

# National Science Foundation Annual Report Components

NSF grant PIs submit annual reports to NSF via the FastLane system at [fastlane.nsf.gov](http://fastlane.nsf.gov).

This document is a compilation of the FastLane annual reports system components. It identifies each component of the annual report and provides NSF's explanations concerning the "what" and "why" of each section. No modifications have been made to the original FastLane text, except for that which appears in [brackets].

This document was prepared by EvaluATE (NSF # 0802245) to assist ATE grantees in preparing their annual reports.

## Project Participants

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### 1. What people have worked on your project?

#### What?

We ask PIs to provide basic information about each person who worked on the project – name, role on project, extent of time put in, and what the person has done on the project. *(This information may be made publicly available.)*

We then ask those in certain categories – from principal investigators to funded undergraduate assistants who worked many hours on the project and received compensation from the award – for a little more data about themselves. *(This information will be held closely.)*

#### Why?

We ask for *demographic data* – relating to gender, ethnicity, race, disability, and citizenship, so that:

- We can gauge whether our programs and other opportunities in science and technology are fairly reaching and benefiting everyone regardless of demographic category;
- We can ensure that those in under-represented groups have the same knowledge of and access to programs, meetings, vacancies, and other research and educational opportunities as everyone else; and
- We can assess involvement of international investigators or students in work we support.

Submission of demographic information is voluntary. You will suffer no adverse consequences if you fail to provide it, but we really need your information to help assure the statistical validity of our data. You can get more information about [ways NSF will use this information](#). Collection of this information is authorized by the NSF Act of 1950, as amended. You may also see our general [Privacy Act and Public Burden Statements](#).

### 2. What other organizations have been involved as partners?

#### What?

Here you let NSF know about partner organizations outside your own institution – academic institutions, other nonprofits, industrial or commercial firms, state or local governments, schools or school systems, or whatever – that have been involved with your project. Partner organizations may provide financial or in-kind support, supply facilities or equipment, collaborate in the research, exchange personnel, or otherwise contribute. The screens will lead you through the obvious possibilities, but will also give you an opportunity to identify out-of-the-ordinary partnership arrangements and to describe any arrangement in a little more detail.

## Why?

NSF cannot achieve its ambitious goals for the science and technology base of our country with its own resources alone. So we place strong emphasis on working in partnership *with* other public and private organizations engaged in science, engineering, and education and on encouraging partnerships *among* such organizations. We also seek partnerships across national boundaries, working with comparable organizations in other countries wherever mutually beneficial.

So we need to gauge and report our performance in promoting partnerships. We need to know about the partnerships in which our awardees have engaged and to what extent they have been effective.

We use a pre-established list of organizations to ensure consistency and to avoid both lost information and double counting where the same organization is identified by different names

## 3. Have you had other collaborators or contacts?

### What?

Some significant collaborators or contacts within your institution may not be covered by "What **people** have worked on the project?" Likewise, some significant collaborators or contacts outside your institution may not be covered under "What other **organizations** have been involved as partners?" Some of these collaborators or contacts may nonetheless be quite significant, and we thought you should have a place to report them.

You might let NSF know about any significant:

- collaborations with scientists, engineers, educators, or others within your own institution – especially interdepartmental or interdisciplinary collaborations;
- non-formal collaborations or contacts with scientists, engineers, educators, or others outside your institution; and
- non-formal collaborations or contacts with scientists, engineers, educators, or others outside the United States.

Many will have no such other collaborators or contacts to report. That's fine; just click the appropriate button and move on.

### Why?

[No additional information is with regard to "why."]

## Activities and Findings

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### 1. Describe the major research and education activities of the project.

#### What?

Please reiterate the goals and objectives of your efforts, and summarize the research and education activities you have engaged in that aim to achieve these objectives. Include experiments you have conducted, the simulations you have run, the collecting you have done, the observations you have made, the materials you have developed, and major presentations you have made about your efforts. In a later section you will list more formally any publications and other specific products (database, collections, software, inventions, etc.) that have resulted.

## **Why?**

What you tell us under "project activities" and "project findings" will inform your program officer, who will be reviewing your project for satisfactory progress from year to year and assessing the results from this award once it is completed. What you tell us here also lays the foundation for your subsequent description of specific products (publications, collections, software, etc.) and broader contributions.

## **2. Describe the major findings resulting from these activities.**

### **What?**

Please summarize the conclusions that have emerged from your activities. Later screens will invite you to identify publications and other concrete products (collections, databases, software, inventions, and so on) and to explain the significance and implications of both findings and products for your field, for other fields, and even beyond science and engineering.

*If you have no findings to report, at least for now, please click the corresponding button. We anticipate that as the project progresses your emphasis in reporting will shift from activities to findings and products, and ultimately to contributions.*

### **Why?**

What you tell us under "project activities" and "project findings" will inform your program officer who will be reviewing for satisfactory progress from year to year and then assessing the results from this award once it is completed. What you tell us here also lays the foundation for your subsequent description of specific products (publications, collections, software, etc.) and broader contributions

[Note: The "why" explanations for Points 1 and 2 in the Activities and Findings section are identical. The duplication within this document is not an error.]

## **3. Describe the opportunities for training, development and mentoring provided by your project.**

### **What?**

Please summarize the contributions to the research and teaching skills and experience of those who have worked on the project, including undergraduate students, graduate students, post-docs, college faculty, and K-12 teachers. If your project supported postdoctoral researchers then you must include a summary of the mentoring activities conducted.

### **Why?**

Support for basic research in an education-rich environment characterizes the American research endeavor and distinguishes it from that in many other countries. NSF supports such research in part to attract young people to, and prepare them for, careers in science, mathematics, and engineering. Education in science, math, engineering, and technology for those who will *not* be making careers in science or technology, plus broad public exposure to those fields, are also part of NSF's purpose. Finally, integration of research and education is one of NSF's core strategies, for when research and education are effectively integrated, the cost of both is often reduced; and new scientific and engineering knowledge and techniques are more quickly and effectively communicated.

NSF therefore needs to learn how those we support are pursuing these ends. Moreover, we evaluate projects in significant part on the basis of results achieved in research training, education and public outreach. So we ask you to describe for those who will be reviewing your project – both the NSF program officer reviewing for satisfactory progress and, later on, reviewers assessing the results from past NSF support – what you have accomplished in these areas. These descriptions also lay a base from which you can later identify, both specific educational

products (textbooks, courseware, and so on) that have come out of your project and broader educational contributions that resulted.

#### **4. Describe outreach activities your project has undertaken.**

##### **What?**

Please summarize any project activities that aimed to reach out to members of communities who are not usually aware of your activities, for the purpose of enhancing participation in science learning and careers in science, public understanding of science and technology, or the like. If you have nothing (yet) to report, please click the corresponding button.

Later screens will invite you to identify any books or concrete products that have resulted from such activities and to say how the project has contributed beyond its own boundaries to education and development of human resources.

##### **Why?**

Support for basic research in an education-rich environment characterizes the American research endeavor and distinguishes it from that in many other countries. NSF supports such research in part to attract young people to, and prepare them for, careers in science, mathematics, and engineering. Education in science, math, engineering, and technology for those who will *not* be making careers in science or technology, plus broad public exposure to those fields, are also part of NSF's purpose. Finally, integration of research and education is one of NSF's core strategies, for when research and education are effectively integrated, the cost of both is often reduced; and new scientific and engineering knowledge and techniques are more quickly and effectively communicated.

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[Note: The “why” explanations for Points 3 and 4 in the Activities and Findings section are identical. The duplication within this document is not an error.]

## **Publications and Products**

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### **1. What have you published as a result of this work?**

- **Journal publications**
- **Books or other non-periodical, one-time publications**

##### **What?**

Report articles or papers appearing in scientific, technical, or professional journals. Report only the major publication(s) resulting from your work under this award. You are the judge of which publications are the major ones, and we do not restrict the number. However, we are not interested in a long list, but rather in the publication(s) that most reflect the work under this award.

A publication in the periodically published proceedings of a scientific society, a conference (one time or part of a series), or the like should be added in the "Conference Proceedings" section of the Project Report.

## **Why?**

Publications are the characteristic product of basic research, particularly academic basic research. NSF evaluates not numbers of publications, but what the publications demonstrate about the excellence and significance of the underlying research and about the efficacy with which the results are being communicated to colleagues, potential users, and other publics.

We now ask for information on publication broken down into several separate fields – Author, Page, Year, and so on – because such disaggregated information is essential for bibliometric studies, searches, and other forms of analysis.

We ask for information on journal publications separately from information on books and other publications primarily because some of the relevant data elements (fields) are a little different.

**We are interested in your books and other publications for essentially the same reasons that we are interested in your journal publications. We ask for them separately so that we can distinguish them in our database and because some of the relevant data elements (fields) are a little different.**

## **2. What Web site or other Internet site have you created?**

[No additional information is provided in this reporting category.]

## **3. What other specific products (databases, physical collections, educational aids, software, instruments, or the like) have you developed?**

### **What?**

Please report any significant product, other than a publication, that you have developed under this project. Here, we are just looking for a description of the specific product, how it is being shared, and the like. Later you will be asked to identify the ways in which these and other outputs from your project contribute to broader outcomes.

Among the products we ask you to consider reporting are:

- Data or databases,
- Physical collections (samples, specimens, germ lines, or the like),
- Teaching aids (other than publications),
- Audio or video products,
- Software (or netware),
- Instruments or equipment developed,
- Other inventions, and
- Other products.

### **Why?**

Many of the projects we support (though by no means all) develop significant specific products other than publications. NSF should be reporting these products to Congress, the scientific and engineering community, and the people, and should be assessing them ourselves, as important outputs from the support we provide. They should also be recognized in the evaluation of your results from past NSF support when you submit a new proposal.

# Contributions

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## 1. The principal discipline(s) of the project

### What?

Having summarized project activities and principal findings in one earlier section, and having listed publications and other specific products in another, here say how all those fit into and contribute to the base of knowledge, theory, and research and pedagogical methods in the principal disciplinary field(s) of the project.

Please begin with a summary that an intelligent lay audience can understand (*Scientific-American* style). Then, if needed and appropriate, elaborate technically for those more knowledgeable in your field(s).

How you *define* your field or discipline matters less to NSF than that you cover (here or under the next category – "Contributions to Other Disciplines") all contributions your work has made to science and engineering knowledge and technique. Make the most reasonable distinction you can. In general, by "field" or "discipline" we have in mind what corresponds with a single academic department or a single disciplinary NSF division rather than a subfield corresponding with an NSF program – physics rather than nuclear physics, mechanical engineering rather than tribology, and so forth. If you know the coverage of a corresponding NSF disciplinary division, we would welcome your using that coverage as a guide.

### Why?

A primary function of NSF support for research and education – along with training of people – is to help build a base of knowledge, theory, and technique in the relevant fields. That base will be drawn on many times and far into the future, often in ways that cannot be specifically predicted, to meet the needs of the nation and of people. Most NSF-supported research and education projects should be producing contributions to the base of knowledge and technique in the immediately relevant field(s).

## 2. Other disciplines of science or engineering

### What?

Please identify any currently evident ways in which the project has contributed, or seems likely to contribute, to disciplines of science and engineering other than disciplines covered under "Contribution within Discipline".

### Why?

Many fields of science, and therefore many NSF programs and projects, contribute tools or underpinnings to other fields of science. (For example, a theoretical advance in physics may have applications in chemistry or mechanical engineering.) NSF does not routinely expect identifiable applications for other fields from individual projects. Still, such applications often do arise (sometimes in ways completely unexpected when the project was initiated). They are often important results from NSF-funded projects. We want to know about them and report them, and to give credit for them where it is due.

### **3. The development of human resources**

#### **What?**

Describe how your project has contributed to human resource development in science, engineering, and technology by:

- providing opportunities for research, teaching and mentoring in science and engineering areas;
- improving the performance, skills, or attitudes of members of underrepresented groups that will improve their access to or retention in research and teaching careers;
- developing and disseminating new educational materials or providing scholarships; or
- providing exposure to science and technology for pre-college teachers, young people, and other non-scientist members of the public.

#### **Why?**

A major aim of NSF programs is to contribute to the human-resource base for science and technology, including the base of understanding among those who are not themselves scientists or engineers. A core NSF strategy is to encourage integration of research and education. NSF needs to know and be able to describe how the work we support actually furthers that aim and that strategy. Moreover, contributions of this sort are important in the evaluation of results from your project when we and reviewers are considering a new proposal.

### **4. The physical, institutional, or information resources that form the infrastructure for research and education**

#### **What?**

*To the extent you have not already done so in describing project activities and products, please identify ways, if any, in which the project has contributed to resources for research and education used beyond your own group and immediate colleagues, by creating or upgrading:*

- physical resources such as facilities, laboratories, instruments, or the like;
- institutional resources for research and education (such as establishment or sustenance of societies or organizations); or
- information resources, electronic means for accessing such resources or for scientific communication, or the like.

#### **Why?**

Physical, institutional, and information resources are important parts of the science and technology base that NSF seeks to sustain and build. Where particular projects build or sustain those resources for a broader community of scientists, engineers, technologists, and educators, that is a significant outcome which should be counted among the results that have come from federal support of science and engineering research and education. And you should get credit for those results.

Some NSF projects serve this purpose in a direct and primary way and so might report the outputs in earlier sections. Many NSF projects do not serve it at all, and are not expected to. But many serve it in ways ancillary to their primary purposes and activities. This is the place to report such contributions.

## **5. Other aspects of public welfare beyond science and engineering, such as commercial technology, the economy, cost-efficient environmental protection, or solutions to social problems**

### **What?**

Please identify any currently evident ways in which the project has contributed to society, or seems likely to contribute, *beyond the bounds of science and engineering as such*. For example, the project may have contributed to the environment, commercial technology, public health or safety, economic or other policy, solution of social problems, or other aspects of the public welfare.

### **Why?**

NSF expects that its broad programs will contribute to commercial technology, cost-effective environmental protection, solution of social problems, and other aspects of the public welfare by building our nation's science and technology base, which will then be drawn upon for all those purposes. NSF does not normally expect direct contributions of that kind from individual projects. Nonetheless, not infrequently, individual projects, or a broader set of scientific or engineering results to which the individual project has identifiably contributed, do turn out to produce more or less direct applications to the broader public welfare. That is particularly common in fields that relate more immediately to technology and other economic or social applications – engineering and computer science being only the most obvious examples. When such contributions occur, NSF should certainly report to the public and its representatives these benefits that they realize from public support of science and engineering. And again, you should get credit for such results.

## **Conference Proceedings**

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### **1. What Conference Proceedings have you published as a result of this work?**

#### **What?**

Search and add any publications in the periodically published proceedings of a scientific society or a conference (one time or part of a series).

#### **Why?**

Publications are the characteristic product of basic research, particularly academic basic research. NSF evaluates not numbers of publications, but what the publications demonstrate about the excellence and significance of the underlying research and about the efficacy with which the results are being communicated to colleagues, potential users, and other communities.

We now ask for information on publication broken down into several separate fields—Author, Page, Year, and so on—because such disaggregated information is essential for bibliometric studies, searches, and other forms of analysis. We ask for information on conference proceedings separately from information on journal publications, books and other publications primarily because some of the relevant data elements (fields) are a little different.