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**7556-01-P**

**NATIONAL SCIENCE FOUNDATION**

Notice of Intent To Seek Approval to Establish an Information Collection

**AGENCY**: National Science Foundation.

**ACTION**: Notice and request for comments.

**SUMMARY**: The National Science Foundation (NSF) is announcing plans to request approval for the collection of research and development data through the Evaluation of the National Science Foundation Advanced Technological Education (ATE) Program survey. In accordance with the requirement of the Paperwork Reduction Act of 1995, we are providing opportunity for public comment on this action. After obtaining and considering public comment, NSF will prepare the submission requesting that OMB approve clearance of this collection for no longer than 3 years.

**DATES**: Written comments on this notice must be received by [INSERT DATE 60 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER] to be assured of consideration. Comments received after that date will be considered to the extent practicable.

**FOR ADDITIONAL INFORMATION, CONTACT:** Suzanne H. Plimpton, Reports Clearance Officer, National Science Foundation, 4201 Wilson Boulevard, Suite 1265, Arlington, Virginia 22230; or send email to splimpto@nsf.gov. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339, which is accessible 24 hours a day, 7 days a week, 365 days a year (including federal holidays).

**SUPPLEMENTARY INFORMATION:** Comments are invited on (a) whether the proposed collection of information is necessary for the proper performance of the functions of the NSF, including whether the information shall have practical utility; (b) the accuracy of the NSF's estimate of the burden of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information on respondents, including through the use of

automated collection techniques or other forms of information technology; and (d) ways to minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

*Title of Collection:* Evaluation of the National Science Foundation Advanced Technological Education (ATE) Program

*OMB Approval Number:* 3145-NEW.

*Expiration Date of Current Approval:* Not applicable.

*Type of Request:* Intent to establish an information collection.

*Abstract:* NSF's ATE program focuses on providing Federal funds for the education of technicians at the local, regional, and national levels in advanced technology fields (i.e., advanced manufacturing, agricultural and environmental technology, biological and chemical technology, engineering, information and security, micro/nanotechnologies, and general advanced technological education) to expand the pool of skilled technicians and improve the competitiveness of the United States in international trade. The program supports the education of technicians in strategic advanced technology fields by establishing partnerships between academic institutions and industry and providing resources for the development of curriculum, professional development for college faculty and secondary teachers, and career pathways from secondary schools to 2-year institutions and from 2-year institutions to 4-year institutions. The program also aims to coordinate 2-year and 4-year institutions' teacher training programs for prospective STEM educators in strategic advanced technology fields.

The primary goals of the ATE program are to (1) educate highly qualified science and engineering technicians to meet workforce demands in strategic advanced technology fields; (2) improve the technical skills and general science, technology, engineering, and mathematics (STEM) preparation of these technicians and the educators who prepare them at the secondary (grades 7–12) and undergraduate levels; and (3) increase the capacity of institutions for advanced technician education.

To ensure that the ATE program accomplishes its goals of producing more highly qualified science and engineering technicians and improving the skills and knowledge of educators and technicians who train them, it is important to consistently assess and improve the program's activities. Therefore, this evaluation aims to gather information on the following research questions:

1. How has ATE advanced the mission of NSF between FY 2007 and FY 2015?
2. How do individual awardees implement student-focused activities at their ATE projects/centers?
3. What are the educational outcomes of students who have participated in ATE-funded activities?
4. How do individual awardees implement faculty-focused activities at their ATE projects/centers?
5. How have program-supported activities enhanced faculty and teacher knowledge/skills/networks, especially as they relate to building capacity at institutions to address workforce needs in advanced technology fields?
6. How do grantees develop partnerships with industry to support student and faculty/teacher development?
7. How have awardee partnerships with business and industry enhanced student educational training and workforce outcomes?

Because of the nature of the ATE program and the type of information being sought, a mixed methods evaluation design will be employed. The evaluation will collect data using web surveys and qualitative methods (consisting of semi-structured interviews and focus groups), as well as draw on data from extant sources. The study components include: a descriptive implementation study that describes project implementation; a relational study of associations between project/center and student characteristics on student outcomes; and a comparative

study using the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS) data to compare degrees and certificates conferred by non-ATE-funded institutions and ATE-funded institutions before and after receipt of funding. Approval is only sought for new data that will be collected for the study, including:

- **Survey data from ATE PIs** who were awarded funding between 2007 and 2015 to understand how projects and centers operate and how awards are implemented: This survey collects data on the types of ATE-supported activities students engage in, program completers, graduates in the workforce, and professional development offered to secondary and postsecondary educators.
- **Survey data from faculty and teachers** who directly participated in ATE-funded professional development (hereafter referred to as faculty) between 2012 and 2015 to understand the perceived impact on faculty growth: This survey asks about faculty members' participation in professional development activities, professional networks or communities of practice, and whether participation in the networks or communities improved their instruction.
- **Survey data from current and former students** who have directly participated in ATE-funded training activities (defined as having enrolled in technology degree or certificate programs developed as part of ATE-funded work, or worked in technology labs maintained as part of ATE-funded work, or participated in industry internships created as part of ATE-funded work) between 2012 and 2015 to understand: their reasons for participating in an ATE program, the perceived value and impact of the program, skills and experiences obtained, reasons for leaving the program (if applicable), interest in pursuing advanced education or occupation in advanced technology field, and educational and occupational status obtained.

- **Semistructured interviews with PIs**: to obtain more detail on program implementation, student recruitment and retention strategies and challenges, perceptions of professional development and training on specific outcomes, and lessons learned.
- **Semistructured interviews with faculty participants**: to obtain more detail on professional development activities they engaged in and which aspects were the most and least successful with regard to perceived impact of professional development on themselves and specific student outcomes.
- **Virtual focus groups with current and former student participants**: to describe in more detail their experiences with and perceptions of the ATE program, including how they learned about the program; supports and challenges to staying in/completing the program; activities they engaged in; and perceived impact on their skills, goals/interests, and workforce readiness.

*Use of the information:* The primary purpose of collecting this information is program evaluation. The data collected will enable NSF to describe program components that are implemented with ATE fundsand will be used by NSF to monitor and improve the program and assess its merit and worth. The evaluation will also inform the design of a future impact evaluation.

*Expected respondents:* The expected respondents are up to 560 ATE PIs who have received ATE funding since 2007; 33,613 faculty members who have participated in ATE-funded professional development since 2012; and 43,763 students who have directly participated in PIs' ATE-funded work since 2012.

*Estimate of burden:* The collection occurs once for each respondent. The total estimate for this collection is 19,622 burden hours and $578,887.41. The calculation is shown in table 1.

**Table 1. Estimated Burden to Survey, Interview, and Focus Group Participants**

| Type of Collection | Anticipated | Estimated Annual | Estimated Annual |
|---|---|---|---|

| | Responses (# of Persons) | Burden (in Hours) | Burden (in Dollars) |
|---|---|---|---|
| PI List Collection | 142 | 71 | $2,795.27 |
| PI Web Survey | 390 | 130 | $5,118.10 |
| Faculty Web Survey | 33,585 | 8,396 | $330,550.52 |
| Student Web Survey | 43,707 | 10,927 | $237,552.98 |
| PI Semistructured Interview | 28 | 28 | $1,102.36 |
| Faculty Semistructured Interview | 28 | 14 | $551.18 |
| Student Focus Group | 56 | 56 | $1,217.00 |
| Total | 77,936 | 19,622 | $578,887.41 |

Dated: August 29, 2017.

Suzanne H. Plimpton,

Reports Clearance Officer,

National Science Foundation.

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