



# DEPARTMENT OF PHYSICS AND ASTRONOMY

## COLLOQUIUM *IN-PERSON EVENT ONLY*



### *Adventures in PCAST and The Dark Energy of Quantum Materials*

Laura H. Greene

Chief Scientist

*National MagLab and Florida State University*

I spent most of my last 4 years working for President Biden on PCAST (the President's Council of Advisors on Science and Technology). I will describe some of our reports, and present some of our findings and recommendations on AI, which was entitled "Supercharging Science."

Then I will provide my overview of unconventional superconductors, including what defines them. They are among the many correlated electron problems that remain unsolved after decades. Some of their fundamental characteristics are strikingly similar, including their ubiquitous phase diagram, with intriguing, correlated electron (non-Fermi liquid) phases that break the symmetry of their underlying lattice at temperatures well above  $T_c$ , and I will present a fun analogy illustrating that. Some of our own work identifies a possible new pairing mechanism in a heavy-fermion superconductor.

PCAST Reports 2021-2025: <https://bidenwhitehouse.archives.gov/pcast/documents-reports/>



**Thursday, March 27, at 3:55 PM**

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