

DIVISION OF POLAR PROGRAMS (PLR)

\$464,860,000
+\$23,010,000 / 5.2%

PLR Funding
(Dollars in Millions)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Request	Change Over FY 2016 Estimate	
				Amount	Percent
Total, PLR	\$443.02	\$441.85	\$464.86	\$23.01	5.2%
Research	111.30	128.00	139.82	11.82	9.2%
CAREER	1.21	1.03	1.03	-	-
Education	3.37	2.71	2.35	-0.36	-13.3%
Infrastructure	328.35	311.14	322.69	11.55	3.7%
Arctic Research Support and Logistics	56.52	39.41	42.41	3.00	7.6%
IceCube Neutrino Observatory (IceCube)	3.45	3.45	3.50	0.05	1.4%
U.S. Antarctic Facilities and Logistics	194.20	194.14	202.14	8.00	4.1%
U.S. Antarctic Logistical Support	67.52	67.52	67.52	-	-
Polar Environment, Safety, and Health (PESH)	6.66	6.62	7.12	0.50	7.6%
Facilities Pre-Construction Planning	3.70	14.50	5.00	-9.50	-65.5%

Totals may not add due to rounding.

The FY 2017 Budget Request for PLR is \$464.86 million, of which \$441.84 million is discretionary funding and \$23.02 million is new mandatory funding. The mandatory funding is within the Research (\$11.52 million), Arctic Research Support and Logistics (\$3.0 million), Antarctic Facilities and Logistics (\$8.0 million), and Polar Environment, Safety, and Health (\$500,000) lines in the above table.

The Division of Polar Programs (PLR) provides interagency leadership and is the primary U.S. supporter of research in the polar regions. Arctic Sciences supports research in social, earth systems, and a broad range of natural sciences; its' Research Support and Logistics program responds to research by assisting researchers with access to the Arctic and the planning and sharing of results with local Arctic communities. Antarctic Sciences funds research in a broad range of areas for which access to Antarctica and/or the Southern Ocean is essential to advancing the scientific frontiers. Antarctic Facilities and Logistics enables research in Antarctica on behalf of the U.S. government through a network of stations, labs, equipment, and logistical resources. The Polar Environment, Safety, and Health (PESH) section provides oversight for the environmental, safety, and health aspects of research and operations conducted in polar regions.

PLR's FY 2017 Request reflects three key priorities: (1) maintaining strong disciplinary programs that provide a basis for investments in cross-disciplinary science programs; (2) focusing basic research on cross-foundation (e.g., INFEWS, PREEVENTS) and interagency priorities; and (3) supporting and improving the efficiency of critical facilities that enable research in both polar regions. For Antarctica, the primary objective is to continue progress on a multi-year commitment toward more efficient and cost-effective science support as recommended by the U.S. Antarctic Program (USAP) Blue Ribbon Panel (BRP) report, *More and Better Science in Antarctica through Increased Logistical Effectiveness*.¹⁰ NSF issued a formal response to this report in March 2013.¹¹ Emphases include safety and health improvements, investments with positive net present value, and facilities renewal at McMurdo and Palmer stations. Additionally, the Antarctic sciences community is planning for the more effective observational approaches and science

¹⁰ www.nsf.gov/od/opp/usap_special_review/usap_brp/rpt/index.jsp

¹¹ www.nsf.gov/news/news_summ.jsp?cntn_id=127345&org=NSF&from=news

priorities that were respectively outlined in 2011 and 2015 NRC reports; *Future Science Opportunities in Antarctica and the Southern Ocean*¹² and *A Strategic Vision for NSF Investments in Antarctic and Southern Ocean Research*.¹³ For the Arctic, shared cross-directorate basic research objectives, the Interagency Arctic Research Policy Committee's (IARPC) *Arctic Research Plan: FY 2013-2017*,¹⁴ and the *National Ocean Policy Implementation Strategy*¹⁵ inform science investment priorities.

PLR funds both research and the necessary research support in the form of logistics and infrastructure. About 13 percent of PLR's funds are available for new research grants each year. The supporting logistics and infrastructure budget is 70 percent of overall funds, with the remainder supporting research awards made in prior years.

FY 2017 Summary

All funding decreases/increases represent change over the FY 2016 Estimate.

Research

- Funding for research increases by \$11.82 million, to a total of \$139.82 million.
- Approximately \$8.52 million of the increase is directed toward land/ocean/ice interface and sea level change, including related critical supporting science infrastructure.
- An investment of \$1.0 million in the cross-directorate INFEWS activity will fund research for understanding the mechanisms that enable sustainability and resiliency of global water, food, and energy resources.
- A continued investment of \$1.0 million will fund polar research efforts contributing to the cross-directorate Risk and Resilience emphasis area through the PREEVENTS program.
- Research funding dedicated to SEES will decrease (-\$1.50 million), to a total of \$1.50 million, as focus areas related to earth systems modeling and Arctic sustainability end.

Education

- Funding decreases (-\$360,000) to a total of \$2.35 million, due to the end of funding for IGERT commitments.

Infrastructure

- Arctic Research Support and Logistics: This program provides support for Arctic researchers, including access to airplanes, helicopters, research vessels including icebreakers, and field camps for approximately 150 projects in remote sites in Alaska, Greenland, Canada, Arctic Scandinavia, Russia, and the Arctic Ocean. Summit Station on the Greenland ice cap operates as a year-round international site for a variety of atmospheric and geophysical measurements. An increase (+\$3.0 million) to a total of \$42.41 million, enables increased use of marine platforms, such as the newly available *Sikuliaq*, for oceanographic research.
- IceCube Neutrino Observatory: PLR continues to match the MPS contribution, at \$3.50 million, that includes an increase of \$50,000 in FY 2017 for operation and maintenance.
- U.S. Antarctic Facilities and Logistics: Funding provides all necessary infrastructure, instrumentation, and logistics for scientists from all disciplines and all U.S. agencies performing research in Antarctica. This support includes forward staging facilities in New Zealand and South America; operation of three year-round stations in Antarctica; Department of Defense fixed-wing aircraft, contracted rotary- and fixed-wing aircraft; two leased research vessels; and icebreaking services from the U.S. Coast Guard

¹² www.nap.edu/catalog.php?record_id=13169

¹³ www.nap.edu/catalog/21741/a-strategic-vision-for-nsf-investments-in-antarctic-and-southern-ocean-research

¹⁴ www.nsf.gov/od/opp/arctic/iarpc/arc_res_plan_index.jsp

¹⁵ www.whitehouse.gov/administration/eop/oceans/implementationplan

in support of annual resupply efforts. This budget request of \$202.14 million includes an \$8.0 million increase. Approximately \$23.50 million (+\$5.0 million) will be spent on implementing the BRP recommendations, allowing for timely replacement of the Ross Island ground station that is critical for weather and other satellite data transfer. Within this amount, \$5.0 million is for advancing the Antarctic Infrastructure Modernization for Science (AIMS) project to redevelop McMurdo Station toward Preliminary Design Review. This comprehensive redevelopment of McMurdo involves replacement and reconfiguration of core science, operations, and logistics support facilities for more efficient and effective support of Antarctic science.

- **Polar Environment, Safety and Health:** Funding is provided for implementation of both environmental protection and environmental stewardship to minimize the environmental impact of PLR-supported activities in polar regions, as well as programs to ensure the safety and health of participants in Antarctica, and certain Arctic operating locations. An increase of \$50,000, to a total of \$7.12 million, permits development of a suite of web-based tools for managing the secure transfer of polar participants' medical information and environmental permitting and reporting that is required for compliance with the Antarctic Treaty and U.S. implementing legislation.