

**NATIONAL SCIENCE FOUNDATION  
RESEARCH INFRASTRUCTURE SUMMARY  
FY 2019 BUDGET REQUEST TO CONGRESS**  
(Dollars in Millions)

	FY 2017 Actual	FY 2018 (TBD)	FY 2019 Request	FY 2019 Request change over	
				FY 2017 Actual Amount	Actual Percent
<b>Facilities</b>	<b>\$703.76</b>	-	<b>\$707.65</b>	<b>\$3.89</b>	<b>0.6%</b>
Academic Research Fleet <sup>1</sup>	82.03	-	77.80	-4.23	-5.2%
Arecibo Observatory	8.00	-	6.08	-1.92	-24.0%
AST Portfolio Review Implementation <sup>2</sup>	0.09	-	6.74	6.65	7058.4%
Cornell High Energy Synchrotron Source (CHESS)	26.20	-	10.00	-16.20	-61.8%
Gemini Observatory	24.24	-	21.66	-2.58	-10.6%
Geodesy Advancing Geosciences and EarthScope (GAGE)	13.10	-	12.19	-0.91	-6.9%
IceCube Neutrino Observatory (IceCube)	7.00	-	7.00	-	-
International Ocean Discovery Program (IODP)	48.00	-	48.00	-	-
Large Hadron Collider (LHC)	16.00	-	16.00	-	-
Laser-Interferometer Gravitational-wave Observatory (LIGO)	41.93	-	45.00	3.07	7.3%
National High-Magnetic Field Laboratory (NHMFL)	23.15	-	35.76	12.61	54.5%
National Nanotechnology Coordinated Infrastructure (NNCI)	15.55	-	14.78	-0.77	-5.0%
National Superconducting Cyclotron Laboratory (NSCL) (MSU Cyclotron)	24.00	-	24.00	-	-
Natural Hazards Engineering Research Infrastructure (NHERI)	14.99	-	11.75	-3.24	-21.6%
Ocean Observatories Initiative (OOI) <sup>3</sup>	0.34	-	40.00	39.66	11638.8%
Other Facilities <sup>4</sup>	2.78	-	2.79	0.01	0.2%
Polar Facilities and Logistics	330.30	-	303.94	-26.36	-8.0%
Seismological Facilities for Advancement of Geosciences and EarthScope (SAGE)	26.05	-	24.16	-1.89	-7.3%
<b>Major Research Facilities Construction Investments</b>	<b>\$297.01</b>	-	<b>\$288.02</b>	<b>-\$8.99</b>	<b>-3.0%</b>
Construction, Acquisition, and Commissioning (MREFC) <sup>5</sup>	222.45	-	93.65	-128.80	-57.9%
Construction, Acquisition, and Commissioning (R&RA) <sup>6</sup>	-	-	103.70	103.70	N/A
Development and Design <sup>7</sup>	10.79	-	6.67	-4.12	-38.2%
Initial Operations and Maintenance During Construction <sup>8</sup>	63.76	-	84.00	20.24	31.7%
<b>Federally Funded R&amp;D Centers</b>	<b>\$221.54</b>	-	<b>\$214.55</b>	<b>-\$6.99</b>	<b>-3.2%</b>
National Center for Atmospheric Research (NCAR)	99.70	-	94.70	-5.00	-5.0%
National Optical Astronomy Observatories (NOAO)	22.99	-	20.13	-2.86	-12.4%
National Radio Astronomy Observatories (NRAO) <sup>9</sup>	76.66	-	79.13	2.47	3.2%
Other Astronomical Facilities <sup>10</sup>	11.45	-	11.85	0.40	3.5%
National Solar Observatory <sup>11</sup>	6.00	-	4.00	-2.00	-33.3%
Science & Technology Policy Institute (STPI)	4.74	-	4.74	-	-
<b>Other Research Instrumentation and Infrastructure</b>	<b>\$493.72</b>	-	<b>\$500.58</b>	<b>\$6.86</b>	<b>1.4%</b>
Major Research Instrumentation (MRI)	76.20	-	75.00	-1.20	-1.6%
Mid-scale Research Infrastructure	39.38	-	75.31	35.93	91.2%
National Center for Science & Engineering Statistics (NCSES)	45.15	-	50.55	5.40	12.0%
NCSES Science of Science and Innovation Policy (SciSIP) Activities	4.95	-	-	-4.95	-100.0%
Networking and Computational Resources Infrastructure and Services	128.15	-	117.50	-10.65	-8.3%
Polar Environment, Health, and Safety (PEHS)	6.61	-	6.13	-0.48	-7.2%
Research Resources <sup>12</sup>	193.29	-	174.34	-18.95	-9.8%
Research Resources – Public Access Initiative	-	-	1.75	1.75	N/A
<b>Subtotal, Research Infrastructure Support</b>	<b>\$1,716.02</b>	-	<b>\$1,710.80</b>	<b>-\$5.22</b>	<b>-0.3%</b>
<b>Research Infrastructure Stewardship Offset</b>	<b>-\$1.00</b>	-	<b>-\$1.89</b>	<b>-\$0.89</b>	<b>89.1%</b>
<b>RESEARCH INFRASTRUCTURE TOTAL</b>	<b>\$1,715.02</b>	-	<b>\$1,708.91</b>	<b>-\$6.11</b>	<b>-0.4%</b>

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<sup>1</sup>Academic Research Fleet funding includes ship operations and upgrades. Regional Class Research Vessels (RCRV) funding is no longer included on this line as MREFC construction began in FY 2017.

<sup>2</sup>The funding change for AST Portfolio Review is due to the timing of contracts engaged to meet legal requirements of portfolio review activities (e.g., National Historic Preservation Act, National Environmental Policy Act).

<sup>3</sup>The FY 2017 budget of \$340,000 reflects only the incremental support necessary to enable the potential transition of managing institutions associated with the competition for a new operation and management award of the OOI. FY 2017 operations and maintenance were funded in a prior year.

<sup>4</sup>Other Facilities includes ongoing MPS support for the Center for High Resolution Neutron Scattering (CHRNS).

<sup>5</sup>Construction, Acquisition, and Commissioning are for implementation support provided through the MREFC account. MREFC funding is included for NEON and RCRV in FY 2017; in FY 2017 and FY 2019, DKIST, and LSST are included.

<sup>6</sup>Construction, Acquisition, and Commissioning are for implementation support provided through the R&RA account. R&RA funding is included for AIMS in FY 2019.

<sup>7</sup>Development and Design includes funding for potential next generation multi-user facilities. This line reflects funding for RCRV in FY 2017 (\$2.11 million) and Antarctic Infrastructure Modernization for Science (AIMS) in FY 2017 and FY 2019 (\$2.97 million and \$370,000, respectively). Also included is funding for a potential High-Luminosity Large Hadron Collider (LHL-HC) Upgrade in FY 2017 and FY 2019 (\$5.71 million and \$6.30 million, respectively).

<sup>8</sup>Initial Operations and Maintenance During Construction are Research and Related Activities (R&RA) funds for these purposes while MREFC construction is ongoing. Funding is included for FY 2017 and FY 2019 for NEON (\$50.26 million and \$52.0 million, respectively) and DKIST (\$13.50 million and \$18.50 million, respectively), and for LSST in FY 2019 (\$500,000).

<sup>9</sup>Funding for the National Radio Astronomy Observatory (NRAO) includes operations and maintenance support for the Atacama Large Millimeter Array (ALMA).

<sup>10</sup>Other AST Facilities: This section captures funding for the Green Bank Observatory and the Long Baseline Observatory (formerly VLBA). Support beyond FY 2018 is currently undecided, so funding for FY 2019 is notional.

<sup>11</sup>National Solar Observatory (NSO) totals presented do not include \$11.50 million in FY 2017 and \$16.50 in FY 2019 for operations and maintenance support for the DKIST facility construction project. DKIST funding is captured within the total presented on the Initial Operations and Maintenance During Construction line.

<sup>12</sup>Funding for Research Resources includes support for the operation and maintenance of minor facilities, infrastructure and instrumentation, field stations, museum collections, etc.

