Abstract: The National Science Foundation Office of Advanced Cyberinfrastructure (OAC) has growing research and education programs, including programs for early career multidisciplinary faculty such as CAREER and CISE Research Initiation Initiative (CRII). OAC is pleased to announce its newest program, its core research program solicitation (NSF 18-567), with the goals of supporting all aspects of advanced cyberinfrastructure (CI) research that will significantly impact the future capabilities of advanced research CI, as well as the research career paths of computer as well as computational and data-driven scientists and engineers. Through this solicitation, OAC seeks to foster the development of new knowledge in the innovative design, development, and utilization of robust research CI. The OAC core research areas include architectures and middleware for extreme-scale systems, scalable algorithms and applications, including simulation and modeling, and the advanced CI ecosystem, including tools and sociotechnical aspects. OAC also introduced a CyberTraining program (NSF 18-516) for education and training aimed to fully prepare scientific workforce for nation’s research enterprise to innovate and utilize high performance computing resources, tools and methods. The community response in its two rounds of competition have exceeded expectations. OAC also has programs for research training of undergraduate students (REU sites). I will introduce these and share some of the recent awards. I will also touch on other OAC opportunities in cyberinfrastructure including those on high performance computing (HPC) hardware, software, data, networking and security, and on NSF’s ten big ideas, including Harnessing the Data Revolution.