

**Proposal, Award, and Principal Investigator Data
For the NSF's Office of Polar Programs and Division of Polar Programs
During Fiscal Years 2011-2015**

This document is a companion to National Science Foundation (NSF) Dear Colleague Letter (DCL) 16-107, which seeks community input about the position of NSF's Division of Polar Programs within the Foundation. As noted in the DCL, in FY 2013, the reporting structure for the unit within NSF responsible for coordinating polar research and research support on behalf of the Foundation was realigned from the Office of Polar Programs (OPP) to the Division of Polar Programs (PLR) within the Directorate for Geosciences (GEO). The mission of the unit was unchanged by the realignment:

***OPP/PLR Mission.** The mission of OPP/PLR has been to support individual investigators, research teams, and U.S. participation in inter- and multi-national projects. Projects may involve investigators from many disciplines and institutions over several years. Organizationally, OPP/PLR has maintained two science sections - one for the Arctic and another for the Antarctic. A third section manages the Antarctic logistics and support operations including field stations, camps, laboratories, ships, and airplanes. Environmental, safety and health aspects of research and operations conducted in Polar Regions are handled by a fourth section. The United States is a leading nation in polar science, and research results have global significance. Because the Polar Regions intrigue the public, they provide opportunities for educational enrichment. Polar Regions are unique natural laboratories. A range of research can be undertaken only there or best there. OPP/PLR considers supporting polar research to understanding Earth and its systems, exploring the geographical frontier, and performing science enabled by the polar setting.*

This document presents selected data related to OPP and PLR over federal fiscal years (FY) 2011 through 2015. OPP data span FY 2011, FY 2012, and part of FY 2013; PLR data span part of FY 2013, FY 2014, and FY 2015. For simplicity, this document refers to the unit as "OPP/PLR" when referring to data from the entire five-year time period.

- Section 1 presents the overall OPP/PLR budgets, in the context of GEO and NSF budgets;
- Section 2 summarizes OPP/PLR proposal and award activity by area;
- Section 3 documents co-funding between OPP/PLR and other NSF directorates and offices, providing a measure of the level of collaboration across unit boundaries;
- Section 4 presents data on OPP/PLR international engagement;
- Section 5 includes demographics of the OPP/PLR principal investigator (PI) community; and
- Section 6 provides OPP/PLR staffing information over the five-year period.

Additional information about OPP/PLR can be found in the President's Budget Requests for the same period, available at <http://www.nsf.gov/about/budget/>.

1. Overall OPP/PLR Budget

The overall NSF, GEO, and GEO divisional budgets, including OPP/PLR, are shown in Table 1 and plotted in Figure 1. Between FY 2011 and FY 2015, the NSF Research and Related Activities (R&RA) budget grew from \$5,510 million to \$5,934 million, an overall percentage increase of 7.7%. During the same period, the total GEO budget (including OPP/PLR) decreased by 1.5%, from \$1,324 million to \$1,304 million. The OPP/PLR budget decreased by 0.7%, from \$439.5 million to \$436.4 million. The aggregate funding decrease in FY2013 was due to the sequestration that was associated with the Budget Control Act of 2011.

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
PLR	\$439.51	\$435.87	\$420.48	\$434.61	\$436.35
AGS	\$257.61	\$258.66	\$244.97	\$251.00	\$251.15
EAR	\$183.43	\$183.50	\$173.71	\$177.05	\$177.20
OCE	\$351.90	\$351.90	\$342.82	\$355.49	\$355.95
ICER	\$91.83	\$91.21	\$83.86	\$83.64	\$83.74
Total (GEO)	\$1,324.28	\$1,321.14	\$1,265.84	\$1,301.79	\$1,304.39
NSF, R&RA Budget	\$5,509.98	\$5,689.00	\$5,543.72	\$5,801.63	\$5,933.65
NSF Total Budget	\$6,805.97	\$7,033.10	\$6,884.11	\$7,171.92	\$7,344.21

Table 1: GEO division Current Plan budgets (dollars in millions), including OPP in FY 2011-13, and NSF Research and Related Activities (R&RA) budgets, FY 2011-15.

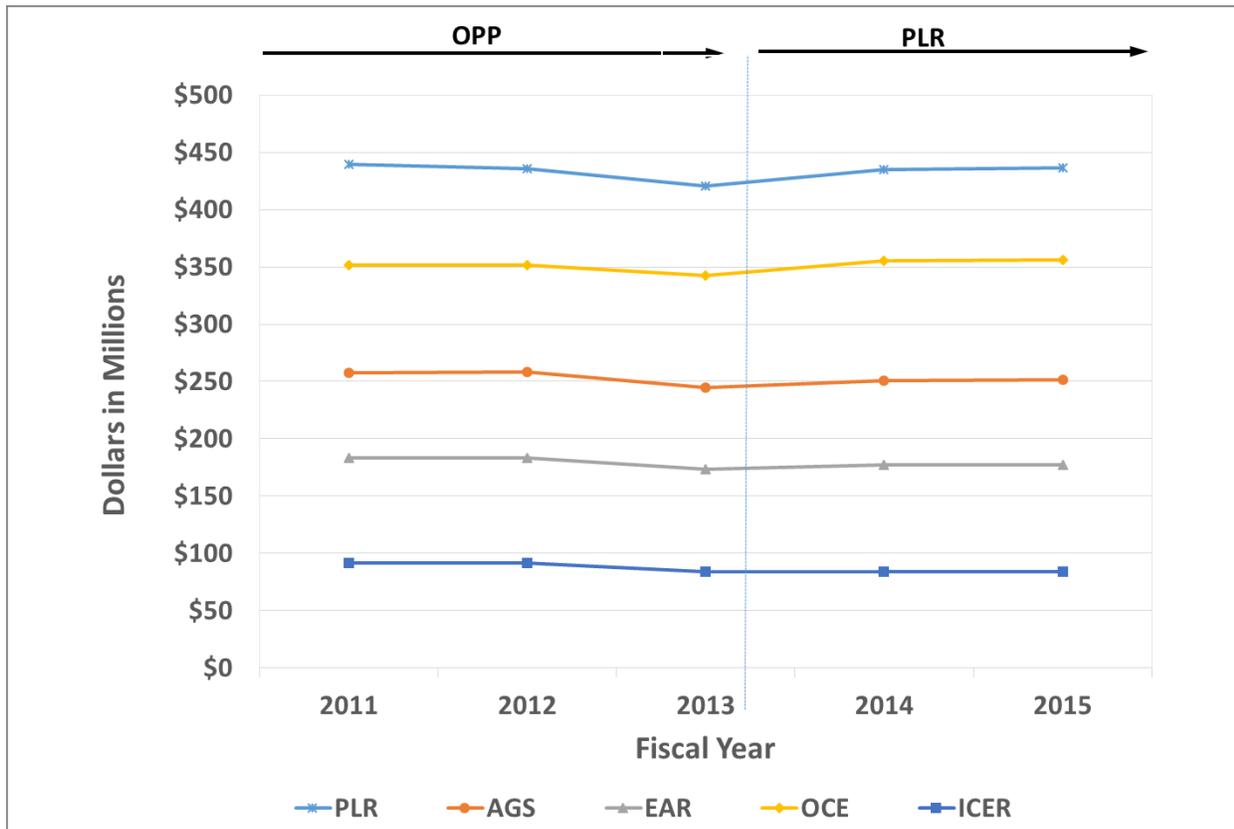


Figure 1: GEO divisional budgets (dollars in millions), including OPP in FY 2011-13, for the period FY 2011-15.

2. Proposal and Award Activity: Overall and by Funding Area

2.1 Number of proposals received

Figure 2 shows the annual number of all proposals received by OPP/PLR between FY 2011 and FY 2015, relative to proposals received by other GEO divisions and programs. During this period, the number of proposals received by OPP/PLR grew from 994 to 1202, an increase of 20.9%. Proposals received by GEO (including OPP/PLR) increased by 3.1%. The increase observed in OPP/PLR proposals received is due to robust increases across a number of individual programs, including Arctic Natural Sciences (increasing from 235 to 321 proposals), Antarctic Organisms and Ecosystems (from 92 to 134), Antarctic Integrated System Science (from 45 to 70), and Polar Cyberinfrastructure (which grew from 10 proposals in FY 2013 to 37 in FY 2015). The number of proposals received by the Antarctic Astrophysics and Geospace Sciences program during the period decreased from 62 to 37. The decrease was due largely to a procedural change by which IceCube science-related proposals are now submitted through MPS/PHY (and funding responsibilities subsequently shared).

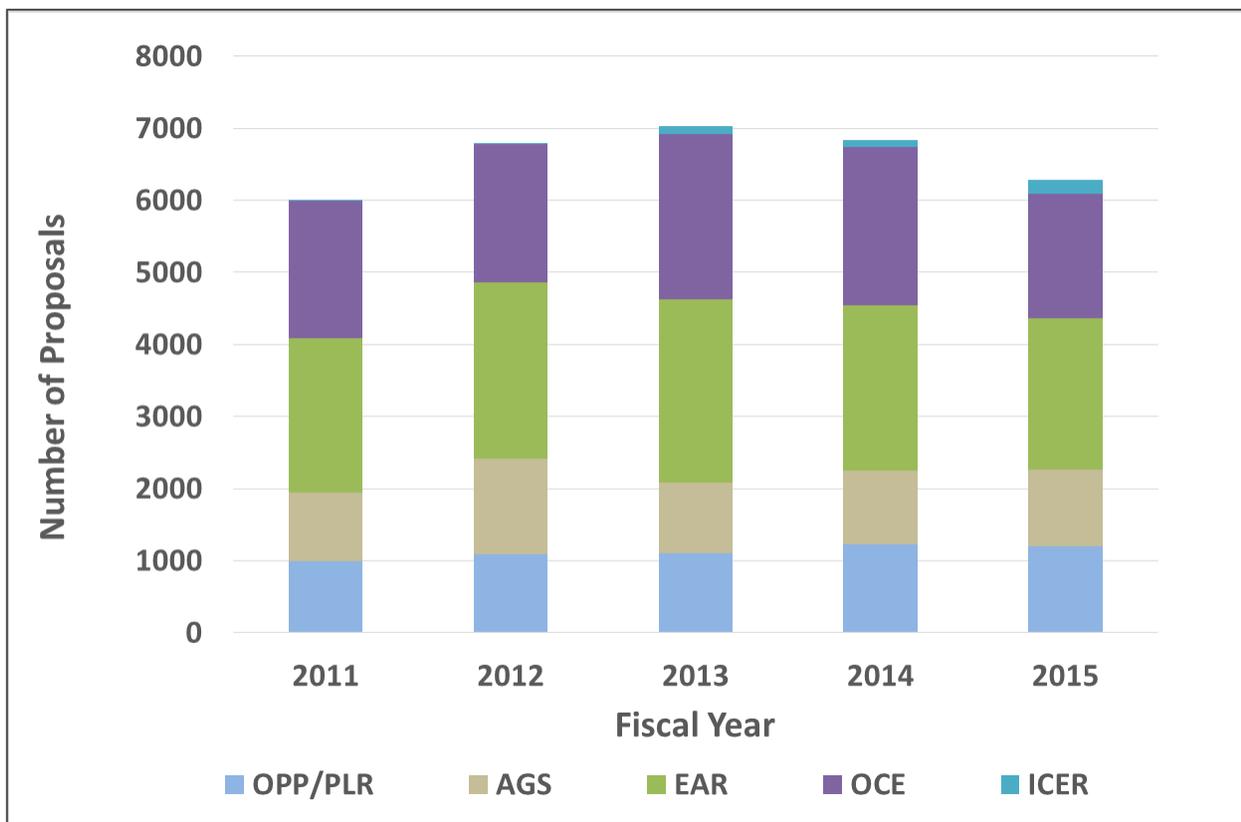


Figure 2: Number of proposals received by OPP/PLR in a given year relative to other GEO divisions and programs, FY 2011-15.

2.2 Distribution of OPP/PLR funding by area

Figure 3 shows investments across OPP/PLR's five primary funding areas: Antarctic Infrastructure and Logistics (AIL), Antarctic Sciences, Arctic Sciences, Arctic Research Support and Logistics (RSL), and Polar Environment, Safety and Health (PESH). Proportional investments in these areas have remained relatively constant, for the most part. Antarctic Sciences has grown about 2% over

the period 2011 to 2015 while Arctic Sciences has grown about 1%. Over the same period, Antarctic Infrastructure and Logistics has grown 4% due mainly to investments in equipment and facilities in response to the 2012 Blue Ribbon Panel Report. For example, in FY 2015, Antarctic Infrastructure and Logistics invested \$3.7 million in the initial planning phase for the Antarctic Infrastructure Modernization for Science (AIMS) project.

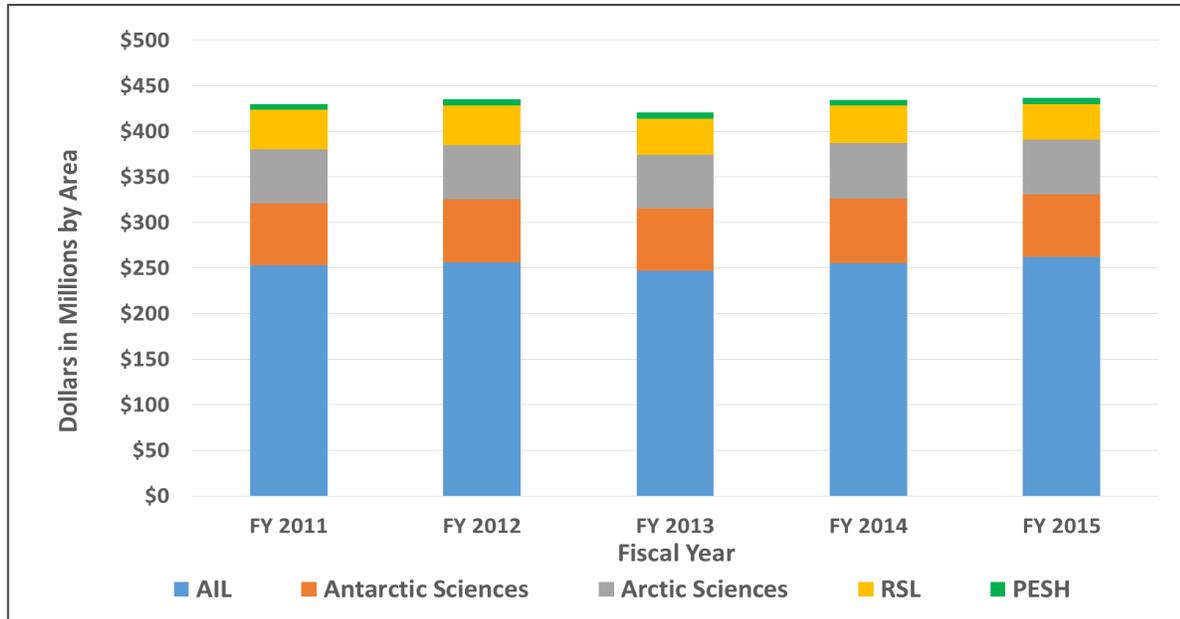


Figure 3: Allocation of OPP/PLR funding by primary area and year, FY 2011-15.

3. Joint Funding between OPP/PLR and Other Parts of NSF

Figure 4 shows the total amount of co-funding from other NSF directorates (“Co-funding In”) for OPP/PLR managed proposals by fiscal year between FY 2011 and FY 2015, as well as the total amount of co-funding from OPP/PLR for proposals managed by other NSF research directorates (“Co-funding Out”) during the same period.¹ OPP/PLR leverages expertise and subject matter interests through co-funding across the agency to cover its regionally focused mission. Figure 5 shows the breakdown of OPP/PLR co-funding out by directorate for each year. Between FY 2011 and FY 2015, OPP/PLR co-funded out \$76.7 million to other NSF directorates, while receiving \$47.1 million from other directorates. For the period as a whole, OPP/PLR’s ratio of co-funding out to co-funding in was \$1 to \$0.63 (which compares to a research directorate weighted average ratio of \$1 to \$1).² Of the \$76.7 million funded out by OPP/PLR, \$70.7 million went to GEO, EHR, and MPS. Between FY 2013 and FY 2015, co-funding out to GEO increased from \$4.7 million to \$11.2 million, or from 39.9% to 66.4% of OPP/PLR’s total co-funding out to other directorates. For the same period, the ratio of OPP/PLR co-funding out to GEO versus co-funding in from GEO was \$1 to \$0.53.

¹ All co-funding calculations are based on obligated dollar amounts as they appear in data drawn from the “Co-Funding Report” feature in the MyNSF Enterprise Reporting System. In order to make meaningful comparisons between pre- and post-merger timeframes, data was analyzed at the research directorate level and OPP/PLR was treated as a separate research directorate. Programs not managed directly by research directorates are not included in the analysis.

² It is noteworthy that for the ten year period between FY 2006 and FY 2015, OPP/PLR’s ratio of co-funding out to co-funding in was \$1 to \$0.49, which was the highest ratio among any NSF research directorate.

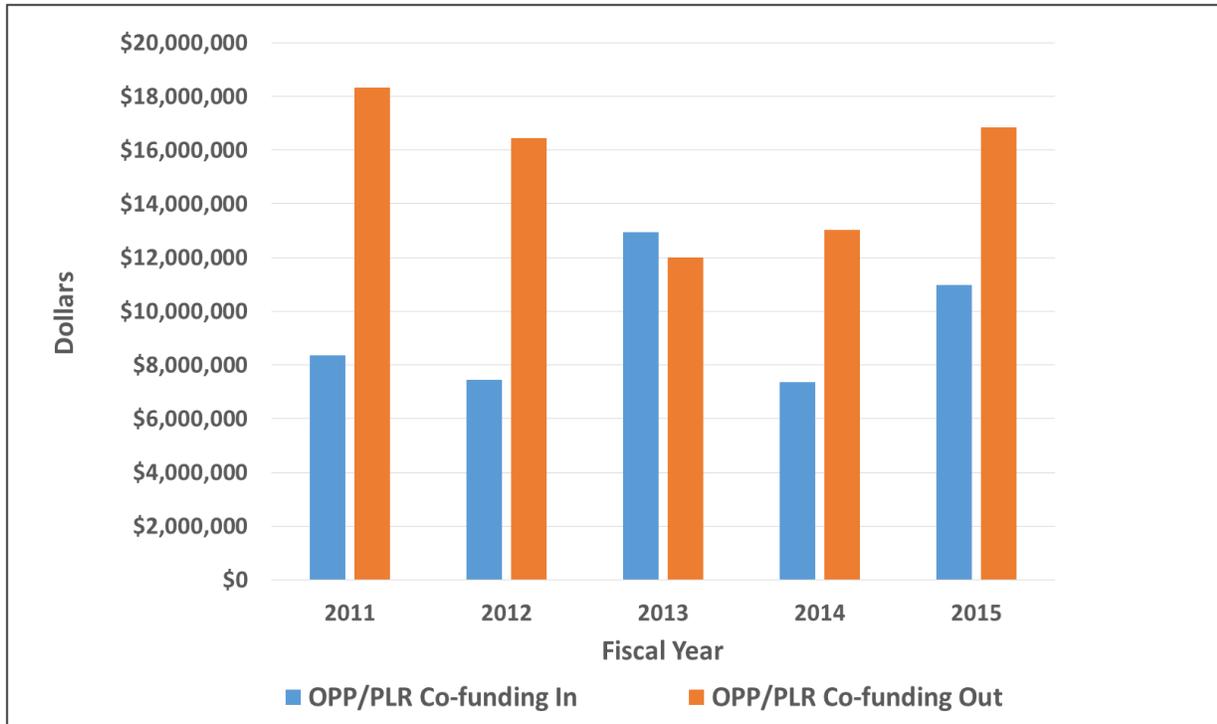


Figure 4: OPP/PLR Co-funding In and Co-Funding Out by year, FY 2011-15.

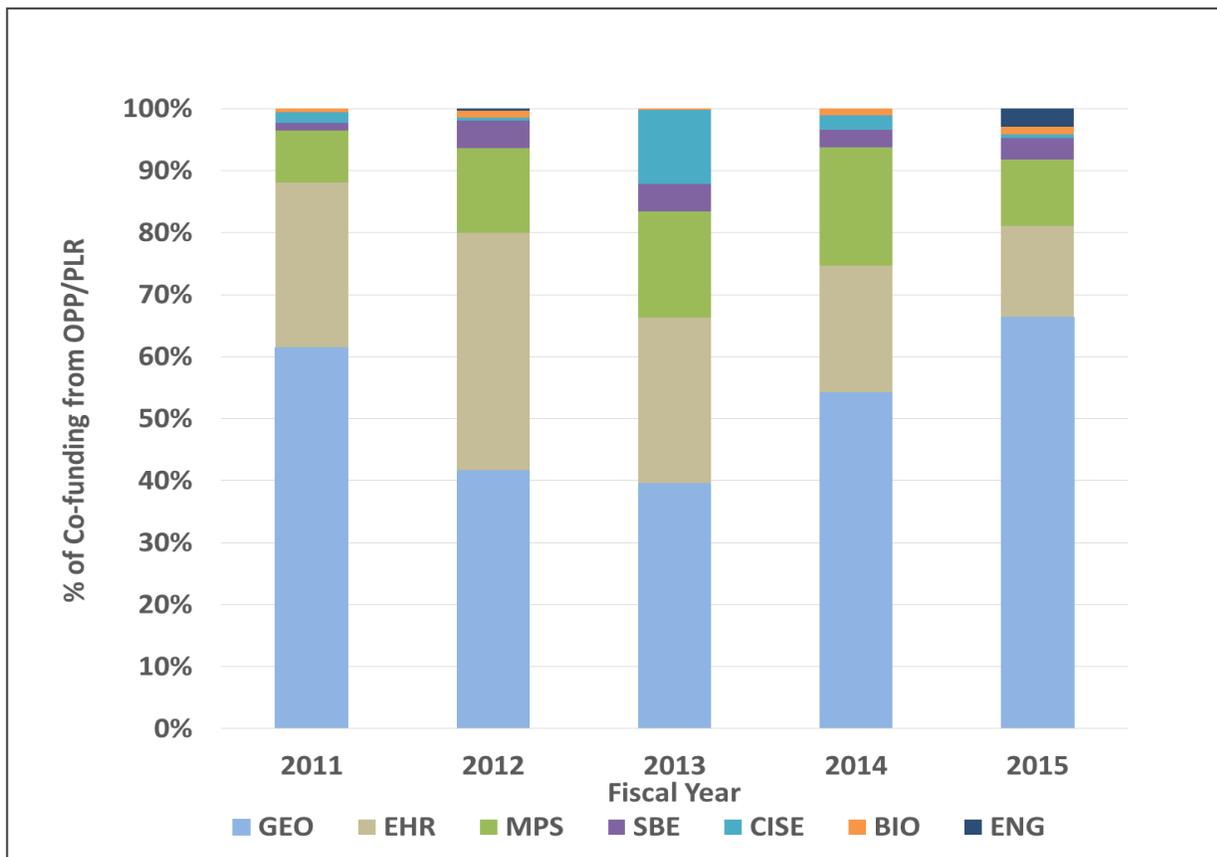


Figure 5: Co-funding Out from OPP/PLR to other NSF directorates by year, FY 2011-15.

4. OPP/PLR International Engagement

Figure 6 shows OPP/PLR science-related investments flagged for “International” activity in relation to like investments made by GEO (including OPP/PLR) and all NSF research directorates for the period of FY 2011 to FY 2015. During this time-frame, OPP/PLR’s internationally flagged annual science investments rose from 76.2% to 83.7% of total science investments, while GEO’s like investments remained fairly constant at around 55.7%. OPP/PLR has the highest percentage of “International” flagged award investments relative to any other NSF research division, while GEO as a whole has the highest number of such investments relative to any other research directorate. The rise observed in OPP/PLR internationally flagged investments is due in large part to increased efforts to foster collaborative scientific research in both Polar Regions during the International Polar Year (2007-08), with the largest relative growth in the Arctic, which started closer to the agency average at that time.

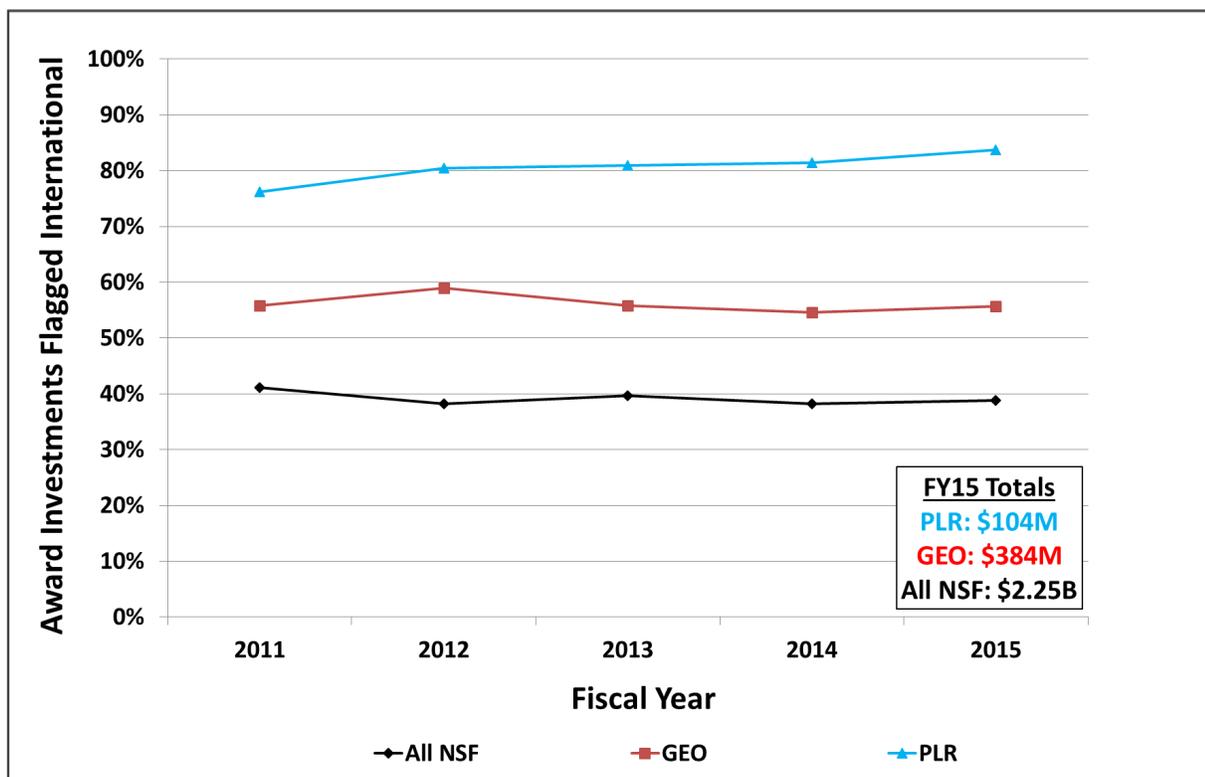


Figure 6: OPP/GEO award investment flagged “International” relative to GEO as a whole and all NSF research directorates. “Award Investments” refers to funding for grants, fellowships, fixed-price awards, and cooperative agreements for research or science education.

5. Demographics of the OPP/PLR—Supported Community

When submitting proposals to NSF, PIs have the option of self-reporting a number of key demographics. Figures 7 and 8 show proposals received by OPP/PLR in a given fiscal year by self-reported (including un-reported) gender and minority status, respectively. During the FY 2011 to FY 2015 period, OPP/PLR proposals with self-reported female gender rose from 262 to 290, but dropped proportionally from 26.4% to 24.1%. Proposals with self-reported male gender rose from 658 to 745, put dropped proportionally from 66.2% to 62.0%. The respective

percentage declines are partially accounted for during the period by an increase in proposals in which gender was not reported, which rose from 74 to 167, or from 7.4% to 13.9%. OPP/PLR proposals with self-reported minority status rose from 71 to 98, or from 7.1% to 8.1%, during the FY 2011 to FY 2015 period. Proposals with self-reported non-minority status rose from 816 to 875, but dropped proportionally from 82.1% to 72.8%. Proposals with un-reported minority status rose for 107 to 229, or from 10.8% to 19.1%.

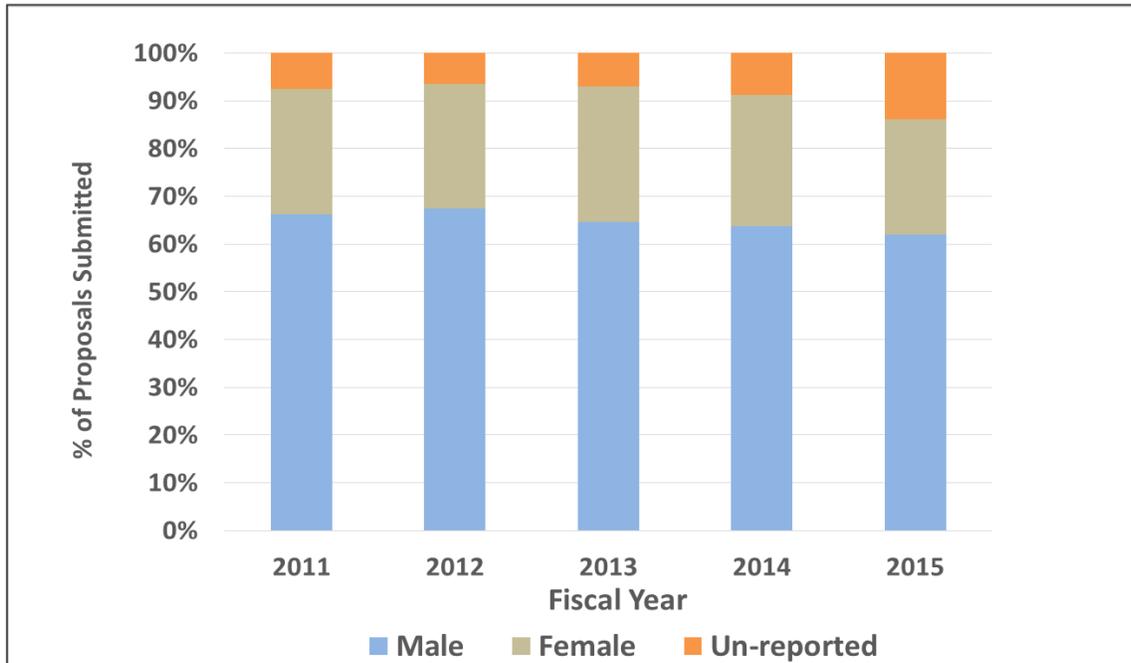


Figure 7: Proposals received by OPP/PLR in a given year by self-reported PI gender, FY 2011-15.

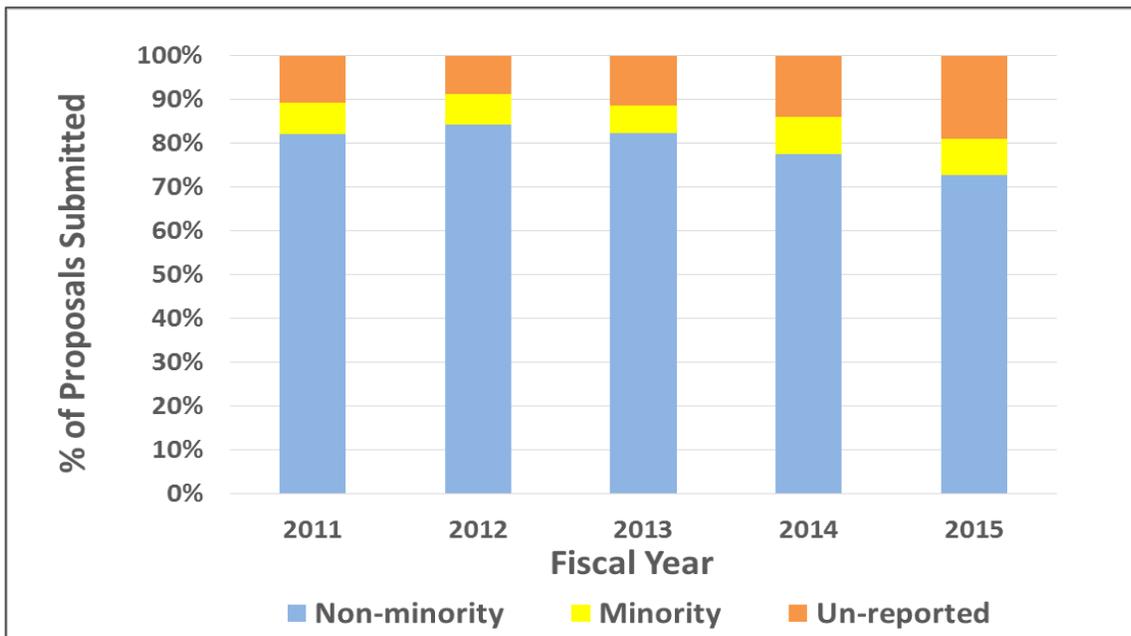


Figure 8: Distribution of proposals received by OPP/PLR in a given year by self-reported PI minority status, FY 2011-15. Minority status includes American Indian or Alaska Native; Black or African American; Hispanic or Latino; and Native Hawaiian or Other Pacific Islander.

Figures 9 and 10 report information regarding OPP/PLR proposals from and awards to institutions eligible for support through the Experimental Program to Stimulate Competitive Research (EPSCoR) Program. During the period of FY 2011 to FY 2015, EPSCoR awards decreased from 33.3% to 30.8%. This decrease corresponds to OPP/PLR’s annual proposal success rate decrease from 44% to 22%, during the period. Given that OPP/PLR makes a high number of awards to institutions in Alaska (an EPSCoR state), OPP/PLR sustains a relatively high proportion of awards with EPSCoR status.

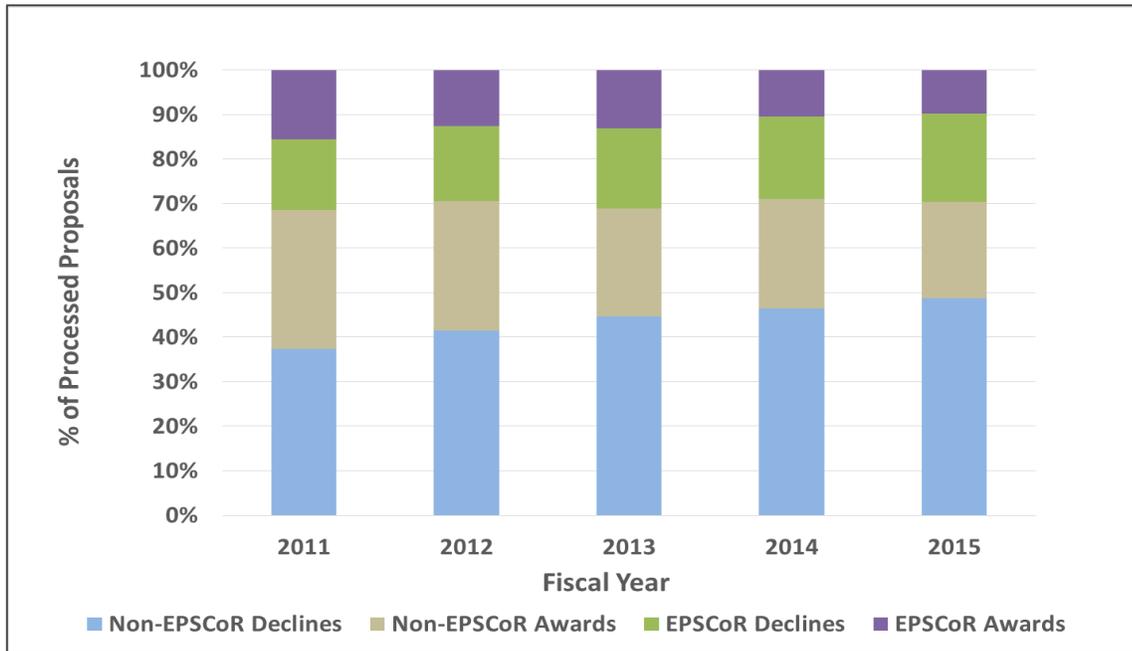


Figure 9: OPP/PLR proposals and awards processed in a given year, as distinguished by EPSCoR status. A list of EPSCoR states can be found at <http://www.nsf.gov/od/oia/programs/epscor/statewebsites.jsp>. For Figures 9 and 10, EPSCoR designation is based on the original time of proposal submission.

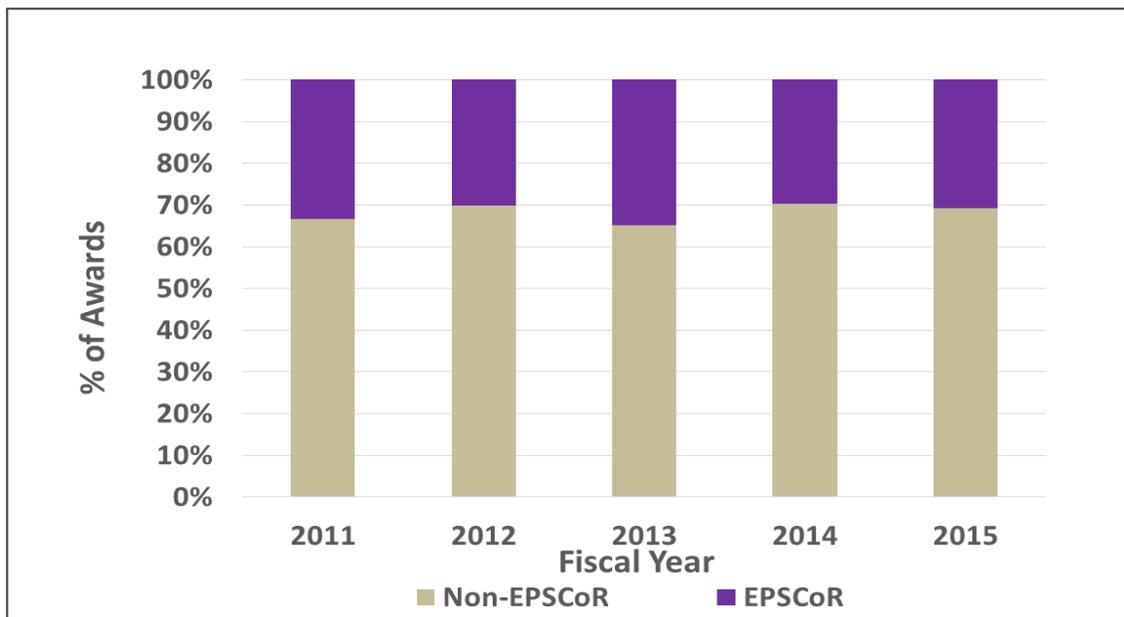


Figure 10: The percentage of OPP/PLR awards in a given fiscal year, as distinguished by EPSCoR status.

6. Staffing for OPP/PLR

Table 2 shows the number of OPP/PLR staff in a given category—program staff, administrative support staff, management, and intermittent experts (consultants)—in each year for the period FY 2011-15. The data correspond to a snapshot taken on September 30 of each year.

PLR Staffing	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Program Staff	28	26	33	34	34
Administrative Support Staff	12	12	9	13	10
Management*	7	8	8	9	9
Intermittent Experts (Consultants)	1	0	1	1	0

Table 2: Staffing levels for OPP/PLR by category and year, FY 2011-15. AAAS Science & Technology Policy Fellows, Albert Einstein Distinguished Educator Fellows, and contractors are not shown.

* “Management” includes those with the grades of Senior Executive Service, Administratively Determined Level (AD)-5, and AD-4 supervisory.

7. Summary

The proposal, award, and budget data presented in this document aim to inform comments responsive to the DCL.

As noted in the DCL, NSF is particularly interested in community input on the following questions:

1. Are there particular successes or failures that, in your opinion, arise directly from the relocation of the Office of Polar Programs into GEO?
2. Given the data and trends available above, your direct interaction with PLR, and NSF’s budgets in general, please comment on the extent to which PLR’s current role within NSF supports and anticipates the needed science and operations investments in polar regions. Has NSF PLR served the needs of the science and engineering research community as well as possible in light of current budget realities?
3. What, if any, changes might be made to enable NSF PLR to most effectively perform all of its important functions?

Comments from the interested community should be submitted by **July 21, 2016**. These comments will be used internally within NSF. Succinct responses are most useful to the review group, but there are no formal restrictions on the form or length of comments. Please send comments to:

NSF Polar Review Input
plr-review@nsf.gov