

Supporting Statement for Paperwork Reduction Submission

Grantee Reporting Requirements for Materials Research Science and Engineering Centers (MRSECs) (3145-0230)

A. Justification

A.1. Circumstances Requiring the Collection of Data

The NSF Materials Research Science and Engineering Center (MRSEC) program provides significant support (\$1.6 – \$4 million / year) for research, education, and infrastructure through cooperative agreements with a renewable term of 6 years. Because of the duration and size of these awards, 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 strategic plan, and that each center's activities satisfy the goals and objectives of the MRSEC program. The MRSEC program currently funds a total of 20 Centers. For effective oversight of these substantial investments, the NSF requires that each currently funded Center submit an annual progress report that describes all activities of the Center; these reports begin in the first year of operation. Each Center is expected to submit a final report at the end of the award. Data contained in these reports are also submitted to a website managed by a contractor for NSF. Electronic submission facilitates program-wide data analysis.

The annual and final reports contain information to help answer broad evaluation questions:

1) What is the overall value-added of the NSF MRSEC 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?

The annual progress reports will be used to:

- **Evaluate annual progress of a Center.** The primary purpose of the annual reports is to provide the information needed for the NSF to monitor and evaluate the progress and accomplishments of individual MRSECS, as well as to identify any problems. The annual reports provide background information for site visit reviews/evaluations of each of the Centers that are conducted by teams of external reviewers and the NSF staff. The 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 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 MRSEC to create and monitor metrics or performance indicators in the management of their centers.
- **Make funding decisions.** The MRSECS 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 site visit review/evaluation of a Center to make decisions on the continuation and funding level for the Center.
- **Evaluate overall effectiveness of the MRSEC program.** NSF uses the aggregate reports from all MRSECS in evaluating the effectiveness of the MRSEC program on an ongoing basis.

A.2. Purpose and Use of Data

The reports will be used in the:

- **External Reviewer Site Visits.** NSF convenes external site visit teams (one for each center) on a regular basis to evaluate the individual MRSECs. NSF program staff selects the external site visit team for a Center. Typically a site visit team will have 1-3 members that have scientific, educational and management expertise appropriate to the specific Center's activities; site visits also include 1-2 MRSEC Program Directors. Site Visits occur in the 2nd and the 4th year of the Center existence. The teams use the information in the annual reports to assist in the on-site evaluation of each MRSEC's progress relative to its stated goals and objectives and to its performance during the previous year. After reviewing the annual progress report, the site visitors spend time at the Center's site (typically 1-2 days) in discussion with the Center's researchers, educators, staff and students the Center's progress. The external site visit team provides a written summary of the 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 MRSEC consists of program officers that co-fund a given award. The NSF staff jointly monitor center activities, in part through data recorded in the annual reports, and makes decisions about external reviewers and center funding.

A.3. Use of Automation

All reports are submitted electronically via e-mail to the cognizant program officer.

A.4. Efforts to Identify Duplication

No other federal agencies or organization within NSF collects the same data submitted in annual and final MRSEC reports.

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 MRSECs on an annual basis. Less frequent data collection would preclude NSF's annual monitoring and documentation of the progress of each MRSEC and, thus, would not allow for informed decisions about funding and timely correction of any weaknesses identified in a Center's activities. Less frequent data collection would reduce the effectiveness of continuously monitoring the large investments of resources and time that NSF has committed to the MRSEC Program. Furthermore, the annual data collection matches the academic year planning of the Centers, increasing the likelihood that the improvements to Center activities will be made quickly. Less frequent data collection would increase the burden on the individual Centers' management by splitting 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 March 14, 2022, at 87 FR 14300, and no comments were received. In addition, the reporting requirements and estimates on the hourly burden have been discussed with the management of the Materials Research Science and Engineering 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 frequently make significant sections of 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 20 Centers that are currently funded. Each center will be required to submit an annual or final report; thus, the total number of reports will be 20 per year (with some small variation as old Centers are closed and new ones are funded). Based on comparison with other NSF Center programs and estimates from several Center directors, we estimated the average burden of preparing annual and final reports, in terms of person-hours per Center, as given in the following table:

Expense category	\$/hr	hours	Cost
1. Center Director	\$130	18	\$2340
2. Deputy Director/Center's Administrator	\$50	56	\$2800
3. IRG Leaders	\$55	52	\$2860
4. Education Director	\$35	13	\$455
5. Other admin	\$34	25	\$850
6. Students graduate/undergraduate	\$15	21	\$315
Total per Center		185	\$9620

Total hours per center are estimated to be on average approximately 185 hours; Total number of hours for 21 centers: **approximately 3885 hours.**

ANNUALIZED COST TO RESPONDENTS

Estimated average cost per Center to prepare annual and final report, based on a comparison with reporting costs from other NSF Centers and estimates from several Center directors, is \$9,620, and broken down in the above table.

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

There are no additional costs beyond the estimated hours of burden shown above. The average annual funding rate for the MRSEC program is ~\$2.67M per Center. Therefore the annual burden of preparing annual and final reports is ~0.6% of funds provided.

A. 14. Annualized Cost to the Federal Government

The reports submitted by the MRSECs will be analyzed by the NSF staff for the purpose of providing Center profile documents, various types of data analysis, and tables for the purpose of overall program management. An outside contractor will be used to provide automated data entry and collection from a web page for some of the statistical information. 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 Officer	\$90/hour	16 hours/Center	\$1440
Contractor (software used by all center reports)	\$50/hour	40 hours	\$2000
Total cost per Center			\$3440
Total cost for 20 centers			\$68,800

A. 15. Changes in Burden

Not applicable.

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

Attachment II. Detailed description of information required in final reports