Supporting STatement PART A

A.1. Circumstances that Make Data Collection Necessary

Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.

The National Science Foundation's (NSF's) Division of Graduate Education (DGE) in the Directorate for Education and Human Resources (EHR) administers the NSF Research Traineeship (NRT) program. The NRT program is designed to encourage the development and implementation of bold, new, and potentially transformative models for STEM graduate education training. The NRT program seeks to ensure that graduate students in research-based master's and doctoral degree programs develop the skills, knowledge, and competencies needed to pursue a range of STEM careers. NRT is dedicated to providing effective training of STEM graduate students in high priority interdisciplinary or convergent research areas through the use of a comprehensive traineeship model that is innovative, evidence-based, and aligned with changing workforce and research needs. The NRT program also focuses on broadening participation in STEM learning and careers, particularly among those individuals traditionally underrepresented and underemployed in the STEM workforce, including but not limited to, women, persons with disabilities, and racial and ethnic minorities.

 Currently, NRT awardees provide NSF with information on their activities through periodic research performance progress reports (RPPR). The introduction of the annual and final reports based on the RPPR format has improved the submission of project information but does not address the fact that the NRT program requires (for program management and assessment/evaluative purposes) additional (and more finely grained) information beyond that requested/specified in the RPPR format. Without these data, NSF will be unable to document the implementation of NRT project activities and outcomes. NSF will also be unable to provide satisfactory responses to requests from OSTP and Congress that require demographic data that are not currently collected.

Other EHR programs have implemented data collection via monitoring systems to allow for more detailed information to be collected for program management and accountability purposes. For e.g., a similar data collection effort has been undertaken for the precursor program to NRT, the Integrative Graduate Education and Research Traineeship (IGERT) data collection system (OMB Control # 3145-0226). Therefore, the NRT program will implement a tailored program monitoring system that will use internet-based information and communication technologies to collect, review, and validate specific data on NRT awards. The data collected via the NRT monitoring system will satisfy the RPPR requirements.

The NRT solicitation[[1]](#footnote-2) alerts those submitting proposals that “PIs will be required to submit annual and final project reports that differ from the standard reporting format contained in Research.gov. Instructions for preparing and submitting such reports will be provided to the PI.”

This information will be gathered annually, according to the RPPR data collection schedule, using the NRT monitoring system. NSF will use the data from this collection for program planning, management, and audit purposes (for e.g., to respond to queries from the Congress, the public, NSF's external merit reviewers who serve as advisors, including Committees of Visitors (COVs), the NSF's Office of the Inspector General, and as a basis for either internal or third-party evaluations of individual programs), and for other program management and accountability purposes. This information is required for effective administration, communication, program and project monitoring and evaluation, and for measuring attainment of NSF's program, project, and strategic goals, consistent with the GPRA Modernization Act of 2010, the Foundations for Evidence-Based Policymaking Act of 2018, and the NSF's Strategic Plan. [[2]](#footnote-3)

A.2. Purpose and Use of the Information

Indicate how, by whom, how frequently, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.

Data collected under this request are required for effective program administration, and to measure the attainment of NSF’s program and strategic goals as laid out in NSF’s Strategic Plan. This section describes how data to be collected under the clearance authority will be used for (1) internal program management and administration; (2) as a data source for NSF’s performance assessment activities, including Committees of Visitors (COVs) and Directorate and Office Advisory Committees; (3) for documenting the attainment of NSF’s program and strategic goals; and (4) as a foundation for rigorous assessment of the effectiveness of STEM education programs.[[3]](#footnote-4)

The Foundation’s FY 2018–2022 Strategic Plan describes three strategic goals: (1) expand knowledge in science, engineering, and learning; (2) advance the capability of the Nation to meet current and future challenges; and (3) enhance NSF’s performance of its mission. NRT contributes to the attainment of these goals through programs of activity that:

* prepare the next generation of STEM professionals and attract and retain more Americans to STEM careers;
* develop a robust research community that can conduct rigorous research and evaluation that will support excellence in STEM education and that integrates research and education;
* increase the technological, scientific and quantitative literacy of all Americans so that they can exercise responsible citizenship and live productive lives in an increasingly technological society; and
* broaden participation (individuals, geographic regions, types of institutions, STEM disciplines) and close achievement gaps in all STEM fields.[[4]](#footnote-5)

The NRT monitoring system will allow NSF to further assess any findings related to trainee preparation for careers in STEM, barriers to the implementation of a project, and strategies for improving recruitment and retention of trainees in the NRT program. Data will be analyzed by subgroups of critical interest to NSF, including underrepresented minorities and women. These findings may inform future improvements to the program.

The NRT monitoring system will include surveys to be completed by the different project participants (i.e., Principal Investigators (PIs), CoPIs, Faculty, Coordinators, and Trainees), and will allow for data analysis and data report generation by authorized NSF and contract staff. In addition to the surveys for the project participants, there is a project-level survey that is intended to be completed by PIs and Coordinators. In addition, the PI may also designate their CoPIs to have access to the project level survey.

The proposed collections request information on (1) Staff and project participants ; (2) project implementation characteristics ; and (3) project outputs. Collection of these data will be used to satisfy RPPR requirements to provide program and project-level monitoring of progress and outcomes of grant awards on an annual basis. These data may be used to provide participant reporting requirements for Federal STEM education investments to address requirements of the America COMPETES Reauthorization Act of 2010. In addition, these data may be used to provide the necessary foundation to determine individual-level treatment and control groups for future third-party study or for internal evaluation, to identify well-matched comparison groups, and to measure baseline for pre- and post-NSF-funding level impacts.

NSF will use data from the survey to inform improvements to the effectiveness and efficiency of the NRT program. Since this collection will primarily be used for program monitoring and management, a census rather than sampling design is necessary.

At the individual project level, funding for continuing grants can be adjusted based on an individual project's responses to some of the surveys. Unless otherwise provided for in the original award notice, each increment of a continuing grant will be funded at the level indicated in the original award notice without a formal request, subject to NSF’s judgment of satisfactory progress, availability of funds, and receipt and approval of the required annual report. NSF makes every attempt to honor continuing grant commitments[[5]](#footnote-6). Some data collected under this collection will serve as baseline data for separate evaluation studies.

A.3. Use of Information Technology and Burden Reduction

Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also, describe any consideration of using information technology to reduce burden.

 The NRT monitoring system will be administered entirely online via the Web. NSF favors Web-based systems because they facilitate respondents’ data entry across computer platforms. One innovative feature of the Web system is the thorough reviewing and editing of all submitted data for completeness, validity, and consistency. Editing and validation are performed as data are entered. Invalid data cannot be entered into the system, and questionable or incomplete entries are called to the respondents’ attention before they are submitted to NSF.

The NRT monitoring system will employ user-friendly features such as data entry with controls like checkboxes and radio buttons, data verification with error messages for easy online correction, standard menus, and tool-tips for questions requiring additional, clarifying information. To further reduce burden, programmed skip patterns will allow respondents to only answer questions relevant to them and their experiences; in addition, the system will carryover any data that can be pre-populated after the initial award year in an effort to further reduce burden in subsequent years. The surveys will allow respondents to save their progress at any point, allowing them to return to continue the surveys at their convenience. All of these features facilitate the reporting process, provide useful and rapid feedback to the data providers, and reduce burden for the respondents.

NSF plans to reduce burden with the use of application programming interfaces (APIs) to allow respondents to retrieve data stored elsewhere and to import it into the relevant sections of the NRT data collection. For e.g., respondents can use their ORCiD identifier to retrieve products data (for e.g., Publications and patents) that they have saved in the ORCiD system. This means they do not have to duplicate the data entry for products they worked on, and this will reduce burden. Respondents who do not have an ORCiD will be able to retrieve products information by entering a product’s digital object identifier (DOI). A DOI is a unique, persistent identifying number for a document published online. By entering the DOI for their products, respondents can quickly complete this section with minimal effort and the burden reduction is significant.

All data collected for the NRT program under this clearance will comply with Section 508, the 1998 amendment to the Federal Rehabilitation Act of 1973, which mandates that the electronic and information technology used by federal agencies be made accessible to all people with disabilities.

A.4. Efforts to Identify Duplication and Use of Similar Information

Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purpose described in item 2 above.

The NRT program monitoring clearance will not duplicate efforts undertaken by the Foundation, other federal agencies, or other data collection agents. The data to be collected under the NRT program monitoring clearance are unique and not available in either the NSF annual or final reporting system. The data collected via the NRT monitoring system will satisfy the RPPR requirements.

A.5. Impacts on Small Businesses or Other Small Entities

If the collection of information impacts small businesses or other small entities, describe any methods used to minimize burden.

NSF has determined that the requirements for this information collection do not adversely impact small businesses or other small entities.

A.6. Consequences of Collecting the Information Less Frequently

Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

The information collection proposed for this study consists of a set of surveys, with each instrument tailored for a specific respondent population. Respondents will complete annual surveys for the lifetime of the award and the responses will be used to satisfy their usual RPPR requirements. If these data are not collected, NSF will be unable to document the implementation of NRT project activities and outcomes. NSF will also be unable to provide satisfactory responses to requests from OSTP and Congress that require demographic data that are not currently collected. NSF will not have critical information that can be used to refine the NRT program, including examining participant satisfaction with the NRT program, variation of experiences across critical population subgroups, managing efforts for recruitment and retention, and an assessment of whether satisfaction, quality, and fairness have improved over time. In addition, NSF would have difficulty verifying that it has met its accountability requirements under the ‘‘Foundations for Evidence-Based Policymaking Act of 2018’’, or assess the degree to which projects and programs are meeting their goals.

A.7. Special Circumstances Relating to the Guideline of 5 CFR 1320.6 – Public Protection

Explain any special circumstances that would cause an information collection to be conducted in a manner:

There are no special circumstances for the proposed data collection. The collection of information will be conducted annually in a manner consistent with the guidelines in 5 CFR 1320.6.

A.8. Comments in Response to the Federal Register Notice and Efforts to Consult Outside Agency

If applicable, provide a copy and identify the date and page number of publications in the Federal Register of the agency’s notice, soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments.

Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting form, and on the data elements to be recorded, disclosed, or reported.

1. Federal Register Notice and Comments

In accordance with the Paperwork Reduction Act of 1995, the public was given an opportunity to review and comment through the 60-day Federal Register Notice, published on May 6, 2021 (Vol. 86, No. 86, page 24416). No public comments were received.

1. Consultations Outside of the Agency

NSF consulted with Creative Business Solutions, Inc. (CBS) on the survey content and design, administration of the survey, and the final online user interface. Due to the similarities between the NRT program and a precursor program, the IGERT monitoring system (OMB Control # 3145-0226), content was adapted from and modeled after many of the IGERT survey items; both programs focus on recruiting, retaining, and supporting students who are pursuing STEM-related careers, fostering interdisciplinary and collaborative research, and facilitating diversity and inclusion in science research and a STEM-based workforce.

The NRT data collection has been tested using a pilot test to obtain user feedback to ensure that the questions can be answered in a reasonable amount of time (i.e., that the burden estimates are accurate) and that the directions and question content are easy to understand and follow. The pilot test involved nine individuals who were either PIs or Coordinators. Members from the contracting team and NSF moderated video call “Think Aloud” exercises with two of the nine pilot testers so they could watch them use and reflect on the data collection in real time. Data obtained from both the system comments and the Think Aloud exercises revealed some areas needing clarification that have since been addressed. The system will continue to be tested throughout the data collection by allowing respondents to provide comments and feedback using the Web system. Any input on the system received from users will be shared with NSF, and any changes needed will be implemented as the system is upgraded in the future. Other opportunities to obtain feedback for improvement purposes include collecting feedback from PIs during meetings and conferences; comprehensive reviews by NSF staff; and testing performed by the system developers.

A.9. Explanation of Any Payment or Gift to Respondents

Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

No payment or gift will be offered to survey respondents.

A.10. Assurance of Confidentiality Provided to Respondents

Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.

All respondents will be shown the following survey privacy notice when logging in to the system:

The Federal Government has a continuing commitment to monitor its awards to identify and address any inequities based on gender, race, ethnicity, or disability of the principal investigators (PIs), co-PIs, trainees, or other participants.

Information from this data collection system will be retained by the NSF, a Federal agency, and will be an integral part of its Privacy Act System of Records in accordance with the Privacy Act of 1974 and maintained in the Education and Training System of Records 63 Fed. Reg. 264, 272 (January 5, 1998). All individually identifiable information supplied by individuals or institutions to a Federal agency may be used only for the purposes outlined in the system of records notice and may not be disclosed or used in identifiable form for any other purpose, unless otherwise compelled by law. These are confidential files accessible only to appropriate NSF officials, their staffs, and their contractors responsible for monitoring, assessing, and evaluating NSF programs. Only data in highly aggregated form or data explicitly requested "for general use" will be made available to anyone outside of NSF for research purposes. Data submitted will be used in accordance with criteria established by NSF for monitoring research and education grants, and in response to Public Law 99-383 and 42 USC 1885c.

A.11. Justification for Sensitive Questions

Provide additional justification for any questions of a sensitive nature, such as sexual behavior or attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.

Questions of a sensitive nature have been kept to an absolute minimum in the proposed collection. The only data that are sensitive in nature relate to respondent demographics (e.g., race, ethnicity, gender, disability, and veteran status.). Respondents may choose not to provide information that they deem privileged, such as demographic questions involving race, ethnicity, gender, disability, and veteran status. Although respondents are required to respond to these questions, they have the option of selecting “Do not wish to provide” for each demographic question.

Demographic information requested is based on government-wide standard categories currently in use on a variety of forms and would only pertain to the people who have directly worked on the award. The demographic data will be used for data analysis and reporting; it will not be used as part of the progress report evaluation. The data will be collected, maintained, and used in accordance with the Privacy Act of 1974, and any other applicable OMB and agency policies and practices.

The Foundation is committed to monitoring and identifying any real or apparent inequities based on gender, race, ethnicity, disability, or veteran status of the project participants. As such, this demographic data will allow NSF to gauge whether opportunities in science and technology for the NRT program are fairly reaching and benefiting everyone regardless of demographic category; and to ensure that those in under-represented groups have the same knowledge of and access to the program and other research and educational opportunities.

Otherwise, survey questions are limited to asking respondents to report their behavior (i.e., involvement in STEM activities, professional development activities and training) and their perceptions of their experiences (i.e., benefits, professional impact) as relates to the NRT program. Respondents are also asked to provide their names, an email address, institutional information, and funding information.

Respondents may also submit their ORCiD if they wish. Submission of an ORCiD is optional. NRT asks for an ORCiD rather than sensitive information such as an SSN or date of birth. The ORCiD is a public, digital identifier used by academics and researchers to distinguish themselves from others who might share the same name. This id remains with the scholar or academic for their entire career. The ORCiD is also tied directly to publications and other academic products that they have produced. [[6]](#footnote-7)

Trainees will be notified at the beginning of the Web survey that certain information will not be accessible by their PIs or other project personnel; however, a PI will be able to see if Trainees have or have not completed and submitted a section of their survey. Any individual-level data that are collected are provided only to program staff and contractors conducting studies using the data as authorized by NSF. Any public reporting of data is in aggregate form.

A.12. Estimates of Hour Burden Including Annualized Hourly Costs

Provide estimates of the hour burden of the collection of information. The statement should:

* Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. If this request for approval covers more than one form, provide separate hour-burden estimates for each form and aggregate the hour burdens in Item 13 of OMB Form 83-I.
* Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories.

As shown below in Table A.12.1 the NRT monitoring system consists of a set of five surveys.

**Table A.12.1 – Surveys and Burden Comprising the NRT Monitoring System**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Survey Type** | **Respondent Responsible** | **Response Frequency** | **Burden Estimate** | **Number of Respondents** | **Total Annual Hour Burden** |
| Project Survey | PI/Coordinator | Once annually | 24 hours | 102 | 2,448 hours |
| PI Survey | PI | Once annually | 15 minutes | 102 | 25.5 hours |
| CoPI Survey | CoPI | Once annually | 10 minutes | 204 | 34 hours |
| Faculty Survey | Faculty | Once annually | 10 minutes | 1020 | 170 hours |
| Trainee Survey | Trainee | Once annually | 1.5 hours | 1020 | 1,530 hours |

The estimated project survey burden listed in Table A.12.1 are based on the burden hours for RPPR respondents (OMB 3145-0221). The burden estimated for RPPR ranges from 2-16 hours. The NRT project survey respondents’ burden will likely be somewhat higher than the RPPR burden, as NRT collects some additional information beyond the scope of RPPR. The burden for the PI, CoPI, Faculty, and Trainee surveys are based on the burden reported by IGERT respondents. The NRT respondents’ burden will likely be similar in scope to the IGERT respondents’ burden as the scope of the data collections are similar in nature.

Estimates of annualized cost to respondents are shown below in Table A.12.2, with appropriate wage rate categories used and identified.

**Table A.12.2 – Estimates of Annualized Cost to Respondents Using the NRT Monitoring System**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Survey Type** | **Respondent Responsible** | **Burden Estimate** | **Hourly Wage7,8** | **Annual Cost Per Respondent** | **Number of Respondents** | **Total Annual Hour Burden** | **Total Annual Cost**  |
| Project Survey | PI/Coordinator | 24 hours | $38.847 | $2,019.68 | 102 | 2,448 hours | $95,080 |
| PI Survey | PI | 15 minutes | $38.847 | $9.71 | 102 | 25.5 hours | $990 |
| CoPI Survey | CoPI | 10 minutes | $38.847 | $6.47 | 204 | 34 hours | $1320 |
| Faculty Survey | Faculty | 10 minutes | $38.847 | $6.47 | 1020 | 170 hours | $6,599 |
| Trainee Survey | Trainee | 1.5 hours | $16.358 | $24.51 | 1020 | 1,530 hours | $25,000 |

For the NRT program, it is expected that all faculty respondents (including PIs, CoPIs, Coordinators, and Faculty) will be working at an academic institution, likely in a teaching and/or research capacity.Therefore, for the purpose of cost estimates for Faculty, the annual mean wage for postsecondary teachers from Bureau of Labor Statistics has been used, which is $80,790.[[7]](#footnote-8) Assuming a 40-hour workweek over the course of 52 weeks annually, the hourly wage for this occupation is approximately $38.84.

For the purpose of cost estimates for Trainees, the minimum stipend rate for NRT Trainees has been used, which is $34,000.[[8]](#footnote-9) Assuming a 40-hour workweek over the course of 52 weeks annually, the hourly wage for this occupation is approximately $16.35.

A.13. Estimates of Other Total Annual Cost Burden to Respondents or Record Keepers

Provide estimates of the total annual cost burden to respondents or record keepers resulting from the collection of information, (do not include the cost of any hour burden shown in items 12 and 14). The cost estimates should be split into two components: a) a total capital and start-up cost component annualized over its expected useful life, and b) a total operation and maintenance and purchase of services component.

There is no overall annual cost burden to respondents or record-keepers that results from the NRT program monitoring clearance other than the time spent responding to the online survey. It is usual, customary, and expected that individuals involved in education and training activities in the United States keep descriptive records, and the information being requested is from records that are maintained as part of normal educational or training practices. In order to receive funding, institutions must follow the instructions in the NSF Proposal and Award Policies and Procedures Guide (PAPPG) that is cleared under OMB 3145-0058. The PAPPG requires that all applicants submit requests for NSF funding and that all active NSF awardees do administrative reporting via FastLane or Research.gov. Thus, the PIs, coordinators, faculty members, and trainees, who are the primary respondents to the individual data collections within the NRT program monitoring clearance, make use of standard office equipment (e.g., computers), Internet connectivity that is already required as a startup cost and maintenance cost under OMB 3145-0058, and free software (e.g., Google Chrome, Microsoft Edge or other Web browsers) to respond.

A.14. Annualized Cost to Federal Government

Provide estimates of annualized cost to the Federal government. Also, provide a description of the method used to estimate cost and any other expense that would not have been incurred without this collection of information.

The total annual cost to the Federal Government of the NRT data collection is currently estimated to be $875,409. Computing the annualized cost to NSF for the NRT data collection was done by taking the budget for the next three years and calculating the cost for each of the following operational activities involved in producing, maintaining, and conducting the data collection (see Table A14.1).

**Table A14.1: Calculation of estimated annualized cost for NRT data collection to the Federal Government**

| **Operational Activities** | **Cost Over Three Years** |
| --- | --- |
| System Development (includes initial development of the database and Web-based application, and later changes requested by the program, e.g., increased reporting tools, additional validations) | $1,422,451 |
| System Maintenance, Updates, and Technical Support (system requires updates each year before opening the collection; maintenance is required to keep the system current with technology, e.g., database servers, operating systems) | $376,180 |
| Data Collection Opening and Support (e.g., online and telephone support to respondents and contacting respondents to encourage completion of the questions), Reporting, and Follow-up Activities (e.g., providing data to other consultants) | $827,595 |
| **Three-Year Total for All Operational Activities** | **$2,626,226** |

The annualized cost was computed as one-third of the total three-year cost; thus, the annualized cost to NSF for the NRT data collection is $875,409.

A.15. Explanation for Program Changes or Adjustments

Explain the reasons for any program changes or adjustments reported in Items 13 or 14 of the OMB Form 83-1.

This is a new submission. There are no requests for program changes or adjustments.

A.16. Plans for Tabulation and Publication and Project Time Schedule

For collections of information whose results are planned to be published, outline plans for tabulation and publication.

Typically, recurring studies generate information that NSF uses as inputs to other reports, and therefore NRT cites no specific publication plans other than internal or general use to meet reporting requirements.

The data collection that is the subject of this request will be utilized for multiple purposes that are described in sections A.1 (Circumstances Requiring the Collection of Data) and A.2 (Purposes and Use of the Data). The data that the NRT monitoring system collects are not published as a stand-alone product. The data are an input to how NSF manages, documents, evaluates, and measures its performance as an agency. Aggregate reports on the NRT participants may be shared with division/directorate/NSF leadership and with the NRT Coordinating Committee (NCC), which includes representative program officers from the other six NSF Directorates.

The data collection effort included under this request is administered by a third-party contractor that will deliver analytical reports and the raw data from the collection. NSF holds all vetting rights, and third parties are contractually forbidden from publishing results unless NSF has made a specific exception. All products of the collection are the property of NSF; after the products are delivered, NSF determines whether the quality of the products deserves publication.

When reports on studies that employ monitoring data or documents presenting analyses of monitoring data are approved for publication, distribution is likely to be electronic in nature.

A.17. Reason(s) Display of OMB Expiration Date is Inappropriate

If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.

The agency plans to display the expiration date of OMB approval on all forms/questionnaires associated with this information collection.

A.18. Exceptions to Certification for Paperwork Reduction Act Submissions

Explain each exception to the certification statement identified in Item 19 “Certification for Paperwork Reduction Act.”

There are no exceptions to the certification statement.

1. The NRT solicitation and notice of reporting requirements may be found at: [https://www.nsf.gov/pubs/2021/nsf21536/nsf21536.htm#reportreq](https://www.nsf.gov/pubs/2021/nsf21536/nsf21536.htm%23reportreq) [↑](#footnote-ref-2)
2. The Foundation's FY 2018-2022 Strategic Plan may be found at: [*https://www.nsf.gov/​publications/​pub\_​summ.jsp?​ods\_​key=​nsf18045*](https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf18045)*.* [↑](#footnote-ref-3)
3. For general information on NSF performance assessment activities see <https://www.nsf.gov/about/performance/>. [↑](#footnote-ref-4)
4. See “About Education and Human Resources (EHR),” at <https://www.nsf.gov/ehr/about.jsp>. [↑](#footnote-ref-5)
5. See <https://www.nsf.gov/pubs/policydocs/pappg20_1/nsf20_1.pdf> for more information on NSF’s proposal and award policies and procedures guide (PAPPG) [↑](#footnote-ref-6)
6. Source: https://support.orcid.org/hc/en-us [↑](#footnote-ref-7)
7. Source: <https://www.bls.gov/ooh/education-training-and-library/postsecondary-teachers.htm>.

8 Source: <https://www.nsf.gov/pubs/2021/nsf21536/nsf21536.htm> [↑](#footnote-ref-8)
8. [↑](#footnote-ref-9)