

Supporting Statement for Paperwork Reduction Submission

Grantee Reporting Requirements for Science and Technology Centers (STC): Integrative Partnerships (3145-0194)

A. Justification

A.1. Circumstances Requiring the Collection of Data

The Science and Technology Centers (STC): Integrative Partnerships program provides multiyear (up to ten years) support to STCs as continuing awards that are among the largest (up to \$5 million a year) awarded by the National Science Foundation (NSF). Since the duration and size of these awards are extensive, it is necessary for the NSF to ensure that its substantial investment is spent appropriately, that each of the centers meets the goals stated in its own strategic plan, and that each center's activities satisfy the goals and objectives of the STC program. The STC program currently funds a total of 13 Centers— three beginning in 2013 and four beginning in 2016 and six beginning in 2021. To enable effective oversight of its investment, the NSF requires that each currently funded Center must submit an annual progress report that describes all activities of the Center; each existing Center began submitting an annual report at the end of its first year.

The annual reports contain information that contributes to NSF's efforts to answer broad evaluative research questions: 1) What is the overall value-added of the NSF STC program? 2) What is the quality and impact of the research conducted in the Centers? 3) What is the quality and impact of education supported by the Centers? 4) What is the quality and impact of the knowledge transfer of the Centers? 5) Do the Centers effectively encourage the participation of US citizens, underrepresented minorities, women, and persons with

disabilities in their activities? 6) Do the Centers create and sustain organizational connections and linkages within and among academia, government, and industry?

- *Changes and Lessons Learned.* Changes to the STC Reporting Template include removal of the designation for race, ethnicity and gender from Table 5 (Section VIII), and removing cost-sharing information from the budget section as no Center has this requirement now. Analysis of the reports continues to be done by NSF staff (instead of contractors) by newly developed data mining tools (available through research.gov and/or developed at NSF). This change will result in significant cost savings.

The annual progress reports are used to:

- **Evaluate annual progress of a Center.** The primary purpose of the annual reports is to provide the information necessary for the NSF to monitor and evaluate the progress and accomplishments, as well as, to identify problems of individual STCs. The annual reports provide background information for the annual site visit reviews/evaluations of each of the Centers that are conducted by teams of external reviewers and the NSF staff. The annual site visit review/evaluation provides feedback to the Center and the NSF about its strengths and weaknesses. In cases of significant weaknesses, a Center is provided advice and a time schedule for addressing any weaknesses.
- **Develop internal performance indicators and controls for a center.** The annual reports provide information that is used by the leadership of each STC to create and monitor metrics or performance indicators in the management of their centers.
- **Make funding decisions.** The STCs are funded under cooperative agreements, and funds are allocated to each Center on an annual basis. The NSF staff uses each

Center's annual report together with the written input from the external reviewers responsible for the annual site visit review/evaluation of a Center to make decisions on the continuation and level of funding for the Center.

- **Evaluate overall effectiveness of the STC program.** The aggregate reports from all STCs are used by NSF in evaluating the effectiveness of the STC Program on an ongoing basis.

A.2. Purpose and Use of Data

The reports will be used in the:

- **External Reviewer Annual Site Visits.** External site visit teams (one for each center) are convened by the NSF each year to evaluate the individual STCs. The external site visit team for a Center is selected each year by NSF program staff. An overlap between site visitors in consecutive years is attempted. Typically, a site visit team will have 5-8 members that have scientific, educational and management expertise that corresponds to the specific Center's activities. The teams use the information in the annual reports to assist in the on-site evaluation of each STC's progress relative to its stated goals and objectives and to its performance during the previous year. Upon reading the annual progress report, the site visitors spend time at the Center's site in discussion with the Center's researchers, educators, staff and students the Center's progress. The external site visit team summarizes in writing strengths and weaknesses of the Center's progress and submits its report to the Center and to the NSF.
- **NSF Staff Evaluation of Center's Progress and Funding Decision for Following Year.** The NSF staff overseeing each STC consists of a technical coordinator who represents the directorate and division that are most closely related to the scientific

mission of the center and representative(s) of the Office of Integrative Activities that oversees the STC program. In addition, representatives of the Education and Human Resources Directorate assist with program oversight. The NSF staff jointly monitor center activities, in part through data recorded in the annual reports, and make decisions about external reviewers and center funding.

- **Development of Aggregate Reports for Overall STC Program Management.** The effectiveness of the STC program is reviewed periodically by the NSF Senior Management or their representatives. For the purpose of generating the aggregated information, NSF staff will utilize data mining tools to review the reports on an annual basis and extracts relevant information from them, producing aggregate reports that provide for easy program monitoring.

A.3. Use of Automation

All reports are submitted electronically via research.gov, and are analyzed using continuously updated data mining tools.

A.4. Efforts to Identify Duplication

No other federal agencies or organization within NSF collects data pertaining to the Science and Technology Centers.

A.5. Small Business Consideration

N/A

A. 6. Consequences of Less Frequent Collection

The reports generated by the annual data collection comprise one of the primary mechanisms used by the NSF for approving funding for the STCs on an annual basis. Less frequent data collection would preclude NSF's annual monitoring and documentation of the progress of each STC and, thus, would not allow for informed decisions about funding and timely correction of any weaknesses identified in a Center's activities. The consequence of less frequent collection would manifest itself in lack of an effective way to continuously monitor the large investments of resources and time that NSF has committed to the Science and Technology Centers Program. Furthermore, the annual data collection is congruent with the annual cycle of academic institutions in which these Centers reside increasing the likelihood that the improvements to Center activities will be made. Less frequent data collection would provide a greater burden on the individual Centers' management that would have two reporting responsibilities (1) to collect and aggregate data annually for internal management and (2) to collect and report data for efforts associated with program level monitoring and documentation.

A.7. Special Circumstances for Collection

N/A

A. 8. Federal Register Notice and Outside Consultation

The agency's notice, as required by 5 CFR 1320.8(d), was published in the *Federal Register* on December 22, 2021, at 86 FR 72641, and no comments were received.

In addition, the reporting requirements and estimates on the hourly burden were discussed with the management of the Science and Technology Centers. Center Directors and their management staff, the primary respondents to this data collection, were consulted for feedback on the availability of data, frequency of data collection, the clarity of instructions, and the data elements. Their feedback confirmed that the frequency of data collection was appropriate and that they did not provide these data in other data collections.

A. 9. Gifts or Remuneration

N/A

A.10. Assurance of Confidentiality

Because data are collected at the Center level, individual respondents are not identified. Centers make their annual reports publicly available.

A. 11. Questions of a Sensitive Nature

No questions of a sensitive nature are used. Only questions pertaining to the progress of the Center, as stated by the program announcement, are used.

A. 12. Estimate of Burden

This request pertains to the 13 Centers that have received awards as of fiscal year 2021; three of these centers that started in 2013 will submit their final annual report in FY 2023. These centers will be replaced by new centers that will be selected in FY 2023. The competition for these centers has started in February 2022 and it is anticipated that this competition will result in at least three new awards.

Each center (old and new) will be required to submit an annual report; thus, the total number of reports will be at least 13 per year. Based on the input from the management of the STCs, we estimate the burden of preparing annual reports, in terms of man-hours per Center, as follows:

1. Center's Director –10 hours
2. Deputy Director/Center's Administrator 40 – 50 hours
3. Education Director – 20 – 30 hours
4. Students graduate/undergraduate (material collection) – 20 – 30 hours

Total hours per center are estimated to be 90 - 120 hours, on average approximately 100 hours; the maximum burden is expected in the first year of reporting. In the years that follow, the burden often is reduced given that a Center's internal practices and procedures are established. In most cases, the burden in subsequent years is reduced to 75% of the hourly burden in the first year, although we provide estimates allowing for the average maximum anticipated effort in the first year.

Total number of hours for 13 centers: **approximately 1300 hours.**

ANNUALIZED COST TO RESPONDENTS

Estimated cost per Center, based on the most recent projections submitted in Center budgets, is as follows:

Expense category	Unit cost	Units	Total cost
1. Center Director	\$102/hour	10 hours	\$1020
2. Deputy Director/Center's Administrator	\$65/hour	40 –50 hours	\$2,600 - \$3,250 (average \$2,925)
3. Education Director	\$32/hour	20 – 30 hours	\$640 - \$960 (average \$800)
4. Students graduate/undergraduate	\$16/hour	20 – 30 hours	\$320 - \$480 (average \$400)
5. Fringe benefits (30%) on items 1-3 (based on averages)			\$1,566
6. Overhead costs (55%) on items 1-5			\$3,691
Total cost per Center			\$10,402
Total cost for 12 existing centers			\$135,226

The range of cost is calculated assuming the lowest and the highest number of hours.

A. 13. Annual cost burden [not included in hour cost]

There are no additional costs beyond the estimated hours of burden shown above.

A. 14. Annualized Cost to the Federal Government

The reports submitted by the STCs will be analyzed by the NSF staff using the latest data mining tools for the purpose of providing Center profile documents, various types of data analysis, and tables for the purpose of overall program management. The following estimates of the anticipated effort are based on pilot trials of analyzing report data.

The estimate of their activities and role are as follows:

Expense category	Unit cost	Units	Total cost
Program Assistant	\$22/hour	24 hours/Center	\$528
Science Assistant	\$41/hour	16 hours/Center	\$656
Summer interns	\$0/hour	24 hours/Center	\$ 0
Total cost per Center			\$1,184
<i>Total cost for 13 centers</i>			<i>\$15,392</i>

A. 15. Changes in Burden

There are no changes in burden; however, Table 5 (Section VIII) –designation of race, ethnicity and gender was removed, and in the budget section, cost-sharing reporting was removed as none of the centers now have it. As these changes are nominal, the program does not see any reduction in the overall burden.

A. 16 Publication of Collection

N/A

A. 17 Approval to Not Display OMB Expiration Date

N/A

A. 18 Exception to Item 19 of OMB Form 83-I Certification Statement

N/A

B. STATISTICAL METHODS

Not applicable

Attachments

Attachment I. Detailed description of information required in annual reports