

**OFFICE OF INTERNATIONAL SCIENCE  
AND ENGINEERING (OISE)**

**\$58,030,000  
+\$10,200,000 / 21.3%**

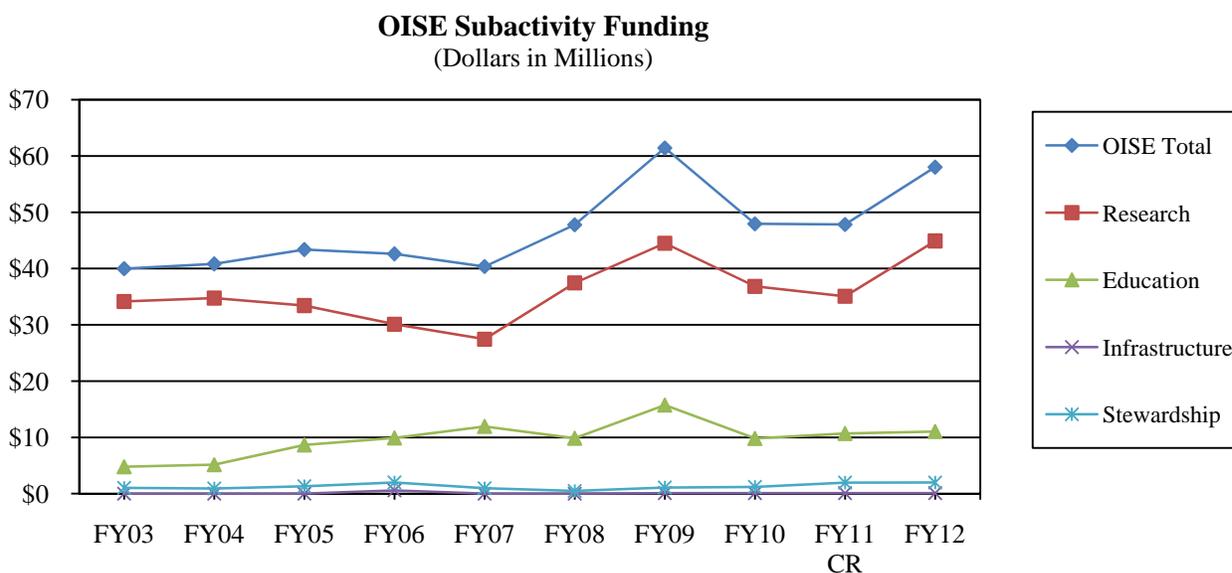
**OISE Funding**  
(Dollars in Millions)

|                    | FY 2010<br>Omnibus<br>Actual | FY 2010<br>ARRA<br>Actual | FY 2010<br>Enacted/<br>Annualized<br>FY 2011 CR | FY 2012<br>Request | Change Over<br>FY 2010 Enacted<br>Amount | Percent      |
|--------------------|------------------------------|---------------------------|---|--------------------|--|--------------|
| <b>Total, OISE</b> | <b>\$47.84</b>               | <b>\$0.10</b>             | <b>\$47.83</b>                                  | <b>\$58.03</b>     | <b>\$10.20</b>                           | <b>21.3%</b> |

The Office of International Science and Engineering (OISE) serves as the focal point, both inside and outside of NSF, for international science and engineering activities. OISE promotes the development of an integrated, Foundation-wide international strategy and manages international programs that are innovative, catalytic, and responsive to a broad range of NSF and national interests. OISE supports U.S. scientists and engineers engaged in international research and education activities in all NSF-supported disciplines involving any region of the world. As such, OISE enables high-impact international collaborations and partnerships that help achieve U.S. foreign policy objectives.

OISE programs and activities are designed to complement and enhance the Foundation's broad research and education portfolio and to overcome barriers to international collaboration. America's next generation of scientists and engineers must be able to work effectively in the global arena and marketplace. OISE supports programs that enable students and researchers to engage in international research and educational activities across such areas as cyberinfrastructure, complex biological systems, natural hazards prediction and mitigation, nanotechnology, water resources, climate, and energy sustainability. OISE carries out its functions by working closely with the other NSF directorates and offices as well as through its own programs. In addition, OISE manages NSF's offices in Beijing, Paris, and Tokyo that report on and analyze in-country and regional science and technology developments and policies, promote greater collaboration between U.S. and foreign researchers, liaise with foreign counterpart agencies and research institutes, and facilitate coordination and implementation of NSF research and education programs.

OISE coordinates much of NSF's engagement with international organizations across diverse disciplines and initiatives. OISE also coordinates NSF efforts to strengthen collaborations with developing countries, which are increasingly important partners in addressing critical global issues, but can present special challenges related to infrastructure and resources. NSF's efforts related to the Administration's call for increased U.S. engagement with Muslim-majority countries are also coordinated by OISE.



## Major Investments

### OISE Major Investments

(Dollars in Millions)

| Area of Investment   | FY 2010 | FY 2010 | FY 2010                              | FY 2012 | Change Over |                 |
|--|---------|---------|--------------------------------------|---------|-------------|-----------------|
|  | Omnibus | ARRA    | Enacted/<br>Annualized<br>FY 2011 CR |         | FY 2012     | FY 2010 Enacted |
|  | Actual  | Actual  |                                      | Request | Amount      |                 |
| Partnerships for International Research and Education (PIRE)     | \$18.20 | -       | \$18.00                              | \$25.20 | \$7.20      | 40.0%           |
| Sustainability Research Networks                                 | -       | -       | -                                    | 2.00    | 2.00        | N/A             |
| International programs for students and early career researchers | 9.57    | 0.02    | 10.70                                | 11.05   | 0.35        | 3.3%            |
| Catalyzing New International Collaborations (CNIC)               | 2.32    | -       | 2.00                                 | 2.50    | 0.50        | 25.0%           |
| U.S. Participation in International Organizations                | 8.15    | -       | 8.47                                 | 8.50    | 0.03        | 0.4%            |

- Partnerships for International Research and Education (PIRE) is a major NSF funding priority in FY 2012. The PIRE program makes multi-million dollar awards to U.S. institutions that build strong international research and education partnerships. Each PIRE award supports U.S. faculty to lead projects designed to achieve research excellence through the added-value gained by international collaboration including, access to essential expertise, facilities, and/or phenomena outside the U.S. Each PIRE award prepares a globally engaged U.S. workforce by funding U.S. undergraduate and graduate students and/or junior researchers to participate in international research experiences, and fosters the internationalization of U.S. institutions in science and engineering fields.

In FY 2012, OISE plans to invest \$15.0 million for the first-year funding of a new 2012-2016 cohort, \$9.74 million for the existing 2010-2014 PIRE cohort, and \$460,000 to initiate a PIRE program evaluation. The FY 2012 PIRE competition will focus on the NSF-wide Science, Engineering, and Education for Sustainability (SEES) portfolio and apply PIRE's successful model of international

collaboration to sustainability research challenges in the global context. This will enable U.S. researchers, students, and institutions to engage effectively with foreign partners in leading-edge discovery and innovation in sustainability disciplines. The increase in funding for the PIRE program is a response to a growing demand for international engagement from the U.S. STEM community and NSF's recognition of the importance of addressing international challenges of sustainability research. In particular, the increase will allow NSF to fund a broader range of PIRE awards for international partnerships related to SEES research areas, including clean energy, an area identified as a critical national need.

- OISE will contribute \$2.0 million to support Sustainability Research Networks (SRN) that will engage and build collaborations among U.S. and foreign researchers and educators within the SEES portfolio.
- OISE manages four programs that support students and early career researchers in international activities:
  - International Research Experiences for Students (IRES) supports groups of U.S. undergraduate or graduate students conducting research in collaboration with foreign investigators at an international site. In FY 2012, IRES funding will be \$3.15 million, which is unchanged from the FY 2010 Enacted level.
  - East Asia and Pacific Summer Institutes (EAPSI) introduces U.S. graduate students to science and engineering research in the East Asia and Pacific region, and initiates scientific relationships that will enable future collaboration with foreign counterparts. Seven locations currently partner with NSF in the program: Australia, China, Japan, Korea, New Zealand, Singapore, and Taiwan. In FY 2012, EAPSI funding will be \$2.40 million, which is unchanged from the FY 2010 Enacted level.
  - International Research Fellowship Program (IRFP) supports U.S. postdoctoral-level scientists and engineers for international collaborative research, with the objective of furthering their research capacity and global perspective, and forging long-term relationships with researchers abroad. In FY 2012, IRFP funding will be \$4.50 million, which is unchanged from the FY 2010 Enacted level.
  - Advanced Studies Institutes (ASI) (formerly Pan American Advanced Studies Institutes) will build on years of successful implementation in the Americas, and recent pilot institutes in Africa and Asia, to provide opportunities for U.S. students and early-career researchers to connect with foreign counterparts around the globe. ASIs are short courses of up to four weeks in duration, aimed at disseminating advanced scientific knowledge and stimulating training and cooperation. The courses involve distinguished U.S. and foreign lecturers and active researchers in a scientific field. OISE manages the ASI program with most of the funding contributed from other NSF directorates and the Department of Energy. The FY 2012, ASI budget for OISE will be \$1.0 million.
- Catalyzing New International Collaborations (CNIC) is an OISE effort that offers support for the initial phases of U.S. participation in mutually beneficial international collaborations in all regions of the world. Many types of activities intended to catalyze new international collaborations may be proposed and supported, including: planning visits, small workshops, initial data-gathering activities, and the development of research coordination networks. If the initial OISE-supported collaboration phase achieves positive results, the next phase is expected to involve submission of a follow-on

proposal to the appropriate NSF program for continued and/or expanded funding of the collaborative research. In FY 2012, OISE plans to allocate \$2.50 million to CNIC activities.

- In FY 2012, OISE will continue to provide approximately \$8.5 million per year in support of U.S. participation in international organizations such as the Civilian Research and Development Foundation, the Global Science Forum, and the Human Frontier Science Program.

**OISE Funding**  
(Dollars in Millions)

|                       | FY 2010<br>Omnibus<br>Actual | FY 2010<br>ARRA<br>Actual | FY 2010<br>Enacted/<br>Annualized<br>FY 2011 CR | FY 2012<br>Request | Change Over<br>FY 2010 Enacted |              |
|-----------------------|------------------------------|---------------------------|---|--------------------|--------------------------------|--------------|
|                       |                              |                           |   |                    | Amount                         | Percent      |
| <b>OISE Funding</b>   | <b>\$47.84</b>               | <b>\$0.10</b>             | <b>\$47.83</b>                                  | <b>\$58.03</b>     | <b>\$10.20</b>                 | <b>21.3%</b> |
| <b>Research</b>       | 38.03                        | 0.08                      | 37.03   | 46.88              | 9.85                           | 26.6%        |
| <b>Education</b>      | 9.71                         | 0.02                      | 10.70   | 11.05              | 0.35                           | 3.3%         |
| <b>Infrastructure</b> | 0.10                         | -                         | 0.10  | 0.10               | -                              | -            |

**FY 2012 Summary**

**Research**

- The FY 2012 OISE research request of \$46.88 million includes \$15.0 million for new SEES-related PIRE awards, and \$2.0 million for SRNs.
- OISE works closely with the other NSF directorates and offices to leverage international opportunities for U.S. researchers and educators. The OISE FY 2012 request will in part co-fund international disciplinary and interdisciplinary activities with other NSF organizational units. OISE's existing funding mechanisms, together with the potential for involving new funding partners, will enable more and stronger research and education collaborations with Muslim-majority and developing countries. A NSF-U.S. Agency for International Development (USAID) Memorandum of Understanding provides a framework for OISE to support U.S. participants and USAID to support developing country partners. OISE will apply approximately \$10.0 million of the FY 2012 request towards co-funding with other NSF directorates, and developing country and Muslim-majority country activities.
- Approximately \$2.50 million will be allocated to CNIC activities in FY 2012, with the expectation that successful interactions will result in competitive proposals to relevant NSF directorates.

**Education**

- OISE supports international research and education activities for U.S. undergraduate and graduate students and post-doctoral fellows via the IRES, EAPSI, IRFP, and ASI programs. The total FY 2012 budget for these programs will be \$11.05 million.

**Infrastructure**

- OISE will continue to provide \$100,000 in support of the National Nanotechnology Infrastructure Network (NNIN) to leverage connections and collaborations with foreign institutions. For information about NNIN, please refer to the Facilities chapter.

**Summary and Funding Profile**

OISE supports investment in core research and education as well as research infrastructure.

In FY 2012 the number of research grant proposals is expected to increase by over 200 compared to the FY 2010 Enacted primarily attributable to the PIRE competition. OISE expects to award approximately 95 research grants in FY 2012. Average annualized award size and duration are estimated to increase in FY 2012 due to the 2012 PIRE competition.

**OISE Funding Profile**

|   | FY 2010<br>Actual<br>Estimate | FY 2010<br>Enacted/<br>Annualized<br>FY 2011 CR | FY 2012<br>Estimate |
|---|-------------------------------|---|---------------------|
| <b>Statistics for Competitive Awards:</b> |                               |   |                     |
| Number of Proposals                       | 1,043                         | 820   | 1,050               |
| Number of New Awards                      | 396                           | 365   | 410                 |
| Regular Appropriation                     | 396                           | 365   | 410                 |
| ARRA                                      | -                             | -   | -                   |
| Funding Rate                              | 38%                           | 45%   | 39%                 |
| <b>Statistics for Research Grants:</b>    |                               |   |                     |
| Number of Research Grant Proposals        | 600                           | 375   | 600                 |
| Number of Research Grants                 | 85                            | 70  | 95                  |
| Regular Appropriation                     | 85                            | 70  | 95                  |
| ARRA                                      | -                             | -   | -                   |
| Funding Rate                              | 14%                           | 19%   | 16%                 |
| Median Annualized Award Size              | \$49,880                      | \$50,000  | \$70,000            |
| Average Annualized Award Size             | \$197,985                     | \$180,000                                       | \$270,000           |
| Average Award Duration, in years          | 2.4                           | 2.0   | 2.4                 |

## OISE Funding for Centers Programs and Facilities

### OISE Funding for Facilities

(Dollars in Millions)

|                                      | FY 2010     | FY 2010                | FY 2012     | Change Over |         |
|--------------------------------------|-------------|------------------------|-------------|-------------|---------|
|                                      | Omnibus     | Enacted/<br>Annualized |             | FY 2010     | Enacted |
|                                      | Actual      | FY 2011 CR             | Request     | Amount      | Percent |
| <b>Facilities</b>                    | \$0.10      | \$0.10                 | \$0.10      | -           | -       |
| <i>National Nanotechnology</i>       | <i>0.10</i> | <i>0.10</i>            | <i>0.10</i> | -           | -       |
| <i>Infrastructure Network (NNIN)</i> |             |                        |             |             |         |

No FY 2010 obligations for facilities were made with funds provided by the ARRA.

### Facilities

- In FY 2012, OISE will continue to provide \$100,000 in support of the NNIN to leverage connections and collaborations with foreign institutions.

### Program Evaluation and Performance Improvement

The Performance Information chapter provides details regarding the periodic reviews of NSF programs and portfolios of programs by external Committees of Visitors (COVs) and directorate/office Advisory Committees. Please see that chapter for additional information. All OISE-managed programs and activities will be reviewed by a COV in FY 2011.

External evaluations of IRFP and the EAPSI program will be completed in FY 2012. OISE has a contract with Abt Associates to conduct the evaluations. These evaluations will focus on four tasks: (1) a study of the IRFP and EAPSI fellows' experiences in applying for and participating in the programs; (2) a comparative data analysis of professional outcomes (educational and occupational) for IRFP and EAPSI awardees and other applicants; (3) an analysis of the impact IRFP and EAPSI have on U.S. academic institutions and on the foreign institutions that host IRFP and EAPSI fellows; and (4) the bringing together of an advisory group to ensure the quality of the evaluation process. Funding for the evaluation was provided in FY 2010 and FY 2011. The FY 2012 PIRE competition will be the fourth PIRE competition and an evaluation and assessment is timely and appropriate. A proposed amount of \$460,000 will initiate, but not fully fund the evaluation, in FY 2012.

### Number of People Involved in OISE Activities

|                               | FY 2010      | FY 2010                | FY 2012      |
|-------------------------------|--------------|------------------------|--------------|
|                               | Actual       | Enacted/<br>Annualized |              |
|                               | Estimate     | FY 2011 CR<br>Estimate | Estimate     |
| Senior Researchers            | 1,077        | 1,250                  | 1,340        |
| Other Professionals           | 65           | 50                     | 50           |
| Postdoctorates                | 472          | 600                    | 640          |
| Graduate Students             | 1,809        | 2,260                  | 2,410        |
| Undergraduate Students        | 1,071        | 1,350                  | 1,440        |
| <b>Total Number of People</b> | <b>4,494</b> | <b>5,510</b>           | <b>5,880</b> |