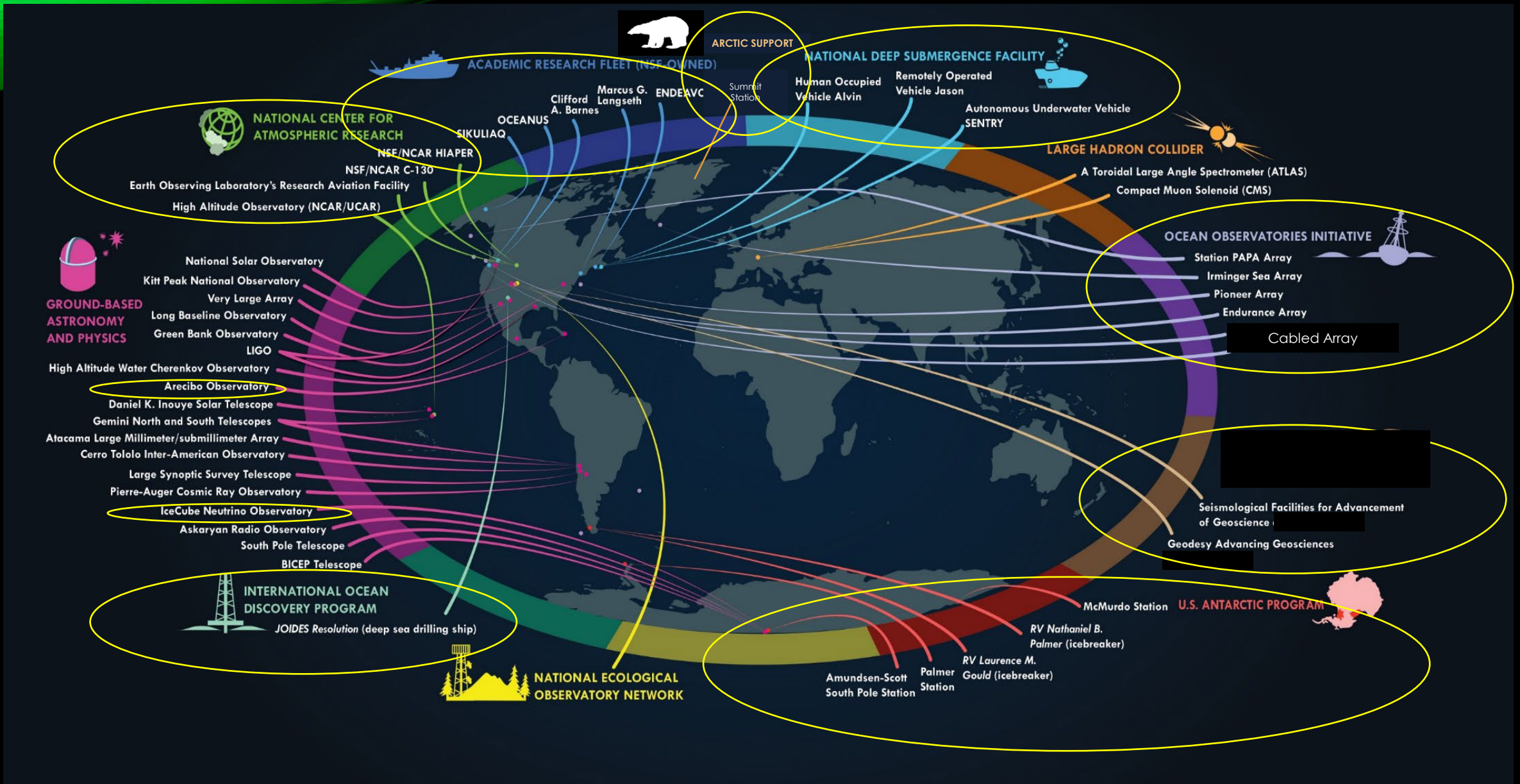


Next Generation Earth Systems Science Research for Climate Intervention Supported by NSF

- Utilizing NSF's commitment to developing systems understanding
 - Especially in a convergence framework that includes physical and social systems
 - Convergence engages entire chain of knowledge development from basic research to broad application—actively promotes DEI
 - It is driven by a specific and compelling problem, whether that problem arises from deep scientific questions or pressing societal needs
 - It shows deep integration across disciplines
 - Key point: NSF is stove-piped around traditional disciplines—TIP may be the solution!
- Integrating theoretical and observational research
 - Coordinating NSF's unique array of facilities (listed below) to support convergence research
 - Examples of facilities: Academic Research Fleet, NCAR instrumented aircraft and computation, Ocean Observing Initiative, Polar facilities, NEON, SAGE-GAGE)

NSF MAJOR FACILITIES AND INFRASTRUCTURE SPAN THE GLOBE



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 - Key point: need to form models of NSF facilities engagement that integrate key Earth System components
 - Key point: need scientifically-executed social system observations—social NEON?

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- Globalizing NSF
 - Potential US partners
 - UK Research and Innovation
 - India Dept of Science Technology
 - Turkey Scientific Technological Research Council
 - German Research Foundation
 - And many more!
- NSF Peer Review is Robust
 - Plenty of successful models applicable to ESS for CI
 - STCs, ERCs, Convergence Accelerators, LTERs, CoPe
 - Broader impacts deserves special attention!