OFFICE OF INTERNATIONAL SCIENCE AND ENGINEERING (OISE)

$52,050,000, +$2,950,000 / 6.0%

OISE Funding
(Dollars in Millions)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Request	Change Over FY 2016 Estimate Amount	Change Over FY 2016 Estimate Percent
OISE	**$48.46**	**$49.10**	**$52.05**	**$2.95**	**6.0%**

Totals may not add due to rounding.

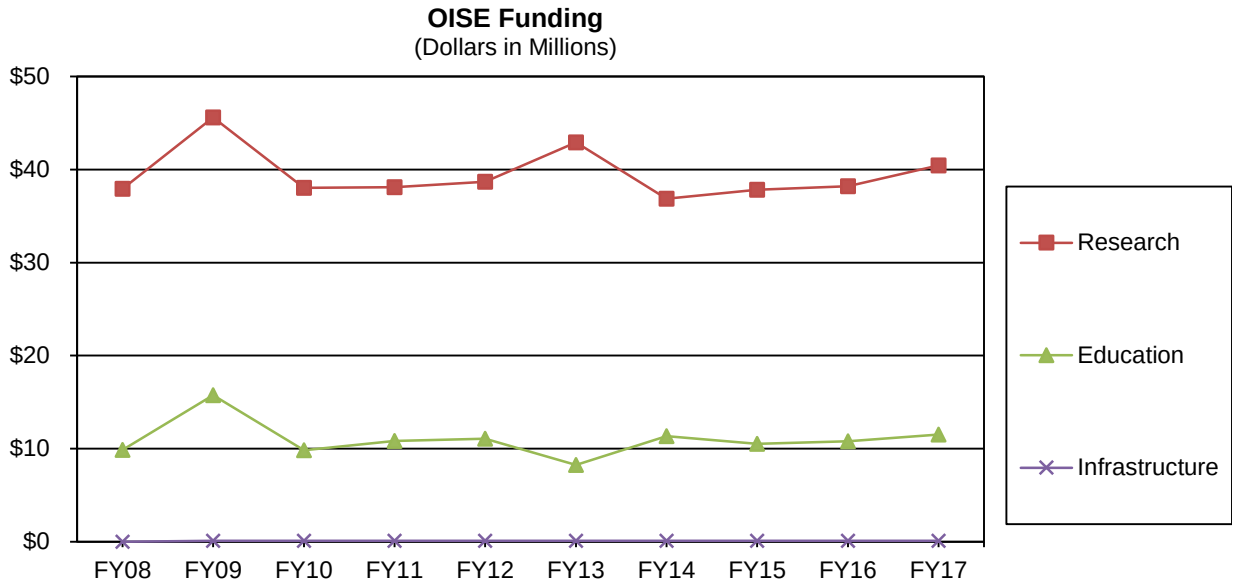
The FY 2017 Budget Request for OISE is $52.05 million, of which $49.10 million is discretionary funding and $2.95 million is new mandatory funding. The major focus of OISE's mandatory funding is to support core programs, e.g., Partnerships in International Research and Education (PIRE), International Research Experiences for Students (IRES), and/or increase co-funding with directorates through Global Venture Fund (GVF). Within core program activities, OISE mandatory funding will emphasize increasing the number of early career investigators and/or advance data- and computational-intensive areas.

About OISE

OISE facilitates international science and engineering activities across NSF. OISE does this by promoting an integrated, Foundation-wide international strategy that is innovative, catalytic, and responsive to a broad range of NSF and national interests. This strategy focuses on leveraging NSF and international resources to drive transformative science and engineering research. In FY 2017, OISE will focus on enhancing its analysis, reporting, and evaluation capabilities to ensure that NSF pursues international efforts in a strategic manner.

NSF, with support from OISE, engages internationally by investing in people, driving research priorities, partnering on facilities and infrastructure, and creating leadership opportunities in international fora. OISE's FY 2017 Budget Request supports this strategy by 1) focusing on targeted programs, such as PIRE and IRES; 2) by providing expert analysis, and 3) by maintaining a network of international counterpart agencies and other organizations that can be accessed to promote common interests.

OISE also manages NSF's overseas offices in Beijing, Brussels, and Tokyo. These offices report on and analyze in-country and regional science and technology developments and policies, promote greater collaborations between U.S. and foreign researchers, liaise with foreign counterpart agencies and research institutions, and facilitate coordination and implementation of NSF research and education programs.



FY 2009 reflects both the FY 2009 omnibus appropriation and funding provided through the American Recovery and Reinvestment Act of 2009 (P.L. 111-5).

FY 2017 Summary

OISE Funding
(Dollars in Millions)

	FY 2015 Actual	FY 2016 Estimate	FY 2017 Request	Change Over FY 2016 Estimate Amount	Change Over FY 2016 Estimate Percent
Total, OISE	**$48.46**	**$49.10**	**$52.05**	**$2.95**	**6.0%**
Research	37.84	38.20	40.45	2.25	5.9%
Education	10.52	10.80	11.50	0.70	6.5%
Infrastructure	0.10	0.10	0.10	-	-

Totals may not add due to rounding.

The FY 2017 Budget Request for OISE is $52.05 million, of which $49.10 million is discretionary funding and $2.95 million is new mandatory funding. All mandatory funding will support activities included within the Research line in the above table.

Research

- In FY 2017, OISE will invest $40.45 million, $2.25 million above the FY 2016 Estimate, in research programs to promote NSF's international engagement strategy. These funds will be used to support international partnerships and leverage research investments made in other parts of the Foundation to advance U.S. fundamental science and engineering.
- Research programs funded in FY 2017, including the Global Venture Fund (GVF), support a broad range of collaborative activities (workshops, planning grants, and international research) with NSF's research and education directorates.
- OISE will support a new set of awards and continue support for existing awards in the PIRE program, which leverages NSF's resources with those of numerous foreign science and technology funding agencies. In FY 2017, PIRE will be funded at $21.95 million, or $4.54 million above the FY 2016 Estimate.

- The FY 2017 Request will support $1.76 million for clean energy research, of which $1.28 million will fund the Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS) program. These investments will enable U.S. scientists and engineers to partner with their international colleagues in these high priority areas.

Education

- OISE supports international research and education activities for U.S. undergraduate students, graduate students, and post-doctoral fellows through the International Research experiences for Students (IRES), East Asia and Pacific Summer Institutes for U.S. Graduate Students (EAPSI) and International Research Fellowship Programs (IRFP) activities, respectively. The total OISE FY 2017 funding for these programs is $11.50 million.
- In FY 2017, the EAPSI Request of $2.50 million, or $700,000 above the FY 2016 Estimate, will support a contract to better use staff resources for project implementation support.

Infrastructure

- In FY 2017, OISE maintains a $100,000 investment in the National Nanotechnology Coordinated Infrastructure (NNCI) program. The NNCI advances U.S. efforts to advance nanoscience research and education. For detailed information about NNCI, see the Facilities chapter.

Major Investments

OISE Major Investments
(Dollars in Millions)

Area of Investment	FY 2015 Actual	FY 2016 Estimate	FY 2017 Request	Change Over FY 2016 Estimate Amount	Change Over FY 2016 Estimate Percent
Clean Energy Technology	$16.45	$5.51	$1.76	-$3.75	-68.1%
INFEWS	-	1.28	1.28	-	-
SEES	16.45	4.23	0.48	-3.75	-88.7%
Understanding the Brain	-	0.59	0.59	-	-

Major investments may have funding overlap and thus should not be summed.

- Clean Energy Technology (-$3.75 million, to a total of $1.76 million): OISE will fund international collaborations for clean energy technology research. OISE's clean energy support consists of funding to the INFEWS and Science, Engineering, and Education for Sustainability (SEES) priority areas. As a result of planned sunsetting of the SEES program, Clean Energy and SEES decrease by $3.75 million. OISE's SEES funding will cover residual outyear commitments associated with SEES awards made in FY 2012.

- INFEWS ($1.28 million, equal to the FY 2016 Estimate): OISE will invest in international INFEWS collaborations through co-funding the U.S. institutions involved in the research selected by NSF directorates.

- Understanding the Brain (UtB) ($590,000, equal to the FY 2016 Estimate): OISE will co-fund UtB proposals selected by NSF research directorates when they contain an international collaboration. OISE co-funding will go to the U.S. institution involved in the collaboration.

Summary and Funding Profile

OISE supports investment in research, education, and research infrastructure. A shift in emphasis from small-scale to larger-scale catalytic activities began in FY 2015, resulting in an increase in the number of proposals and awards and an increase in the median award size. These trends will continue in FY 2017 as OISE focuses on funding projects that are larger-scale with greater impacts. OISE will also continue co-funding meritorious science and engineering projects submitted to other NSF directorates. FY 2017 increases in the average award size and duration reflect primarily the start of a new cohort of 5-year PIRE awards.

OISE Funding Profile

	FY 2015 Actual Estimate	FY 2016 Estimate	FY 2017 Estimate
Statistics for Competitive Awards:			
Number of Proposals	604	600	620
Number of New Awards	297	300	310
Funding Rate	49%	50%	50%
Statistics for Research Grants:			
Number of Research Grant Proposals	387	390	420
Number of Research Grants	80	80	90
Funding Rate	21%	21%	21%
Median Annualized Award Size	$83,000	$84,000	$89,000
Average Annualized Award Size	$247,526	$110,000	$280,600
Average Award Duration, in years	2.7	2.2	2.8

Program Monitoring and Evaluation

External Program Evaluations and Studies

- In FY 2016, OISE will initiate an evaluation of IRES and EAPSI. Results will be incorporated into an analysis of the OISE program portfolio to ensure OISE is supporting the most effective balance of programs. Any portfolio rebalancing will target programs in the most strategic areas to leverage resources to benefit NSF and the United States and advance global science and engineering research. Final results from the EAPSI and IRES evaluations are expected in FY 2017. The portfolio analysis will be complete in FY 2017.

- An evaluation of the PIRE program was performed by an independent contractor to investigate how the international emphasis of PIRE provided an impact different from other NSF grants in programs without an international emphasis. The report was delivered to OISE in FY 2016.[1]
  - The evaluation findings include that with respect to:
    - Research outcomes: PIRE journal articles have an above average citation impact and a significantly higher mean percentage of foreign contributors per paper than non-PIRE articles.
    - Participant-level research outcomes: PIRE postdocs and graduate students produced more annual publications post-onset than non-PIRE postdocs and graduate students, and PIRE postdocs' publications had significantly higher citation impact per year than non-PIRE postdocs' publications. Significantly higher percentages of PIRE participants than non-PIRE participants traveled abroad for their project, and high percentages of PIRE participants

[1] http://abtassociates.com/AbtAssociates/files/54/541407a8-485e-4f5d-8697-bb17542544e8.pdf

collaborated with foreign personnel. Post PIRE, high percentages of PIRE PIs and graduate students continued to collaborate with foreign researchers after the project had ended. While it is noteworthy that PIRE positively affected the research productivity of both postdoctoral researchers and graduate students, it did not affect the productivity of PIs.

- Therefore, one of the evaluation's recommendations is that NSF consider requiring PIRE projects to fund a project administrator to help manage the projects and thus allow the PIs to focus on the research agenda of the award. In response, OISE is developing a revised solicitation for the FY 2016 PIRE announcement which will incorporate this recommendation.

Committees of Visitors (COV)

- In 2017, a COV will review proposals from all OISE programs.

The Performance chapter provides details regarding the periodic reviews of programs and portfolios of programs by external Committees of Visitors and directorate Advisory Committees. Please see this chapter for additional information.

Number of People Involved in OISE Activities

	FY 2015 Actual Estimate	FY 2016 Estimate	FY 2017 Estimate
Senior Researchers	487	490	520
Other Professionals	61	60	70
Postdoctoral Associates	184	190	200
Graduate Students	168	170	180
Undergraduate Students	123	130	130
Total Number of People	**1,023**	**1,040**	**1,100**