



ASC Overview

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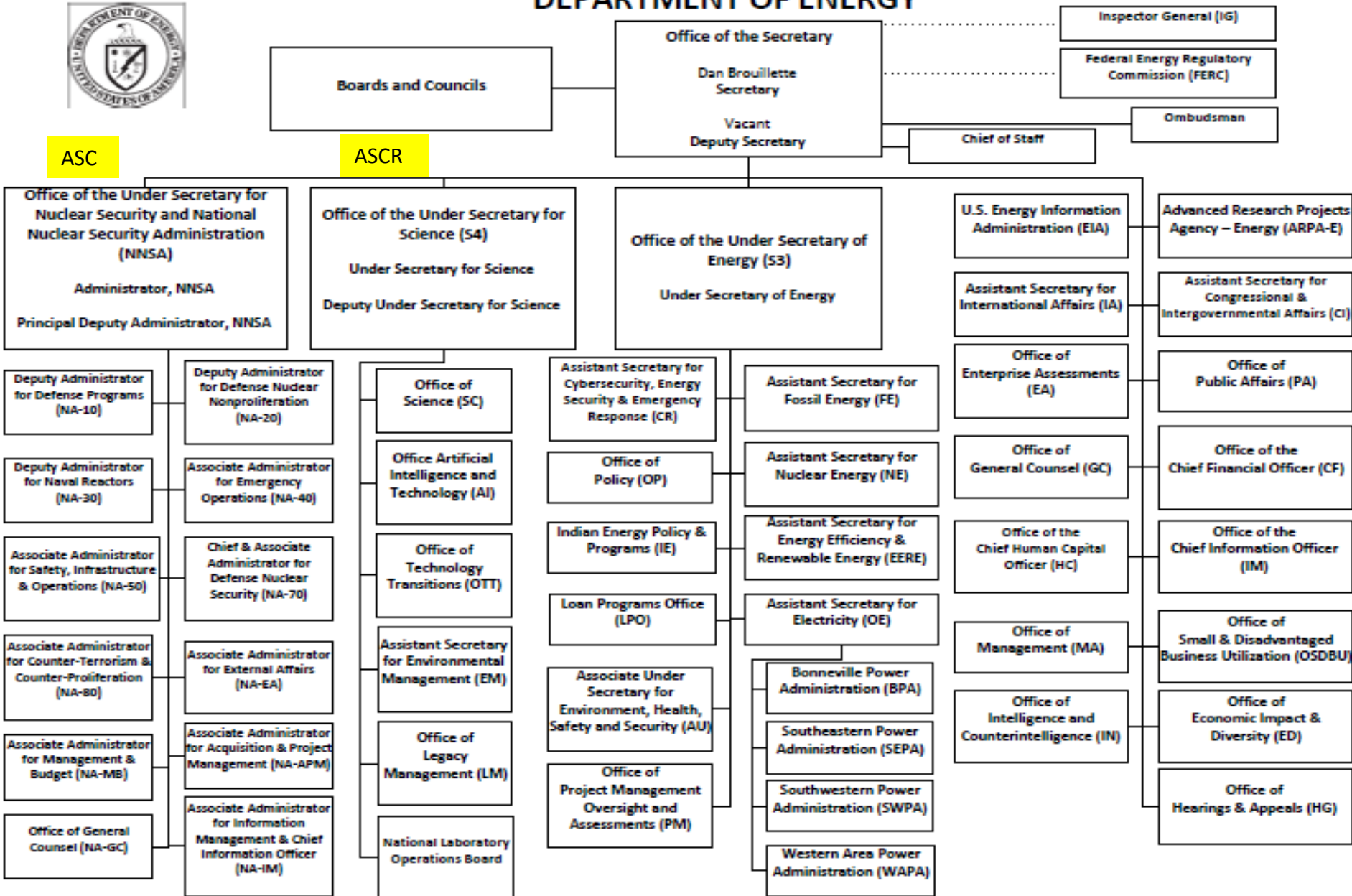
Office of Advanced Simulation and Computing
and Institutional Research and Development
Programs



NATIONAL NUCLEAR SECURITY ADMINISTRATION OFFICE OF DEFENSE PROGRAMS



DEPARTMENT OF ENERGY



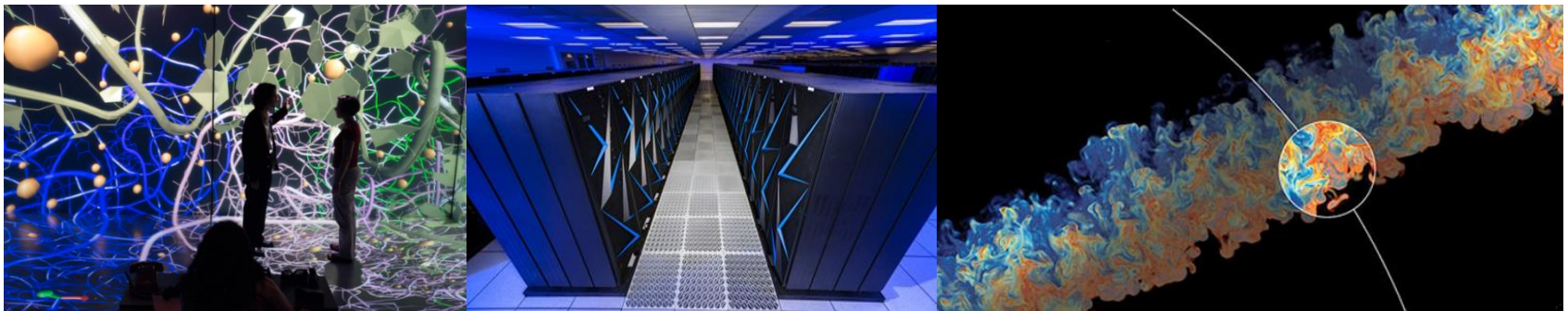
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Advanced Simulation and Computing (ASC)

ASC is predictive science through simulation: the people, state-of-the-art computational platforms, and simulation tools used in the annual certification of nuclear weapons stockpile.

ASC's main three objectives:

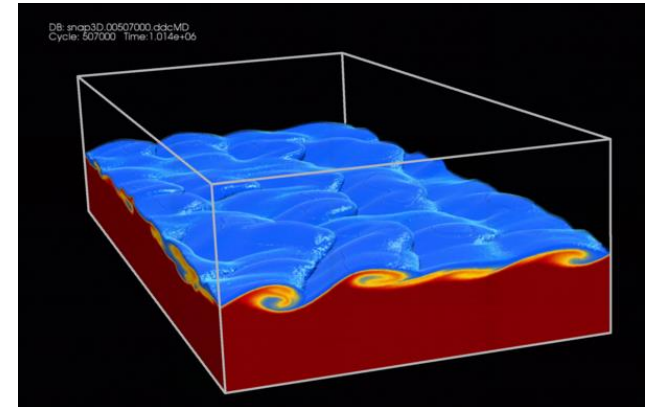
- **Prediction Through Simulation.** Deliver verified and validated physics and engineering codes to enable simulations and risk-informed decisions of nuclear weapons performance, safety, and reliability.
- **Robust Tools.** Develop robust models, codes, and computational techniques to support stockpile needs such as Significant Finding Investigations, Life Extension Programs, annual assessments, as well as evolving future requirements.
- **Balanced Operational Infrastructure.** Implement a balanced computing strategy of platform acquisition and operational infrastructure to meet Directed Stockpile Work and Stockpile Stewardship Program needs for production and advanced simulation capabilities.



Challenges



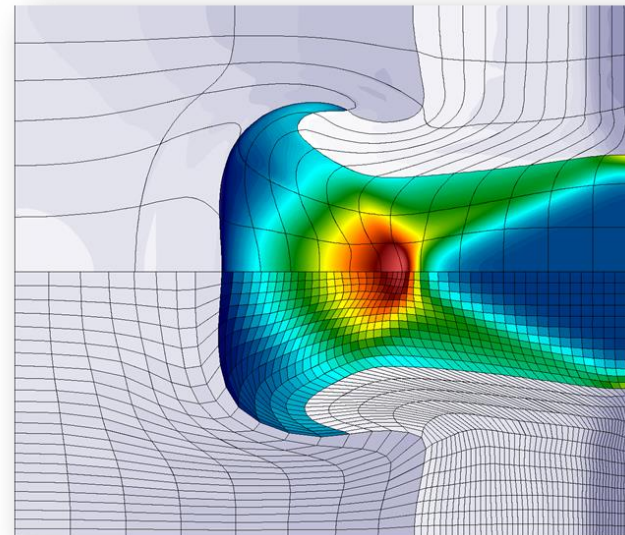
Reduce mission risk from disruptive computing technologies



Learn to compute efficiently at large scales

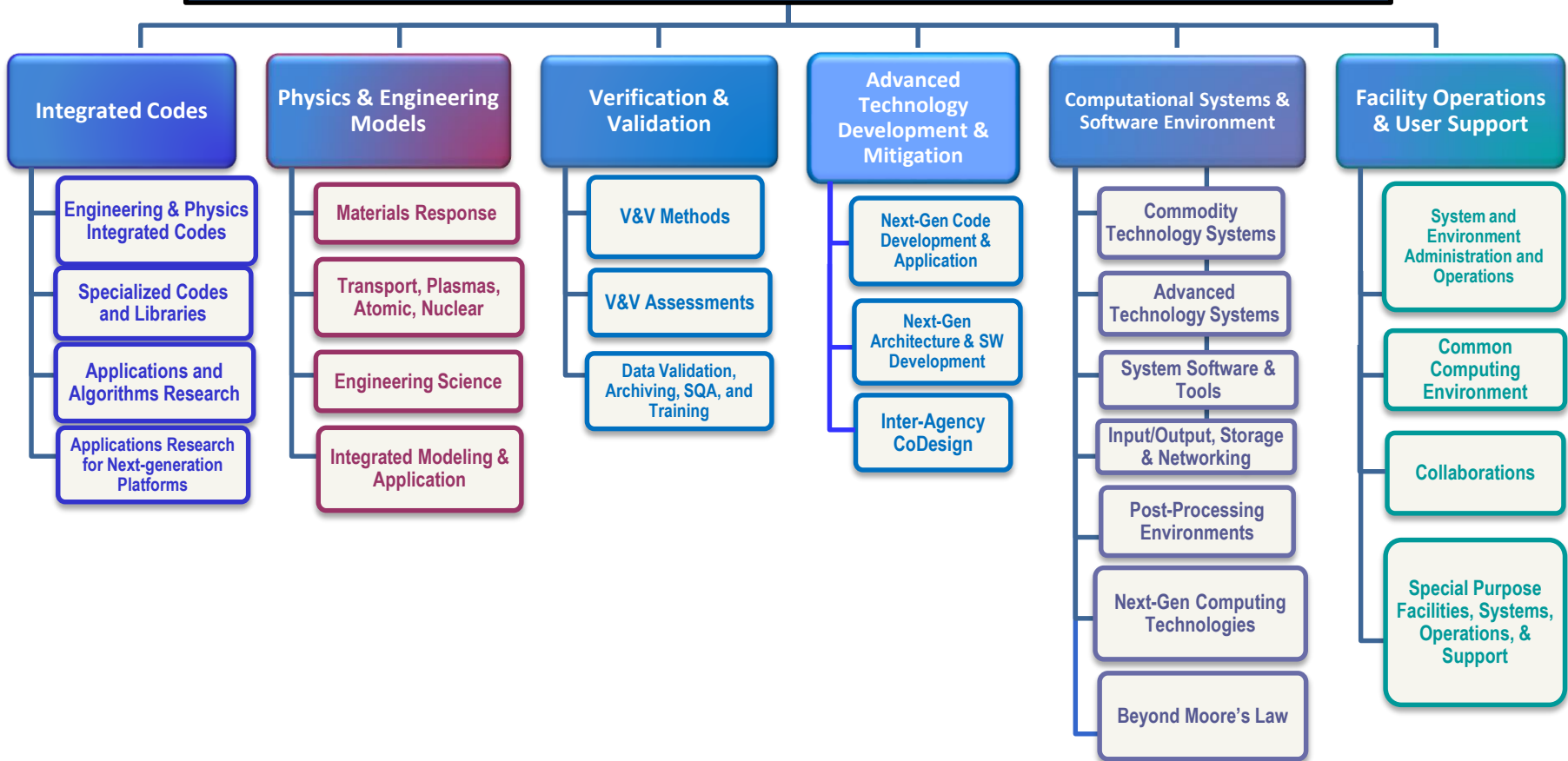


Develop workforce



Improve predictive capability for future nuclear security missions

ADVANCED SIMULATION AND COMPUTING





- We enable nuclear certification without underground testing
- We face a changing computing landscape
- We are always improving to support new missions
- We always need to build and retain a highly skilled workforce

