



United States National Science Foundation

A general overview of the agency's funding portfolio and structure

- Overview
- Sample (FY23) budget
- Large projects
- Challenges

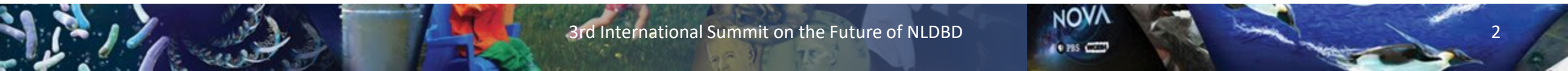


Allena K. Opper
May 2025

3rd International Summit on the Future of NLDBD

NSF Mission

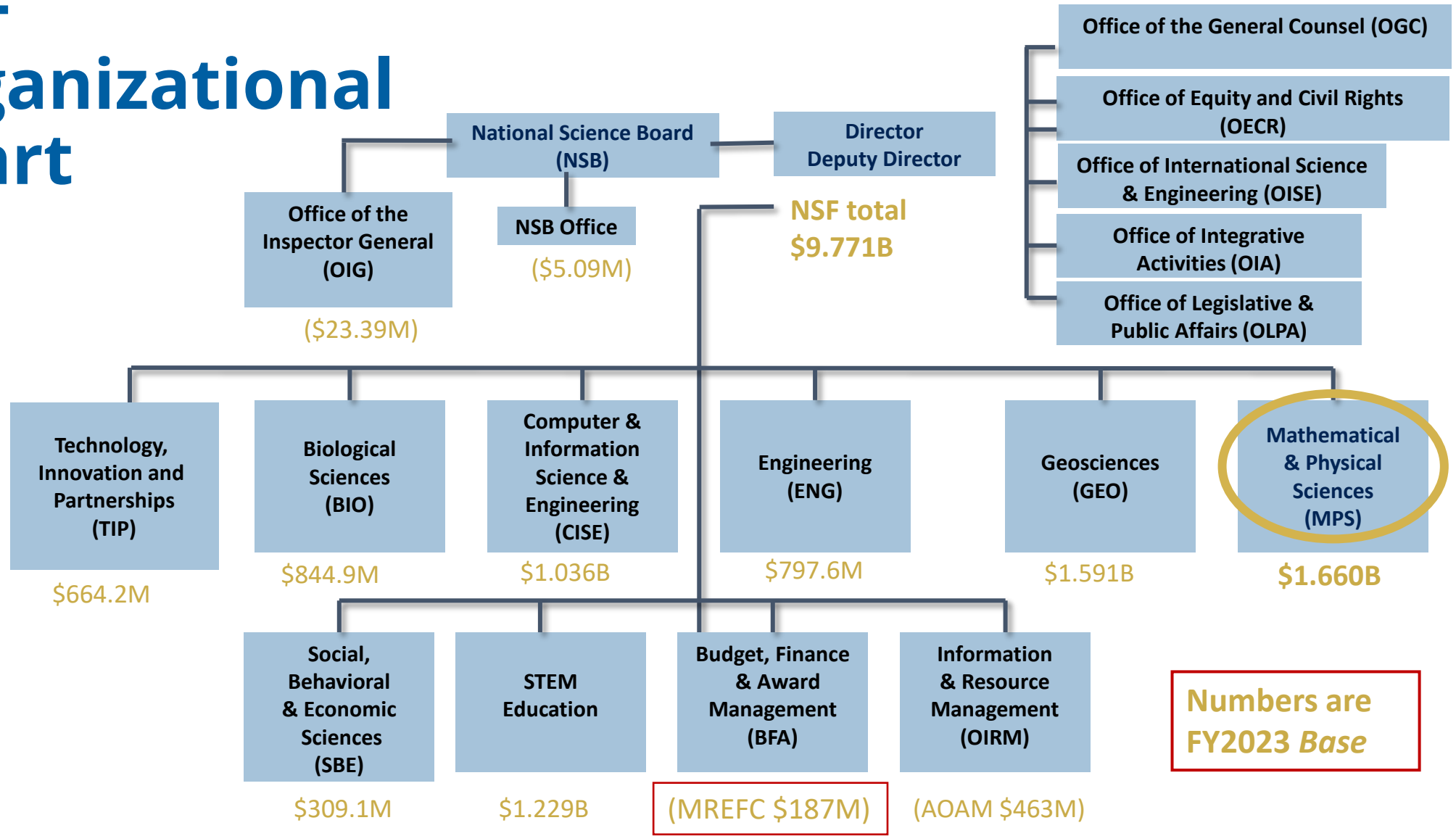
“To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense...”



Programmatic Directorates and Offices Supporting the NSF Mission



NSF Organizational Chart

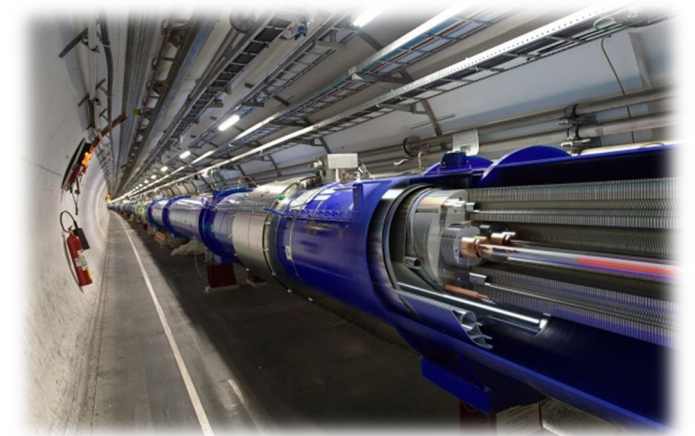


Major Research Equipment and Facility Construction

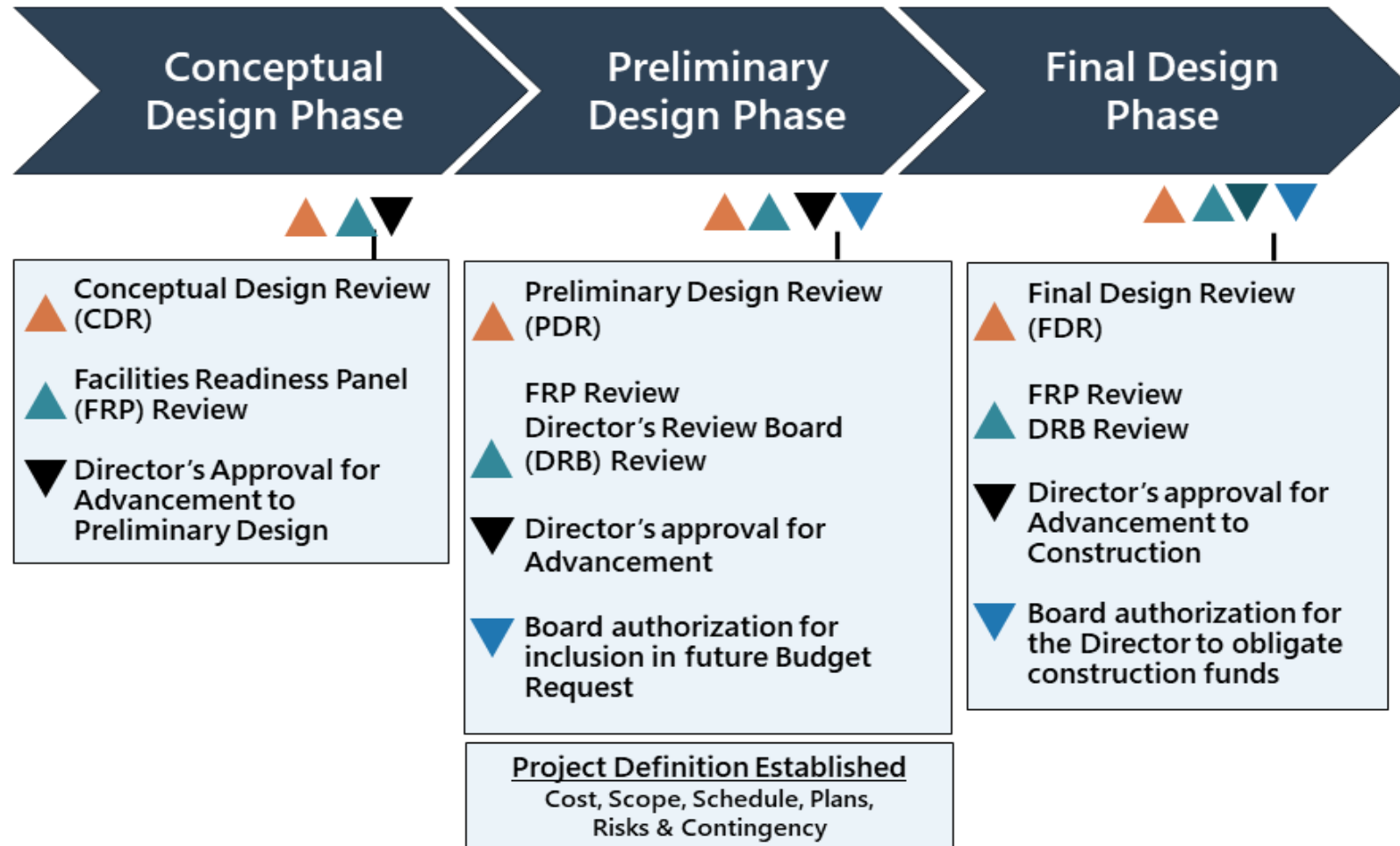


Projects with Total Project Cost > \$100M

- Antarctic Infrastructure Recapitalization
- HL-LHC Detector Upgrades
- Leadership Class Computing Facility
- Regional Class Research Vessel
- Vera C. Rubin Observatory

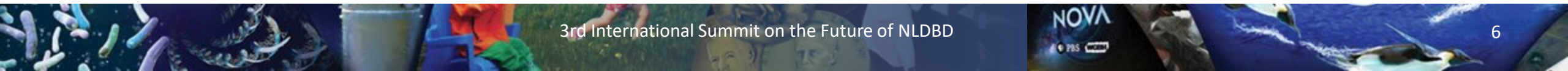


Getting to the MREFC (Construction) Phase



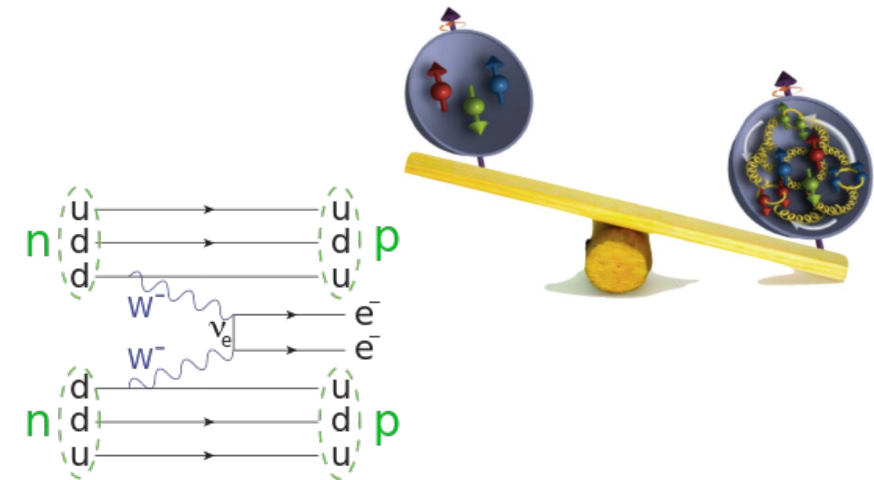
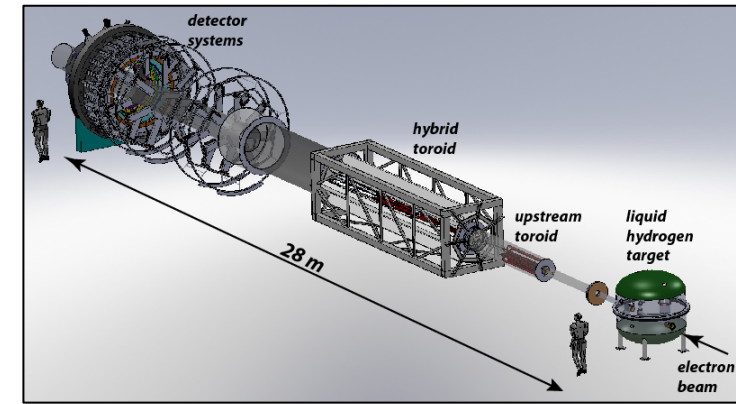
Entry into Design Stage does NOT imply commitment to fund construction

Source: NSF Research Infrastructure Guide (Dec. 2021) Figure 2.1.3-2



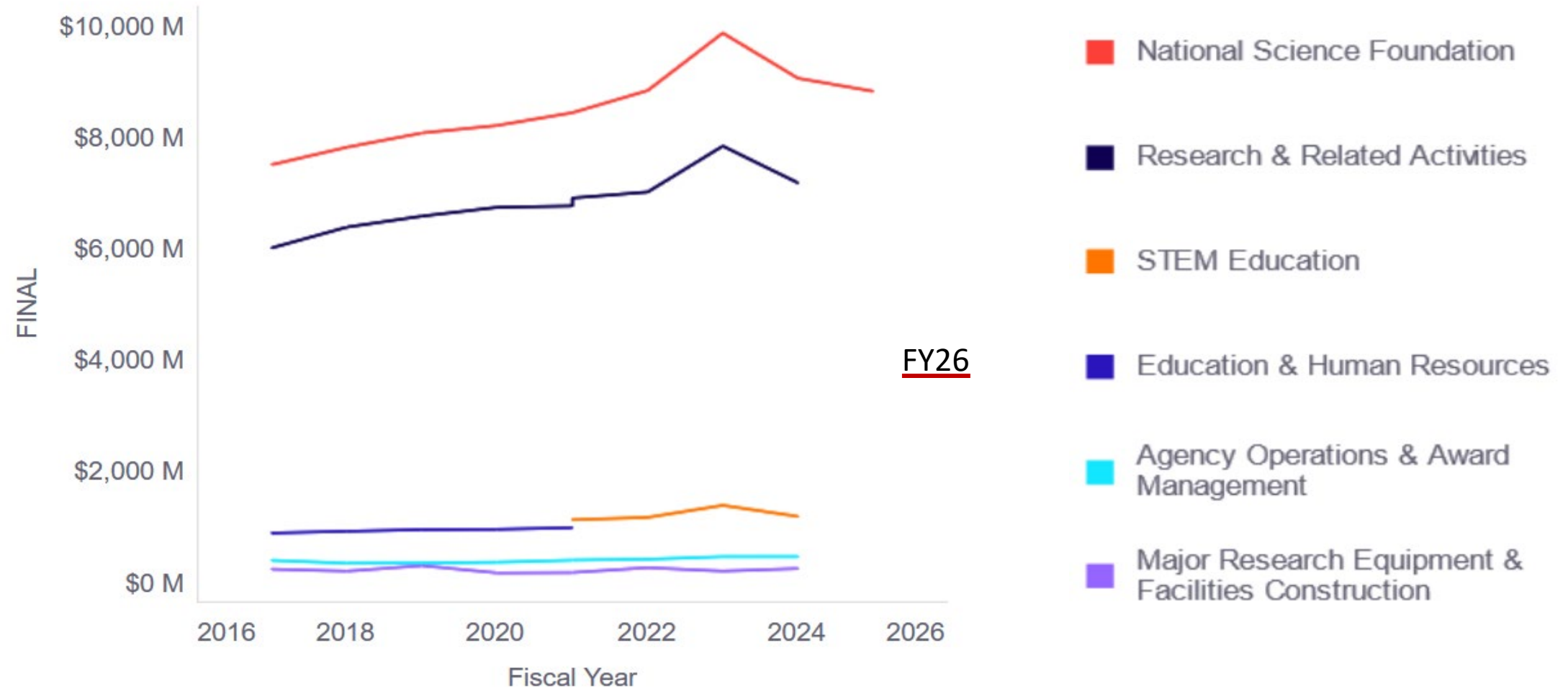
NSF “joint” Projects in Nuclear Physics

- MOLLER – parity violating Moller (elastic $\vec{e} e$) scattering
 - CD-1 Dec 2020, CD-2/3 May 2024
 - NSF PHY Mid-scale award for specific scope
- EIC – the Electron Ion Collider
 - DOE CD-1 in Jul 2021, CD-3A, ...
 - Project includes EIC + 1 detector (ePIC)
- Next Generation $0\nu\beta\beta$
 - Demonstrators: CUOREcino, CUORE, MJD, EXO-200, KamLAND-Zen, NEMO, ...
 - DOE $0\nu\beta\beta$ portfolio review
 - LEGEND-200





NSF Appropriations – figure from the AIP



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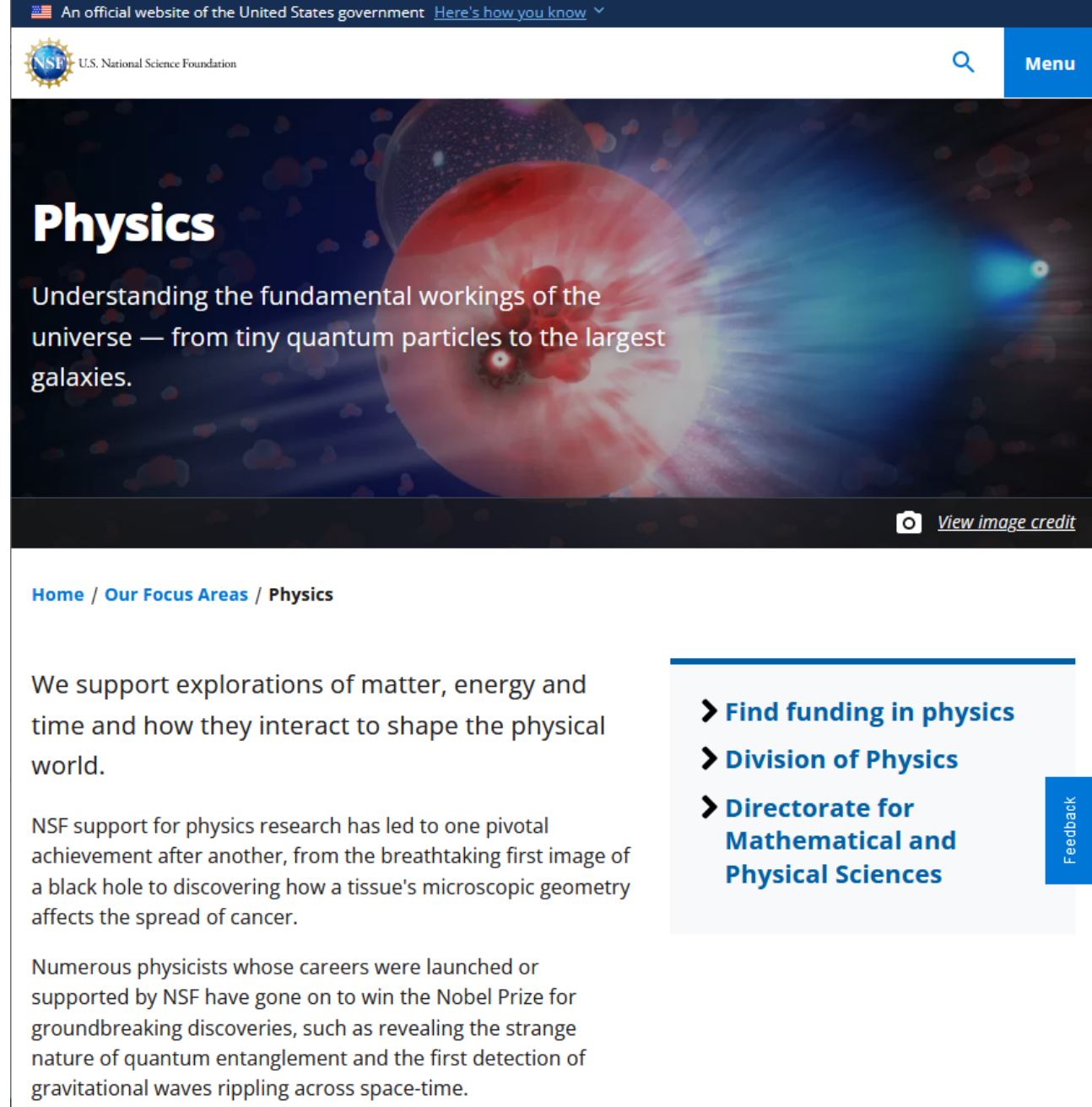
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A screenshot of the NSF website's Physics page. The header includes the NSF logo and the text "U.S. National Science Foundation". A search icon and a "Menu" button are in the top right. The main content area features a large image of a red and white particle collision with the word "Physics" in large white text. Below the image is the text: "Understanding the fundamental workings of the universe — from tiny quantum particles to the largest galaxies." A "View image credit" link is at the bottom right of the image. Below the image is a breadcrumb trail: "Home / Our Focus Areas / Physics". The main text reads: "We support explorations of matter, energy and time and how they interact to shape the physical world." This is followed by a paragraph: "NSF support for physics research has led to one pivotal achievement after another, from the breathtaking first image of a black hole to discovering how a tissue's microscopic geometry affects the spread of cancer." Another paragraph follows: "Numerous physicists whose careers were launched or supported by NSF have gone on to win the Nobel Prize for groundbreaking discoveries, such as revealing the strange nature of quantum entanglement and the first detection of gravitational waves rippling across space-time." On the right side, there is a vertical list of links: "Find funding in physics", "Division of Physics", and "Directorate for Mathematical and Physical Sciences". A "Feedback" button is located at the bottom right of this list. The footer of the screenshot shows a navigation bar with "NOVA" and "PBS" logos.