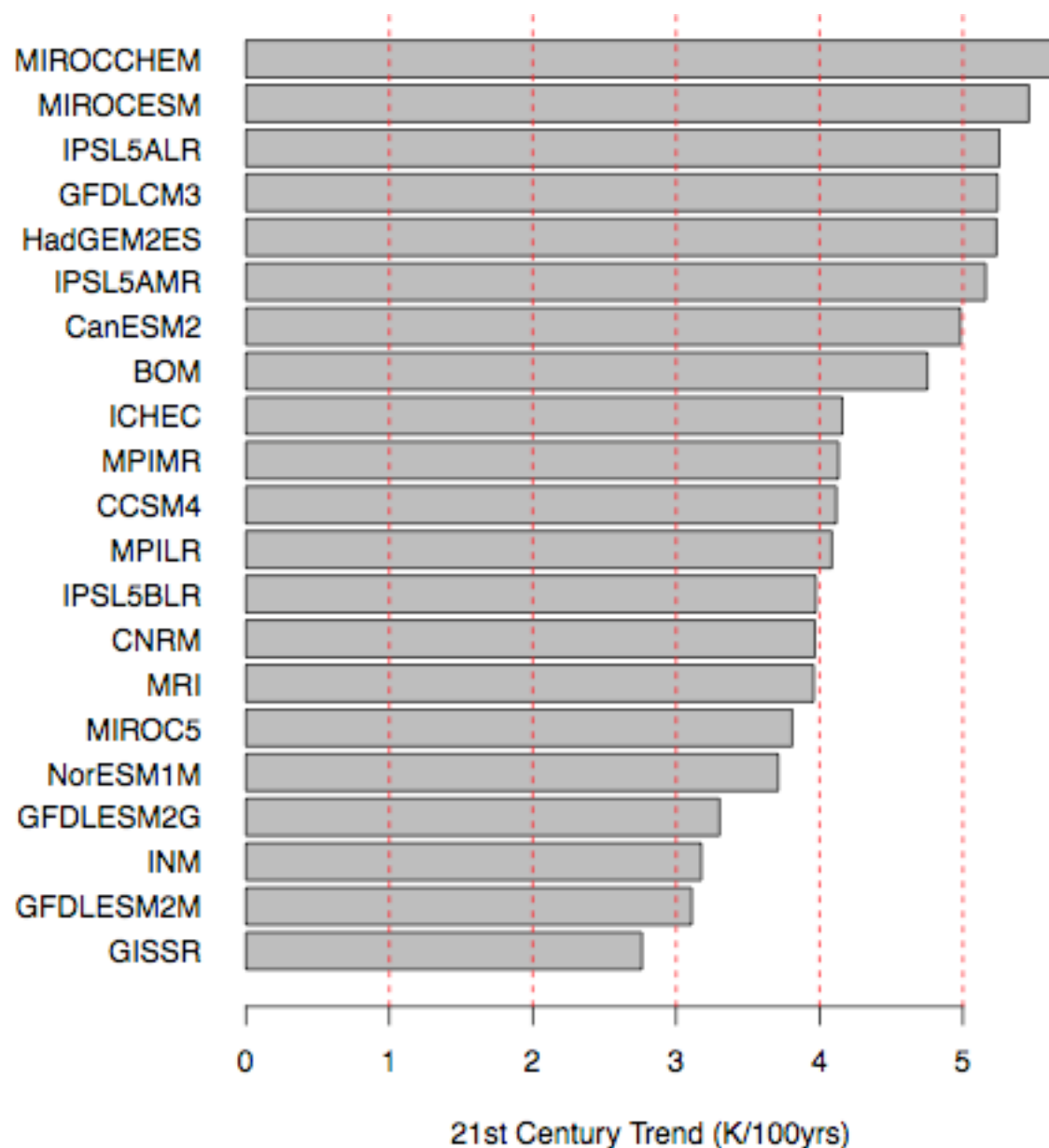
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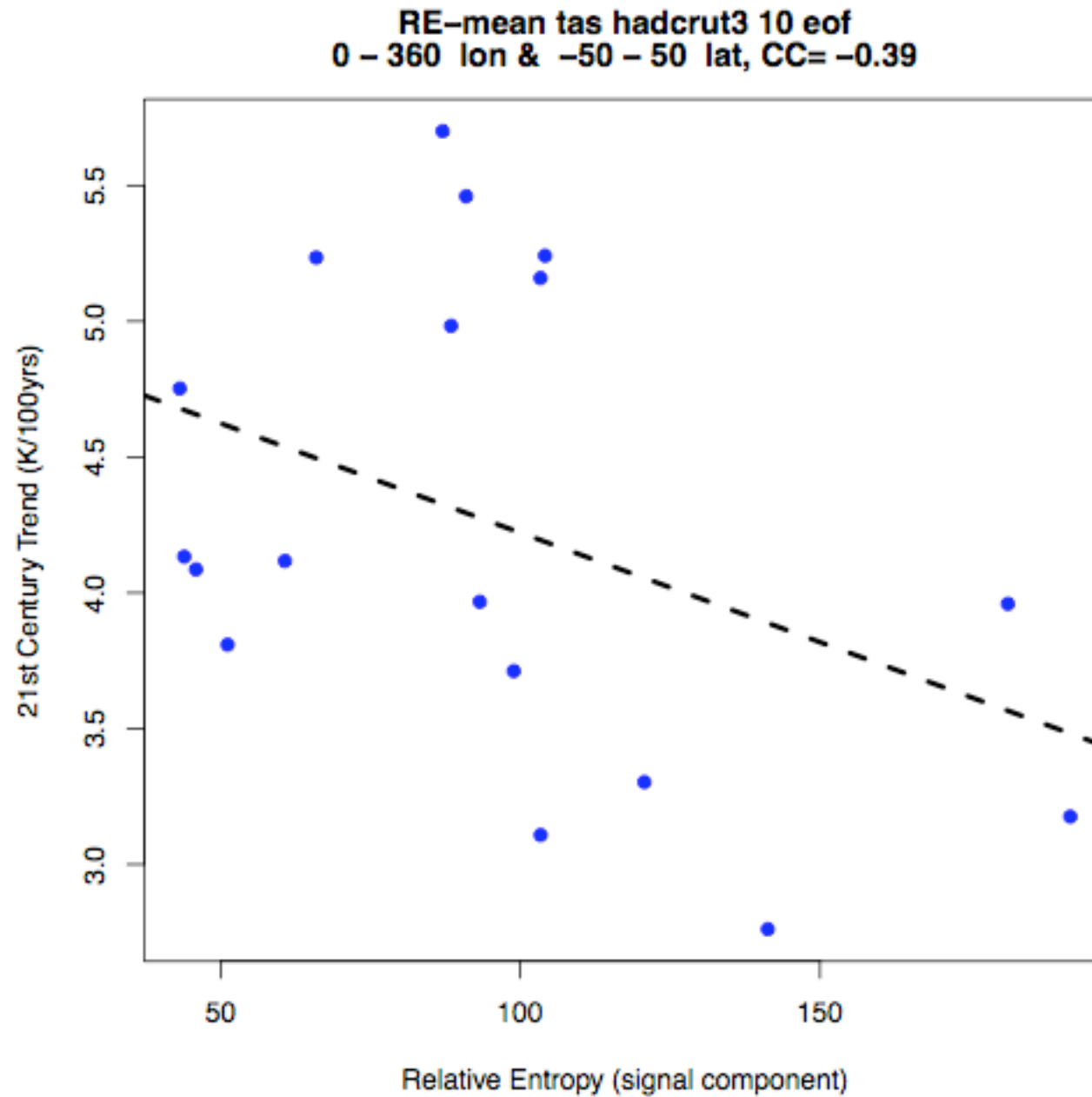
CMIP5: Global Mean 2m Temp (°C) for 20th Century Historical Runs



21st Century Trend (K/100yrs) for Global Mean 2m Temp (RCP8.5)



Relative Entropy for 20th Century vs 21st Century Warming (RCP8.5)



Messages Science Community Should Convey to Society about Climate Change

1. It's real.
2. It's us (i.e., human caused).
3. It's bad (i.e., it's harmful to people).
4. We agree (i.e, there is overwhelming agreement among the climate experts).
5. It's solvable (i.e., there is much we can do to address the problem).

*Recommendations by Prof. Ed Maibach
Director, Center for Climate Change
Communication, GMU*

Letter from More than 200 members of the U.S. National Academy of Sciences

- There is compelling, comprehensive, and consistent objective evidence that humans are changing the climate in ways that threaten our societies and ecosystems on which we depend.

SCIENCE, 7 May 2010

THANK YOU!

ANY QUESTIONS?

Relative Entropy for 20th Century vs 21st Century Warming (RCP8.5)

