**Overview and Update of the E3SM Science Plan**

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Supported by the U.S. Department of Energy (DOE), the Energy Exascale Earth System Model (E3SM) project aims to optimize the use of DOE resources to address the grand challenge of actionable predictions of earth system variability and change. This requires sustained advancement to: (1) integrate model development with leading-edge computational advances towards ultra-high-resolution modeling; (2) represent the coupled human-earth system to address energy sector vulnerability to variability and change; and (3) address uncertainty in model simulations and projections. Scientific development of the E3SM modeling system is driven by the simulation requirements in three overarching science areas centering on understanding the Earth’s water cycle, biogeochemistry, and cryosphere systems and their future changes. This presentation will provide an overview of the goals and science drivers behind the model development and simulation campaigns of E3SM v1 and v2 and discuss future directions for v3/v4.