

Evolving NSF Oversight

(& Other Developments)



Matt Hawkins
Head, Large Facilities Office
NSF Large Facilities Workshop
May 1-3, 2017
Baton Rouge/LIGO Livingston

Overview

- Budget
- Quick Status of Projects in Design and Construction
- Recent Legislation
- NAPA Report – One Year Later
- Other Developments & Topics



Federal Budget

We're here! Perfect Timing...



Daniel K. Inouye Solar Telescope (DKIST)

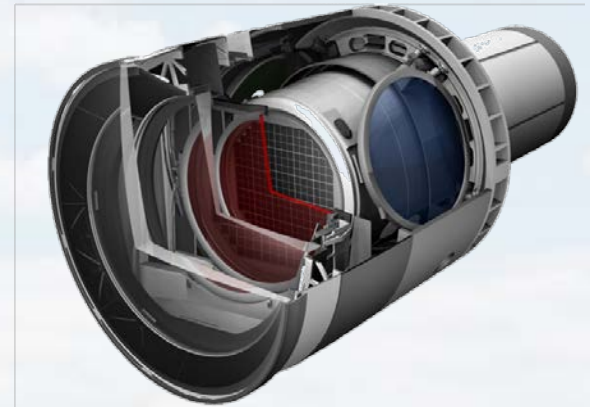
- AURA
- 75% Complete (Fully Enclosed)
- Coudé Rotator Tested
- Complete: Summer 2020



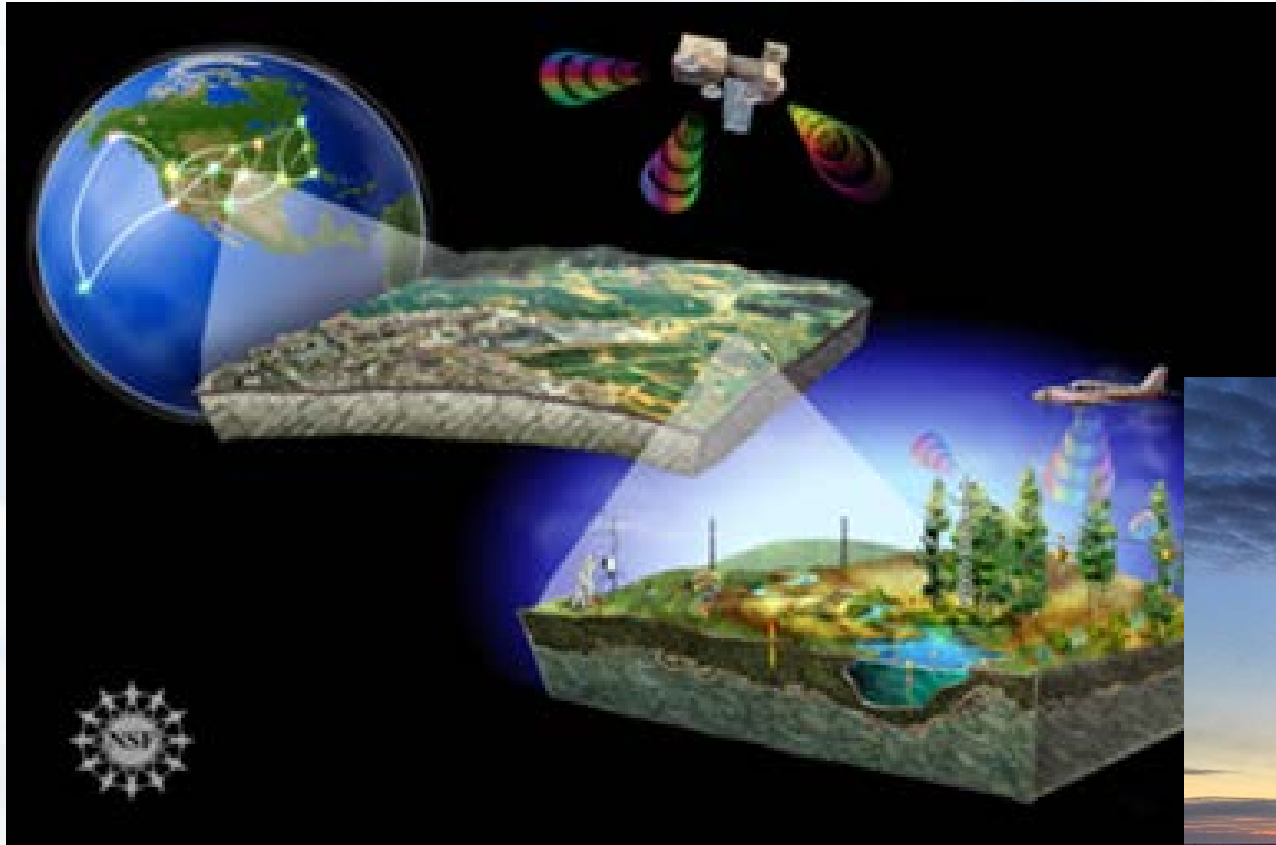
Large Synoptic Survey Telescope (LSST)



- AURA
- 40% Complete
- Transition to Operations Review
- DOE Partnership (Camera)
- Complete: Late 2021
- Science Operations: Late 2022



National Ecological Observatory Network (NEON)



- Battelle
- 80% Complete
- 55% Transitioned to Operations
- Complete: Early 2018



Courtesy: Chris McKay, BMI

Regional Class Research Vessel (RCRV)



- Oregon State University
- Academic Research Fleet
- Final Design > Construction
- FY 2017 MREFC Budget Request

Antarctic Infrastructure Modernization for Science (AIMS)

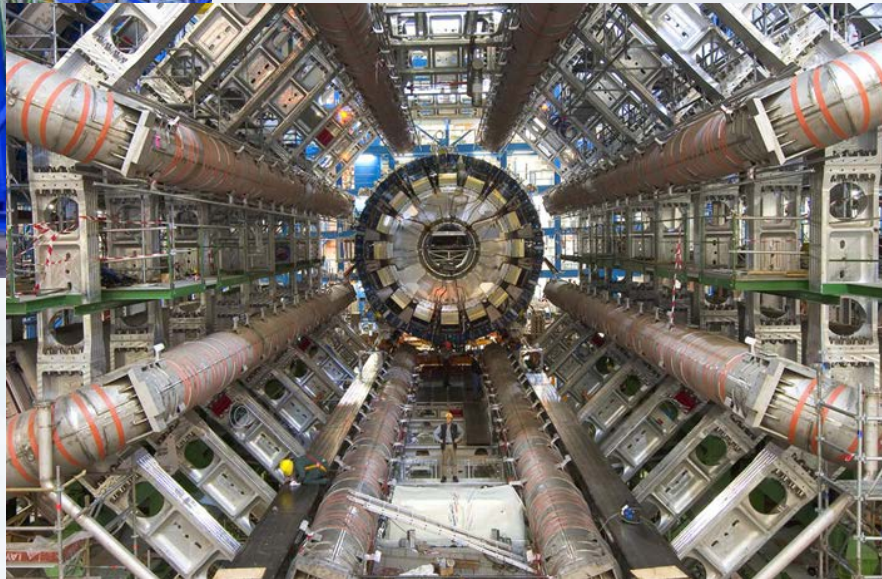


- **Leidos**
- **McMurdo Consolidation**
- **Preliminary > Final Design Phase**
- **Future MREFC Budget Request if approved/authorized**

Large Hadron Collider High-Luminosity Upgrades (CMS & ATLAS Detectors at CERN)



- Cornell U. (CMS) & Columbia U. (ATLAS)
- Preliminary Design Phase
- PDR December 2017 & January 2018
- Close collaboration with DOE & CERN



Advanced Laser Interferometer Gravitational-wave Observatory (AdvLIGO)



- California Institute of Technology
- 99% Complete (Fall 2017)
- Data Computing System (DCS) implementation for greatest sensitivity
- Science Run O3

Recent Legislation

- American Innovation and Competitiveness Act (AICA) – Jan 2017
 - Close alignment with NAPA Recommendation
 - Full Life-Cycle Oversight
 - GAO Cost Estimating and Assessment Guide
 - **Independent Cost Estimate > Required (Timing and scope)**
 - **Incurred Cost Audits > Risk-based, at Completion, NTE 3 years)**
- Program Management Improvement and Accountability Act – Dec 2016



Major Multi-User Research Facilities Project

AICA Section 110 - “Major Facility”

- Anything funded through the **MREFC account**:
 - Construction, Acquisition & Commissioning (per statute)
 - Threshold at NSF’s discretion
- Anything funded from the **R&RA account** *that can be constructed, acquired or commissioned* and has a Total Project Cost (TPC) for the Construction Stage of:
 - \$100M or
 - 10% of the Directorate’s Current Plan, whichever is less



Major Facility TPC Thresholds - FY 2016

		Funding Account		
	FY2016 Current Plan (CP)	R&RA (lesser of)		MREFC
		10% CP	or \$100M	
BIO	723.3	72.33	72.3	\$70
CISE	934.72	93.47	93.5	\$70
EHR	878.97	87.90	87.9	\$70
ENG	914.61	91.46	91.5	\$70
GEO	1317.08	131.71	100.0	\$70
MPS	1347.57	134.76	100.0	\$70
SBE	271.88	27.19	27.2	\$70
OIA	430.06	43.01	43.0	\$70
OISE	49.04	4.90	4.9	\$70



Mid-scale Research Infrastructure (RI)

AICA Section 109



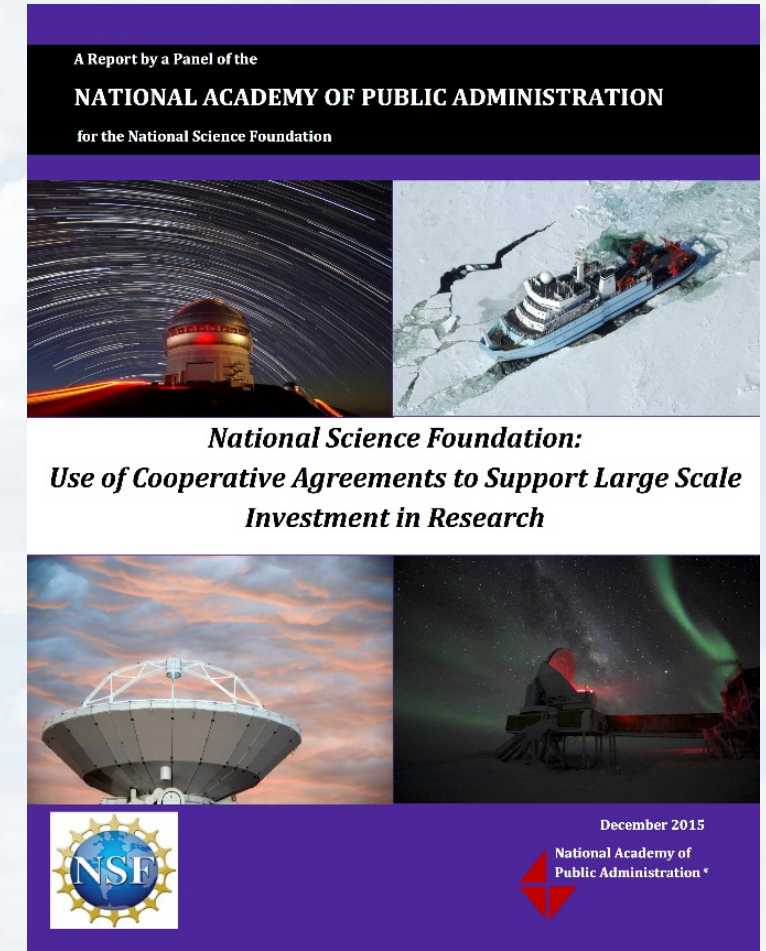
- Funded from R&RA
- Construction TPC between **\$4M (MRI)** & **\$70M (MREFC)**

10 BIG IDEAS: “Lowering the threshold for MREFC expenditures, with appropriate modification of processes, would increase the flexibility for excellent science to be done across the agency.”

Dr. Córdova

NAPA Study - One Year(+) Later

- Supported NSF's use of Cooperative Agreements
- “Equal emphasis” between business practices & science/technical
- Well-positioned for AICA
- Implementation loose ends:
 - Internal NSF oversight structure (MREFC Panel, etc.)
 - Implement “Lessons Learned” Requirement
 - Recipient certification in project management



Earned Value Management (EVM)

- Verification, Acceptance and Surveillance in lieu of Certification
- DKIST & LSST EMVS Accepted
- Construction Stage > **Required**
- Design Stage > **at Program discretion**
- Operations Stage > **Not required**
 - “Activities-based” vs. deliverables-based WBS
 - May be used on major upgrade sub-projects if beneficial



Terminology

- “Contingency” > YES (Per Uniform Guidance & LFM)
- “Allowance” > YES (in Basis of Estimate)
- “Reserves” > **NO** (not allowed per Uniform Guidance)



Additional Topics

- RI impacts on U.S. “Innovation System”
- Operations Performance Metrics
- International Collaboration & Coordination



Large Facilities Manual (LFM) – March 2017 (NSF 17-066)

- Applicability (AICA definition of “Major Facility”)
- Section 4.2 – Cost Estimating and Analysis (Revised)
- “Management Fee” > “Fee”
- Incurred Cost Audit Tool

LFO Website: https://www.nsf.gov/bfa/lfo/lfo_documents.jsp

NSF Documentation Related to Large Facilities:

- ✓ Proposal and Awards Policy and Procedures Guide (PAPPG)
- ✓ Large Facilities Manual (LFM)
- ✓ Business Systems Review (BSR) Guide
- ✓ NSF Internal Standard Operating Guidance – “Consult with PO or G&AO”



How was your
Workshop
experience?



QUESTIONS & DISCUSSION?

