

# STC Annual Reporting Requirements and Instructions

The annual project report provides much of the information required for the evaluation of the Center. An annual project report also serves as the Awardee's request for continued support. Substantial parts of this annual project report (excluding proprietary information, for example) must be posted on the Center's Web Site.

## ***DUE DATE:***

Every year the PI is required to submit an annual project report electronically using the FastLane Project Reports System. The annual project report is due three months before the start date of the next award increment. Failure to provide an annual project report will delay your request for continued support.

## **STC Annual Reporting Requirements**

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### ***WHAT YOUR REPORT SHOULD INCLUDE:***

Your Report should include the information below. Clicking on a hyperlink provides examples or a definition of the concept underlined. To return back to the questions, click on the hyperlink of the definition or example. Data tables have been provided as suggested formats. Centers may regenerate these tables using alternative software as appropriate

### **I. GENERAL INFORMATION**

1a. Provide the following general information:

Date submitted	
Reporting period	
Name of the Center	
Name of the Center Director	
Lead University	
Contact information, if changed since last reporting period	
Address	
Phone Number	
Fax Number	
Email Address of Center Director	
Center URL	

1b. Provide, in one page or less, brief biographical information for each *new* faculty member *by institution*. Attach as [Appendix A](#).

1c. Provide the name and contact information for the primary person to contact with any questions regarding this report.

Name of the Individual	
Center role	
Address	
Phone Number	
Fax Number	
Email Address	

2. Context Statement (maximum of 20 pages). The Context Statement should include a brief overview of the vision, goals, plans, and performance and management indicators for the Center. Any significant changes from the original plans for the Center should be described. This section also reports on progress toward meeting the goals set for the Center (described in detail in the remaining sections) and provides an overview of significant accomplishments during the reporting period. The Context Statement also should contain include a discussion of how the Center's accomplishments in the past year fit within the overall Center accomplishments since the Center's inception. In addition, the Context Statement should situate the work of the Center within the context of the disciplinary field(s) at large.

**Insert Context Statement.**

*The remaining sections of the report provide details of significant accomplishments during the reporting period, progress in meeting the Center's goals, and any difficulties in realizing the activities planned for the reporting period. Plans for the next year also should be described. The performance and management indicators developed for assessing progress of the Center in meeting its planned goals should be reported for each of these sections. These sections are specific to the reporting period and should be reported annually. Research, education and knowledge transfer results or problems not reported in prior years, but due to the STC investment of prior years, may also be reported.*

## **II. [RESEARCH](#)** (click for definition)

1a. Describe the Center's overall research goals and/or objectives. If the Center's overall research goals/objectives changed from the previous year, how did they change and why? [In section 2a below, please describe progress the Center has made toward reaching these goals/objectives.]

1b. Inform us of the [performance and management indicators](#)/metrics (click for definition), if changed from the previous reporting period, the Center has developed to assess progress in meeting its research goals/objectives.

- 1c. Discuss any problems you have encountered in making progress toward the Center's research goals/objectives during the reporting period as well as any problems anticipated in the next period. Include your plans for addressing these problems.
- 2a. Briefly describe the research thrust areas at the Center. Please provide basic information for each thrust area and details of significant accomplishments during the reporting period, including any research partnerships and their contributions to the Center (*do not include publications, presentations, etc., that are reported in Section VIII, Center-wide Outputs and Issues*). Include in the narrative a discussion of the goals, activities, and [outcomes and/or impacts](#) in the current reporting period, if changed from the previous reporting period. Be sure to discuss how the activities in the various research thrust areas enable the Center to meet its goals/objectives described above.

*Repeat item 2a for each research thrust area.*

- 2b. Describe how the Center is doing with respect to the indicators/metrics listed above. Include any data that have been collected on the indicators/metrics.
- 2c. Describe your research plans for the next reporting period with attention to any major upcoming changes in research direction or level of activity. Also, list plans for developing new research partnerships, if any, for the next reporting period.

### III. [EDUCATION](#) (click for definition)

- 1a. Describe the Center's overall education goals and/or objectives. If the Center's overall education goals/objectives changed since the last reporting period, how did they change and why? [In section 2 below, please describe progress the Center has made toward reaching these goals and/or objectives.]
- 1b. Inform us of the [performance and management indicators](#) (click for definition) the Center has developed to assess progress in meeting its education goals/objectives, if changed from the previous reporting period.
- 1c. Discuss any problems you may have encountered in making progress toward the Center's education goals/objectives during the reporting period as well as any problems anticipated in the next period. Include your plans for addressing these problems.
- 2a. Describe the Center's [internal educational activities](#) (click for definition) in the reporting period. Include in the narrative a discussion of how the various internal education activities enable the Center to meet its education goals/objectives described above.

Activity Name	
Led by	
Intended Audience	
Approx Number of Attendees (if appl.)	

Narrative: For each activity above, briefly describe the activity and its goals, outputs, [outcomes or impacts](#) (click for definition), if known, in the current reporting period. This information should also enable NSF to understand the scope of the activity. Please also note any educational partnerships the Center established in the current reporting period which may have contributed to the educational activities listed.

*Repeat Item 2a for each internal educational activity at the Center.*

- 2b. Summarize the participation of Center students in [professional development activities](#) (click for definition) in the reporting period. Include in the narrative a discussion of how the various professional development activities enable the Center to meet its goals/objectives and produce meaningful results.
- 2c. Describe the Center's [external educational activities](#) (click for definition) in the reporting period. Include in the narrative a discussion of how the various external educational activities enable the Center to meet its goals/objectives and produce meaningful results.

Activity Name	
Led by	
Intended Audience	
Approx Number of Attendees (if appl.)	

Narrative: For each activity above, briefly describe the activity and its goals, outputs and [outcomes and/or impacts](#) if known, in the current reporting period. Discuss any

educational partnerships, domestic or international, the Center has established that may be related to the activities listed. The information provided here should also enable NSF to understand the scope of the activity.

*Repeat Item 2c for each external educational activity at the Center.*

- 2d. Describe and discuss the ways in which the Center integrated research and education in the reporting period, with examples as appropriate.
- 2e. Describe how the Center is doing with respect to the indicators/metrics listed above. Include any data that have been collected on the indicators/metrics.
- 2f. Describe your plans for internal and external educational activities for the next reporting period with attention to any major changes in direction or level of activity. Also, list plans for developing new educational partnerships, if any, for the next reporting period.

IV. [KNOWLEDGE TRANSFER](#) (click for definition)

- 1a. Describe the Center's overall knowledge transfer goals and/or objectives. If the Center's overall knowledge transfer goals/objectives changed since the last reporting period, how did they change and why? [In section 2 below, please describe progress the Center has made toward reaching these objectives.]
- 1b. Inform us of the [performance and management indicators](#) (click for definition) the Center has developed to assess progress in meeting its knowledge transfer goals/objectives.
- 1c. Discuss any problems you have encountered in making progress toward the Center's knowledge transfer goals/objectives during the reporting period as well as any problems anticipated in the next period. Include your plans for addressing these problems.
- 2a. List organizations with which knowledge transfer occurs and the frequency and type of interactions. Describe the Center's [knowledge transfer activities](#) (click for definition) in the current reporting period and discuss how they enable the Center to meet its knowledge transfer goals/objectives listed in 1a above.

Knowledge Transfer Activity Name		
Led by		
Organizations Involved (add rows as necessary)		
	Name	Address
1		
2		
3		
	(add rows as necessary)	

Narrative: For each activity above, briefly describe the activity, its goals/objectives, [outputs](#) (click for definition) and the [outcomes or impacts](#) (click for definition) in the current reporting period.

*Repeat item 2a for each knowledge transfer activity at the Center.*

- 2b. Describe any other outcomes or impacts of knowledge transfer activities not listed above. Discuss, in particular, applications of Center research in industry, Federal Laboratories or elsewhere not discussed above.
- 2c. Describe how the Center is doing with respect to the indicators/metrics listed above. Include any data that have been collected on the indicators/metrics.
- 2d. Describe your plans for knowledge transfer activities for the next reporting period with attention to any major changes in direction or level of activity. Include plans for new knowledge transfer partnerships, if any.

## V. EXTERNAL PARTNERSHIPS

- 1a. Describe the Center's overall goals and/or objectives for developing external partnerships. If the Center's overall partnership goals/objectives have changed since the last reporting period, how did they change and why? [In section 2a below, please describe progress the Center has made toward reaching these goals/objectives.]
- 1b. Inform us of the [performance and management indicators](#) (click for definition) the Center has developed to assess progress in meeting its partnership goals/objectives.
- 1c. Discuss any problems you have encountered in making progress toward the Center's partnership goals/objectives during the reporting period as well as any problems anticipated in the next period. Please include your plans for addressing these problems.
- 2a. Describe and discuss the [activities](#) (click for definition) that are conducted as part of partnerships, which are *not listed in another section of this report*. Be sure to discuss how the Center's partnership activities enable the Center to meet its partnership goals/objectives listed above.

Partnership Activity			
Led by			
Organizations Involved (add rows as necessary)			
	Name of Organization	Shared Resources (if any)	Use of Resources (if applicable)
1			
2			
3			
	Insert rows as necessary		

Narrative: Briefly describe goals/objectives, outputs and the [outcomes or impacts](#) (click for definition) of the activity in the current reporting period

*Repeat Item 2a for each partnership activity at the Center.*

- 2b. Describe any other outcomes or impacts of partnership activities not listed elsewhere.
- 2c. Describe how the Center is doing with respect to the indicators/metrics listed above. Include any data that have been collected on the indicators/metrics.
- 2d. Describe your plans for partnership activities for the next reporting period with attention to any major changes in direction or level of activity.

## VI. DIVERSITY

- 1a. Describe the Center's overall goals and/or objectives related to increasing diversity at the Center. If there have been any changes in the Center's overall goals/objectives and plans related to increasing diversity since the last reporting period, please discuss these changes and the reasons behind them. [In section 2a below, please describe progress the Center has made toward reaching these goals/objectives.]
- 1b. Inform us of the [performance and management indicators](#) (click for definition) the Center has developed to assess progress in meeting its diversity goals/objectives.
- 1c. Discuss any problems you have encountered in making progress toward the Center's diversity goals/objectives during the reporting period as well as any problems anticipated in the next period. Include your plans for addressing these problems.
- 2a. Describe and discuss Center activities which contribute to the development of United States human resources in science and engineering at the postdoctoral, graduate, undergraduate, and pre-college levels. Please pay particular attention to those accomplishments and activities that aim to attract, increase, and retain the participation of US citizens, nationals, or lawfully admitted permanent resident aliens of the United States, women, [underrepresented groups](#) (click for definition), and persons with disabilities. Include a discussion of any partnerships formed allow the Center to meet its diversity goals/objectives.
- 2b. Discuss the impact of these programs or activities on enhancing diversity at the Center.
- 2c. Describe how the Center is doing with respect to the indicators/metrics listed above. Include any data that have been collected on the indicators/metrics.
- 2d. Describe your plans for programs, activities, or partnerships to enhance diversity for the next reporting period with attention to any major changes in direction or level of activity. Be sure to discuss how the planned activities will enable the Center to meet its diversity goals/objectives.



## VII. MANAGEMENT

- 1a. Describe the Center's organizational strategy and its underlying rationale, if changed since the last reporting period. To assist in your description, attach the organization chart of the Center during the reporting period as [Appendix B](#) (if changed from last period). If there have been any changes in the Center's organization or management since the last reporting period, discuss these changes and the reasons behind them.
- 1b. Inform us of the [performance and management indicators](#) (click for definition) the Center has developed to assess its progress in organizational and management goals/objectives.
- 1c. Describe how the Center is doing with respect to the indicators/metrics listed above. Include any data that have been collected on the indicators/metrics.
- 1d. Discuss any problems (e.g., technical, personnel, communication) you may have encountered in realizing the Center's organizational strategy or management goals/objectives in the reporting period as well as any problems anticipated in the next period. Include your plans for addressing any problems.
2. Describe and discuss the management and communications systems being used to develop a fully integrated STC as well as any problems encountered in achieving this integration, if changed from the previous reporting period.
3. Provide a list of names and affiliations of the Center's internal and external advisors or advisory bodies in the reporting period. Attach summary minutes of advisory committee meetings as [Appendix C](#).

	Name	Affiliation
1		
2		
3		
	Add rows as necessary	

4. Describe and discuss any changes to the Center's strategic plan since its last submission.

## VIII. CENTER-WIDE OUTPUTS AND ISSUES

1a. List all [Center publications](#) (click for definition) in the reporting period using a standard citation format. *Please distinguish among the following publication types:*

- [peer reviewed publications](#) (click for definition)
- books and book chapters
- other non-peer reviewed publications

1b. List all conference presentations in the reporting period using a standard citation format.

1c. Briefly describe any other dissemination activities not included elsewhere in the report.

2. List all awards and other honors with names of those honored and source in the reporting period. Please classify the [award type](#) (click for definition) indicating whether the award or honor is scientific, education-related, industry-related, a fellowship, or other.

	Recipient	Reason for Award	Award Name and Sponsor	Date	Award type
1					
2					
3					
		Add rows as necessary			

3. List any undergraduate, M.S. and Ph.D. students who graduated during the reporting period. Include their current placement. Include the number of years taken since entering graduate school to complete the Ph.D. List postdoctoral associates who left the STC during the reporting period, and include their current placement.

	Student Name	Degree(s)	Years to Degree	Placement
1				
2				
	Add rows as necessary			

4a. List, to the extent known, the general outputs of knowledge transfer activities since the last reporting period. Include:

	Patent Name and Inventors/Authors	Number	Application Date	Receipt Date (leave empty if pending)
1				
2				
3				
	Add rows as necessary			
	License Name	Number	Licensed By	Date
1				
2				

3				
	Add rows as necessary			
	Name of Start-Up Company	Main Product(s)		
1				
2				
3				
	Add rows as necessary			

4b. Describe any other outputs of knowledge transfer activities made during the reporting period not listed above.

5. List all [participants](#) (click for definition) in Center activities alphabetically classified by the categories and demographic characteristics listed below the table. Center [affiliates](#) (click for definition) may also be included in this table, but MUST be distinguished from participants.

	Participant Name	Category	Institutional Affiliation	Department (if applicable)
1				
2				
3				
	Add rows as necessary			

- Category: (a) [undergraduate students](#), (b) [graduate students](#), (c) [faculty](#), (d) visiting faculty, (e) other research scientists, (f) postdoctorates, (g) pre-college students, (h) teachers, (i) educators and (j) other participants (click underlined terms for definitions).
- Institutional Affiliation: the primary institution at which an individual is employed or affiliated with (e.g. for a faculty member, this would be their home university).
- Department: if participant is associated with a University, please list the academic department with which they are affiliated, if applicable.

6. Provide a summary listing of all of the Center's research, education, knowledge transfer and other institutional partners (the total number of academic institutions and non-academic organizations, including industry, states, and other Federal agencies which work or share resources with the Center).

	Organization Name	Organization Type*	Address	Contact Name	Type of Partner**	160 hours or more? (indicate Y/N)
1						
2						
3						

\*For organization type, please indicate whether the partner organization is a company, national laboratory, Federal government, state/local government, NGO, or other

\*\*For type of partner, please indicate whether the partner organization is a research, education, knowledge transfer, diversity, or other partner. You may list more than one type, if applicable.

7. For internal NSF reporting purposes, provide a Summary Table with the following information:

1	the number of participating institutions (all academic institutions that participate in activities at the Center)  this value should match the number of institutions listed in Section I, Item 1 of the report plus other additional academic institutions that participate in Center activities as listed in the table above.	
2	the number of institutional partners (total number of non-academic participants, including industry, states, and other federal agencies, at the Center)  this value should match the number of partners listed in the table in Section VIII, Item 6 (above)	
3	the total leveraged support for the current year (sum of funding for the Center from all sources <i>other</i> than NSF-STC) [Leveraged funding should include both cash and in-kind support that are related to Center activities, but not funds awarded to individual PIs.]  this value should match the total of funds in Section X, Item 4 of "Total" minus "NSF-STC" for cash and in-kind support	
4	the number of <a href="#">participants</a> (total number of people who utilize center facilities; not just persons directly supported by NSF) . Please EXCLUDE <a href="#">affiliates</a> (click for definition)  this value should match the total number of participants listed in Section VIII, Item 5 (above)	

8. Describe any media publicity the Center received in the reporting period. Provide in [Appendix D](#) any appropriate media materials that can be used to disseminate information on Center accomplishments and activities to the public.

**IX. INDIRECT/OTHER IMPACTS**

1. Please describe any international activities in which the Center has engaged. If they are described elsewhere in the report, highlight them here without going into great detail.
2. Please use this space to describe other outputs, impacts, or influences related to the Center's progress and achievement during the current reporting period that may not have been captured in another section of the report. (optional)

## X. BUDGET

1. Current Award Year. Provide a three-column summary budget table (provided below) which reflects total NSF funding for the *whole* Center for the current award year using NSF Form 1030. This budget should include **only NSF STC core funds**. Separate, additional sheets for individual sites must also accompany the summary budget. Use row headings from NSF Form 1030 (10/97) and the following three column headings: (a) total award; (b) actual expenditures; and (c) estimates of projected expenditures for the current award year.

	Total Award	Actual Expenditure	Estimates of Projected Expenditures
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR			
A. SENIOR PERSONNEL: PI/PD, Co-PIs, Faculty and Other Senior Associates List each separately with name and title. (A.7. Show number in brackets)			
1.			
2.			
3.			
4.			
5.			
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)			
7. ( ) TOTAL SENIOR PERSONNEL (1-6)			
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)			
1. ( ) POSTDOCTORAL ASSOCIATES			
2. ( ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)			
3. ( ) GRADUATE STUDENTS			
4. ( ) UNDERGRADUATE STUDENTS			
5. ( ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)			
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)			
7. ( ) TOTAL SENIOR PERSONNEL (1-6)			
TOTAL SALARIES AND WAGES (A + B)			
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)			
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)			
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)			
TOTAL EQUIPMENT			
E. TRAVEL			
1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)			
2. FOREIGN			
F. PARTICIPANT SUPPORT			
1. STIPENDS			
2. TRAVEL			
3. SUBSISTENCE			
4. OTHER			
G. OTHER DIRECT COSTS			
1. MATERIALS AND SUPPLIES			
2. PUBLICATION/DOCUMENTATION/DISSEMINATION			
3. CONSULTANT SERVICES			
4. COMPUTER SERVICES			



5. SUBAWARDS			
6. OTHER			
TOTAL OTHER DIRECT COSTS			
H. TOTAL DIRECT COSTS (A THROUGH G)			
I. INDIRECT COSTS (F&A) (SPECIFY RATE AND BASE)			
TOTAL INDIRECT COSTS (F&A)			
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)			
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECT SEE GPG II.D.7.j.)			
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)			
M. COST SHARING: PROPOSED LEVEL \$			

2. Unobligated funds. Provide a statement of funds estimated to remain unobligated at the end of the current award year, and plans for use.

3. Requested Award Year. Provide a proposed total budget, and individual budgets for each subcontract, for the requested award year using NSF Form 1030 (10/97) provided below. Please note that signatures are required. This will require that signed budgets be scanned into the Word file as part of the STC Annual Report. See scanning instructions below, under "Very Important Scanning Information."



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### SUMMARY PROPOSAL BUDGET

ORGANIZATION				PROPOSAL NO.		DURATION (MONTHS)		
						Proposed	Granted	
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR				AWARD NO.				
A. SENIOR PERSONNEL: PI/PD, Co-PIs, Faculty and Other Senior Associates List each separately with name and title. (A.7. Show number in brackets)				NSF-Funded Person-months			Funds Requested By Proposer	Funds Granted by NSF (If Different)
				CAL	ACAD	SUMR		
1.							\$	\$
2.								
3.								
4.								
5.								
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)								
7. ( ) TOTAL SENIOR PERSONNEL (1-6)								
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)								
1. ( ) POSTDOCTORAL ASSOCIATES								
2. ( ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)								
3. ( ) GRADUATE STUDENTS								
4. ( ) UNDERGRADUATE STUDENTS								
5. ( ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)								
6. ( ) OTHER								
TOTAL SALARIES AND WAGES (A + B)								
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)								

\*SIGNATURES REQUIRED ONLY FOR REVISED BUDGET (GPG III.C)

4. Center Support from All Sources. Provide a table listing the annual levels of support (or estimated dollar equivalent with brief explanation) for the Center for the current award year and for the requested award year for the categories listed below. Examples of support might include cash support, instrumentation donations and discounts, supplies, construction (amortized annual cost), renovation, salaries, affiliate fees, user fees, and fellowships. University cost sharing should be included. Only include funding that goes directly to the Center or is managed primarily by the Center.

Award Source	Current Award Year		Requested Award Year	
	Cash (\$)	In-kind	Cash (\$)	In-kind
NSF-STC Core funds				
Other NSF				
Other Federal Agencies				
State Government				
Local Government				
Industry				
University				
International				
Private Foundations				
Other				
TOTAL				

5. Breakdown of Other NSF Funding. The total amount should equal the amount listed in Other NSF in the above table.

Funding Source	Current Award Year		Requested Award Year	
	Cash (\$)	In-kind	Cash (\$)	In-kind
STC underrepresented groups supplemental funds				
STC international supplemental funds				
NSF Directorate/Office Specify _____				
NSF Directorate/Office Specify _____				
Add rows as necessary				
TOTAL				

6. Additional PI Support from All Sources. Provide a table listing additional annual levels of support (or estimated dollar equivalent with brief explanation), not included in Section 4 above, awarded to Center PIs for the current award year and for the requested award year for the categories listed below.

Award Source	Current Award Year		Requested Award Year	
	Cash (\$)	In-kind	Cash (\$)	In-kind
NSF				
Other Federal Agencies				
State Government				
Local Government				
Industry				
University				
International				
Private Foundations				
Other				
TOTAL				

### Attachments

[Appendix A](#): Biographical Information of New Faculty

[Appendix B](#): Center Organizational Chart

[Appendix C](#): Minutes of External Advisory Committee Meetings

[Appendix D](#): Media Publicity Materials (if any)

### VERY IMPORTANT SCANNING INFORMATION:

#### ☐ Size of Scanned Document

Once your document is scanned and converted to PDF format, open the file using Adobe

Reader. Look at the bottom of the document and you will see the file size. It should be 8.5 x 11. If it is something other than 8.5 x 11 (even if it is close), your document may not be able to be printed at NSF. You need to rescan the document and make sure the file is 8.5 x 11. Some scanners allow you to set the output size; otherwise read the instructions in the scanner's manual OR if you use Adobe Distiller to convert your files to pdf,

If you use Distiller 3.0: Open Distiller and go to the "Distiller" Menu and select "JobOptions". Under the "General" tab make sure under "Device Settings", "Default Page Size", Width is 8.5 and Height is 11.0 INCHES.

If you use Distiller 4.0: Make sure you have downloaded the FastLane JobOptions (<https://www.fastlane.nsf.gov/a1/pdfcreat.htm> and scroll to Joboptions) Open Distiller. Go to the "Settings" Menu and choose "JobOptions". Under the "Advanced" tab make sure under "Default Page Size", Width is 8.5 and Height is 11.0 and Units is INCHES.

☐ Orientation of file

Please remember to keep the pages of your file in portrait (8.5 x 11) orientation. NSF has experienced problems with files in landscape (11 x 8.5) orientation. These problems occur more often when you have various orientation combinations within one file.

☐ Resolution

Do not scan at the highest resolution. In most cases, this will cause your files to become very large. NSF is only concerned with being able to read the document. The file does not need to be in color. Some scanned files at a lower resolution may look "fuzzy," but as long as they are readable, NSF will be satisfied. The larger the file, the longer it will take to transfer the file over the Internet; and you may not even be able to upload the file into FastLane! Moreover, if a file is very large, it will take longer to open the proposal in FastLane, causing the Internet to "time out" before the proposal can be opened.

☐ Adobe Photoshop Hints

If you scan your documents into Adobe Photoshop (Illustrator and Framemaker also apply), you still need to convert them to PDF files using Adobe Distiller. The PDF output from Photoshop (Photoshop PDF \*.pdf) is not the same output you achieve when using Distiller- even though both products are made by Adobe. (The Photoshop PDF uses PDF Writer which does not work with FastLane.) Please save your Photoshop file as "Photoshop EPS" (.EPS) and then use Distiller to convert to PDF.

If you do use Adobe Photoshop, make sure your document is not inverted (black background and white text). If the file is inverted, click on the "Image" menu and select "Adjust" and then "Invert."

☐ FastLane Blocked PDF Producers

FastLane cannot currently accept PDF files from the following document producers:

Canvas/Deneba PDF filter  
Dvipdf(m)  
FrameMaker  
GhostScript versions prior to 6.5  
Hewlett-Packard Intelligent Scanners  
PDFWriter  
PhotoShop  
PStill

While the errors vary for each producer, the root issue is that PDF files created by these producers, while appearing fine as standalone documents, have one of the following problems:

- 1.They cannot be easily concatenated with PDF files created by other producers.
- 2.They have problems with they manner in which they embed fonts into PDF documents

Please see the following FastLane web site for more information:

<https://www.fastlane.nsf.gov/a1/PitstopBlockedPDF.html>

☐ Do Not scan and save as TIFF

Do not save your file as TIFF. Sometimes TIFF files produce an error message and FastLane is unable to read the file. TIFF files usually include an EOFB (end of data) command that indicates where each file's image information stops. Some applications insert the EOFB command before the last line of the file when they create TIFF files. For example, if the TIFF file contains 4400 lines, the application may insert the command at line 4368. Acrobat viewers will return an error message when they read an EOFB command before the actual last line of a TIFF file. Photoshop creates TIFF files with an EOFB command on the last line of the file so that Acrobat viewers can open these files without error.

☐ ALWAYS PREVIEW

Preview your scanned document to make sure no characters were inserted into the document. This happens when you scan using OCR technology.

## ***FASTLANE INSTRUCTIONS CONTINUED***

### **Check Completeness**

This function will run an automatic check of your report and let you know of any information you have left out that is necessary to a minimally complete report. The system normally will not allow you to submit an incomplete report when a report is required.

### **Review and Submit**

This function will allow you to review a "printout" of your report, just as it will go to your program officer, and perhaps to reviewers. If you are satisfied, it will enable you to formally submit the report to NSF. When you submit, a read-only copy of your working record will be entered into the NSF database. Your original working record will remain, to be added to or changed in subsequent reports.

## ***RIGHT BOX – Section III – Other Functions***

These functions will take you to the screens where you can review basic facts and contacts pertaining to your award, you and the other investigators, your home organization, and your NSF contacts. If you find any of this information incorrect, you can let NSF know through these screens what needs revision.

### **Review Facts and Contacts**

This feature allows you to view basic facts about your award and to make revisions to the award data displayed if needed. This screen does not allow for updates/revisions to PI information. This is done in the Proposal Preparation portion of FastLane.

### **Review Past Submissions**

Allows you to view and print hardcopies of past submissions

### **Assign or Change PIN**

Allows you to assign or change the 5 character Information Number award. Another FastLane user to whom you give this "Award Pin" can use it to gain entry and make entries into the report on your project.

### **Work on Another Award**

This function will take you back to the login screen for the "Project Reports System".

### ***GETTING HELP WITH FASTLANE***

You may send technical FastLane questions and comments to the FastLane Help Desk using the "Comments on the Project Reporting System" at the "Project System Control" screen or "comments" feature on each FastLane screen. You can also contact the FastLane Help Desk by sending an e-mail to [fastlane@nsf.gov](mailto:fastlane@nsf.gov) or calling (703) 292-8142 or 1-800-673-6188.

For questions about the content of your report and all other non-FastLane questions, please contact the appropriate NSF program office. If you do not know who to contact, that information is available from the FastLane homepage at NSF Contacts.

# Definitions and Examples

## **Research**

Research refers to scholarly or scientific investigation conducted with the objective of increasing our knowledge about a phenomenon. The term includes the theoretical, experimental or empirical activities, and simulations, conducted by the scientists, engineers and technical support staff of the STC.

## **Education**<sup>1</sup>

Education, or more specifically “science, math, engineering and technology education,” includes those activities performed by the STC faculty, staff and students with the objective of increasing the knowledge and understanding of science and engineering among students or other audiences. These audiences may include undergraduate, graduate and post doctoral students, or kindergarten, elementary, secondary students and the general public. Educational activities can take many different forms, including but not limited to, coursework, REU, curriculum development, internships, science fairs, collaborations with teachers in pre-college education, museum exhibit, Web pages, development of text books, software, science kits, as well as special programs for underrepresented groups or the larger community.

## **Knowledge Transfer**

Knowledge transfer refers to the exchange of scientific information, in either direction, between the STC and industry, Federal or state and independent agencies and laboratories, with the objective of applying the knowledge to the operations or activities of the institution receiving the information. The concept is similar to technology transfer, but broader in scope. Knowledge transfer may be accomplished in various ways, including the involvement of industrial or other non-academic specialists on the STC advisory committee, partnership with these institutions, faculty consulting relationships with industry, visiting instructorships by industrial scientists at the STC, etc. (Note: knowledge transfer does not include those activities included under the education component of the STC; Continuing Education for Technical Professionals are an exception and belong under this category)

## **Outputs**

Outputs refer to the immediate, observable products of research activities on the individual and/or institution, such as publications or patent submissions, licenses, degrees conferred, resulting appointments, etc.

## **Outcomes**

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<sup>1</sup> We distinguish the term education from outreach. Outreach involves the active efforts undertaken by the staff of the STC to make other institutions and individuals aware of the activities of the STC, and to inform them as to how they might participate in or cooperate with the STC. As such, outreach is a process or an activity, independent of subject matter and may apply to research, education and knowledge transfer equally. Outreach may be directed toward: scientists within or beyond the universities involved in the STC (including international institutions); institutions and teachers who provide instruction in science or engineering (whether conducted in elementary or secondary education systems, institutions of higher education, museums, or other learning settings), or private firms, Federal, State or independent laboratories.



Outcomes refer to the results for which a program is designed to contribute, such as strengthened collaborative research, effective transfer of scientific principles and methods, increased participation of .

## **Impacts**

Impacts refer to the total consequences of the program such as influence of research activities on science and technology advancement, or creation of a stronger science and engineering workforce. Impacts are typically longer-term and larger scale effects that relate to project outcomes (and may have been the result of several causal factors).

## **Performance and Management Indicators**

These are discussed in Section II.D.2 of the Center Cooperative Agreement.

## **Publications**

Publications are journal articles, text books, monographs, chapters in books, conference proceedings, technical reports, abstracts or other formal written documents, both print and electronic.

## **Peer Reviewed Publications**

Peer reviewed publications are those which prior to publication have undergone critical review by other scientists who work in the same area of research and who are able to evaluate the reported techniques, logic, and the relationship to other work in the field.

## **Center Publications**

Center publications are those publications, [peer reviewed](#) or otherwise, that have at least one Center faculty, student or staff as author or co-author, and that report on work on one of the Center's declared thrust areas or educational or knowledge transfer activities. In order for a publication to be attributable to a Center, it must acknowledge Center support prominently.

## **Award Type**

Award may be classified into general categories that provide descriptive information about the award.

*Education* awards are related to teaching, educational scholarship, or mentoring/outreach.

*Fellowships* are grants made to fellows by universities or other organizations.

*Industry awards* are given by a company or professional organization for work/accomplishments that are relevant to a particular industry.

*Scientific* awards include any accomplishment or honor that is research- or science-related

*Other* awards do not fall into the previous categories.

### Participant

A Center participant is an individual who spends 160 hours or more over a twelve month period at the Center.

### Affiliate

A Center affiliate is an individual affiliated with the Center that does not meet the 160 hour requirement for Center participants.

### **External Participant**

An external *institutional* participant refers to an outside institution or organization that is involved with Center activities and events for more than 160 hours over a twelve month period but has no contractual relationship (i.e. does not receive funding from the NSF STC award.)

An external *individual* participant refers to an outside individual (teacher or student, or community member) who is involved with Center activities and events for more than 160 hours over a twelve month period but has no contractual relationship (i.e. does not receive funding from the NSF STC award.)

### Center Faculty or Equivalent

Center faculty are defined as faculty at the main or participating universities, colleges, or community colleges, who devote 160 hours or more over a twelve month period of their professional activities to one or more of the research thrust areas of the Center or to tasks related to the Center's education or knowledge transfer missions.

### Center Graduate Student

Center graduate students are defined as students enrolled in a graduate degree program at one of the Center's participating universities, and colleges, who devote a 160 hours or more over a period of 12 months of their research and educational activities to one or more of the research thrust areas at the Center under the supervision of a Center faculty or staff member. This category includes both students who are and those are not financially supported by the Center so long as they meet the other criteria.

### Center Undergraduate Student

Center undergraduate students are defined as students enrolled in an undergraduate degree program at one of the Center's participating universities, colleges, or community colleges, who are either doing research in one or more of the research thrust areas at the Center under the supervision of a Center faculty or staff member or doing a major or minor around one or more of the research thrust areas at the Center under the advisorship of a Center faculty or staff member. This category includes both students who are and those are not financially supported by the Center so long as they meet the other criteria.

## **Underrepresented Minorities**

Underrepresented minorities are people whose representation in science and engineering is less than their representation in the population: Blacks, Hispanics, and Native Americans, including American Indians, Alaskan Natives and Pacific Islanders.

## **Knowledge Transfer Activities**

Knowledge transfer activities may be accomplished in various ways, including the involvement of industrial or other non-academic specialists on the STC advisory committee, partnership with institutions, faculty consulting relationships with industry, visiting instructorships by industrial scientists at the STC, etc. The following illustrate various approaches that a Center might undertake.

*Domestic Research Collaboration*, e.g., collaboration with individual companies, industrial consortia, Federal laboratories, independent laboratories, other universities, or other scientific organizations.

*International Research Collaboration*, e.g., collaboration with individual foreign companies, international industrial consortia, foreign government laboratories, foreign independent laboratories, foreign universities, or other international scientific organizations.

*Industrial Development Activities*, e.g., creation of spin-off companies, participation in state industrial development initiatives, and various types of cooperative agreements.

*Leadership Exchanges*, e.g., industrial representation on the Center's Advisory Committee, participation of Center faculty/staff on industrial boards, advisory committees, Federal laboratory advisory associations, and international organization advisory associations.

*Personnel Exchanges*, e.g., Center faculty/staff working in industrial laboratories, industrial staff working in Center labs, Center faculty/staff working in Federal labs, or Federal Laboratory staff working in Center labs.

*Continuing Education for Technical Professionals*, e.g., seminars or lecture series on current research, short courses or workshops, and semester length courses.

*Professional Activities*, e.g., participation in the development of industrial or technical standards, presentations at professional meetings, and representation at industrial conventions or trade shows.

*Professional Publications and Information Dissemination*, e.g., articles in scientific journals, Center working papers series, Center technical reports, regular Center newsletter, books and monographs, and Internet professional activities.

*Public Policy*, e.g., participation in advisory committees to government.

## Outputs of Knowledge Transfer Activities

Outputs refer to application-oriented products created by the Center. Examples of outputs are patents, (but not patent licensure), distribution of center developed software, center-developed or produced research media (e.g., cell lines, reagents, or isotopes), or distribution of center-produced research hardware.

## Outcomes of Knowledge Transfer Activities

Outcomes refer to actual application of Center products in industry, federal laboratories, or elsewhere. Outcomes could include licenses based on Center patents or other work. Outcomes also include spin-off or start-up companies that emerged from Center research (please list years started when listing names of companies).

## **Educational Activities**

Educational activities may be directed toward various populations, and have a variety of objectives. Among the particular groups are graduate students, undergraduate students, K-12 faculty and students, and community institutions. These populations, in turn, may be interested in scientific career preparation, general knowledge of scientific principles, or in more general educational objectives.

Internal educational activities are oriented toward graduate and undergraduate education and can take many different forms. These may be summarized as follows:

*Graduate Education*, e.g., new required graduate courses, new elective graduate courses, new graduate degree programs, graduate student internships in industrial labs, student internships in Federal laboratories or other collaborating laboratories in other universities or in foreign laboratories, and mentoring programs

*Undergraduate Education*, e.g., new required major undergraduate courses, new elective major undergraduate courses, new general education courses for non-majors, new undergraduate degree programs, NSF Research Experiences for Undergraduates program, and other mentoring programs

A Center might develop new curricula or course.<sup>2</sup> A Center might support an internship program such as the Research Experiences for Undergraduates program. A Center might develop and operate a Website, or develop software, or science kits. Some Centers develop special programs for underrepresented groups or the larger community. Internal activities could also be oriented toward minority programs, special workshops and symposia, general education courses for non-majors, graduate student internships in Federal, industrial and foreign laboratories, and undergraduate and graduate mentoring program.

A program's goals can also be diverse, including improving: recruitment for technical careers, recruitment to a center's specialty, retention in scientific training pathway, and providing general support for academic achievement.

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<sup>2</sup> . A Center course is one that is created by Center faculty as part of the Center's research or educational thrust and is taught primarily by Center faculty.

External educational activities are oriented toward K-12 students or teachers, professionals in the field, and the general population.

The mechanisms can be quite diverse, and include in-service courses, workshops and symposia for K-12 teachers, pre-service teacher training, research experiences in laboratories and the field for teachers. A program might facilitate the use of STC equipment by K-12 teachers and students. The variety of categories include:

*Collaboration with Teachers* (in-service courses, workshops, and symposia for K-12 teachers, preservice teacher training, research experiences (lab) for teachers, research experiences (field) for teachers, long-term support for professional development.

*Creation of Educational Tools for Teachers and Students*, e.g., new curricula, science kits, software, videos, use of STC equipment by K-12 teachers

*Development of Student Programs*, e.g., interactive programs and field trips, science fairs, research experiences for high school students, talks from prominent scientists, or mentoring program.

*Collaboration on K-12 Education Projects* e.g., with statewide, regional, rural and urban educational initiatives, local education improvement projects, other universities, local/regional science education associations, and school districts.

*Outreach to Underrepresented Groups*, e.g., targeting graduate students, undergraduate students, high school students, middle school students, elementary school students.

*Work with larger Science Education Initiatives*. e.g., Other examples are statewide, urban and rural systemic initiatives, local systemic improvement projects, liaisons with other universities, local/regional science education associations and school districts.

*Community Initiatives* e.g., museum exhibits or shows, planetarium exhibits or shows, aquarium exhibits or shows, zoo exhibits or shows, public lectures, publications, online information, and radio/TV programming.

### **Professional Development Activities**

Examples of professional development include student participation in conferences, [internships](#), entrepreneurship courses or other intellectual development activities outside of the students' main research area.

### **Intern**

A *student* intern is a Center graduate or undergraduate student assigned to companies, national laboratories or other appropriate external work-settings for an on-site work experience of at least one month duration. A *professional* intern is an individual from an outside organization who works onsite with or under the supervision of a Center faculty member for one or more visits, of which at least 160 hours, within a given academic year.

### **Outcomes and Impacts of Internal Educational Activities**

For example, influence of internal activities on curricula through creating new courses, modifying existing curricula by including STC research, creating new text books based on STC research, new degree programs, or course modules or instructional CDs.

### **Outcomes and Impacts of External Educational Activities**

For example, increased interest or understanding of external participants in science and technology, improved performance in classes (teaching or learning), increased interest in pursuing educational opportunities in science and technology, etc.

### **External Partnership Activities**

Examples of partnerships may include participation in research networks, co-sponsoring research, conferences, industry consortia, sabbaticals, personnel exchanges, joint publications class work, minority-serving institution partnerships, industrial internships, etc. These do NOT include the academic partners which form the core of the Center's institutional participants.

### **Outcomes and Impacts of Partnerships Activities**

Examples of outcomes for the Center may include: improvements in methods, models, experimentation, or theory, or improvement in the timeliness of research, placement of Center graduates etc. Positive outcomes for partner include cost-savings, improved quality or timeliness of research or product development, development of human capital, etc.