

QUESTIONNAIRE COVER LETTER
For REU Undergraduate Students

Subject line: NSF Research Experiences for Undergraduates (REU) Questionnaire

Dear [insert first name],

We are conducting a study for the National Science Foundation (NSF) on its Research Experiences for Undergraduates (REU) Program and would appreciate your participation. Your name was provided to us by [insert PI name] as someone who participated in the REU Program and received an NSF stipend during [insert time period].

As thanks for your participation, we will send you a \$20 [insert online retailer] gift certificate after we receive your completed questionnaire.

Our survey questionnaire can be accessed by clicking on this link:

[insert link to questionnaire—respondent's survey ID number will be imbedded]

If you did not participate in the REU Program during that time period but did do so [insert alternate time period], please reply to this e-mail with “[insert alternate time period]” in the subject line and we will redirect you to the correct questionnaire.

If you did not participate in the REU Program at all during Summer 2006 through Spring 2007, please reply to this e-mail with “NOT REU” in the subject line, and we will remove your name from our survey sample.

All your responses will be strictly confidential and will be used only in combination with those from other respondents. The ID number included in the survey URL allows us to cross your name off our contact list once we have received your questionnaire and to send you a summary of the study results.

For more information about our study, please see the overview below. If you have any questions or problems with the survey, simply reply to this e-mail.

Please complete and submit the questionnaire as soon as possible. Your participation is important to the success of this study.

Sincerely yours,

Mary P. Hancock
Study Director
SRI International
1100 Wilson Blvd. Suite 2800
Arlington, VA 22209

STUDY OVERVIEW

What is the objective of this study?

The objective of the study is to obtain in-depth information about the activities, outcomes, and impacts of the NSF Directorate of Engineering (ENG) Research Experiences for Undergraduates (REU) Program from the perspectives of the faculty and undergraduate student participants. It is anticipated that the study results will help NSF better understand the components and characteristics of effective REUs and thus will help provide direction to ENG's REU program officers in their reviews of REU proposals and in the advice they give to REU PIs. The study is NOT an evaluation of outcomes from individual NSF awards or the people involved with them.

How was I selected for this study?

All undergraduate students, faculty mentors, and principal investigators (PIs) who participated in NSF ENG REU awards during summer 2006 through spring 2007 are included in this study. The PIs of those awards were contacted earlier this year and provided us with the names and contact information of undergraduate students who engaged in REU activities during FY 2006, as well as faculty who mentored/supervised those students.

Can I get a copy of the study results?

We will send all survey participants a brief summary of the survey results later this year. The study report will be available on SRI's Web site at <http://www.sri.com:8000/policy/csted/reports/university>.

Who funded the study and who is involved?

The project is funded by the National Science Foundation and conducted by researchers from SRI International (formerly Stanford Research Institute) <http://www.sri.com/policy>.

Privacy Notice

Information from this survey will be retained by the National Science Foundation (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). 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 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.

Where can I find more information about the project?

Contact the SRI study director, Mary Hancock (360-380-4126, mary.hancock@sri.com) or the NSF project officer, Joanne Culbertson (jculbert@nsf.gov, 703-292-4602).

**NATIONAL SCIENCE FOUNDATION DIRECTORATE FOR ENGINEERING
RESEARCH EXPERIENCES FOR UNDERGRADUATES (REU)
PROGRAM**

Summer 2006 Student Participant Survey

Public Burden

Submission of the requested information is voluntary. Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is _____. Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Suzanne Plimpton, Reports Clearance Officer for OMB Collection 3145-0121 (ENG REU), Facilities and Operations Branch, Division of Administrative Services, National Science Foundation, 4201 Wilson Blvd., Suite 295, Arlington, VA 22230.

Your responses to this questionnaire are strictly confidential.

Factors in Your Decision to Do Research Last Summer

- . How important was each of the following in your decision to do research last summer? (If an item does not apply to you, please circle the “not important” category.)
(PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	Not Important	Somewhat Important	Fairly Important	Extremely Important
a. I wanted to know if engineering was for me.	1	2	3	4
b. I wanted to learn more about what it's like to be a researcher.	1	2	3	4
c. I wanted to know if going to graduate school in engineering was for me.	1	2	3	4
d. I wanted hands-on research experiences to reinforce what I learned in class.	1	2	3	4
e. Doing research was more appealing than other kinds of jobs.	1	2	3	4
f. I needed to fulfill my school's/my scholarship's requirements for research.	1	2	3	4
g. I thought it would help me get into graduate school or get a job.	1	2	3	4
h. I needed/wanted the academic credit I could get	1	2	3	4

from doing research.				
i. I thought it would be fun.	1	2	3	4

- How important was each of the following in your decision to apply to participate in the specific research project that you were in last summer?
(If an item does not apply to you, please circle the “not important” category.)
(PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	Not Important	Somewhat Important	Fairly Important	Extremely Important
a. I wanted to know if this field of research was for me.	1	2	3	4
b. I love this field of research and wanted to work in it.	1	2	3	4
c. The research project(s) sounded interesting.	1	2	3	4
d. I wanted to do something different than what I’ve done before.	1	2	3	4
e. Someone I knew recommended it.	1	2	3	4
f. Personal interaction with the program coordinator, director, or other faculty member or researcher.	1	2	3	4
g. The reputation of the host institution	1	2	3	4
h. The amount of the stipend and support package (housing, meals, etc.).	1	2	3	4
i. The living arrangements for this program.	1	2	3	4
j. The social/cultural activities for this program.	1	2	3	4
k. I wanted to be close to home.	1	2	3	4
l. I wanted to be far from home.	1	2	3	4
m. Geographic location of the project (not the distance from home <i>per se</i>) was appealing.	1	2	3	4
n. This was the first program/project that accepted me for the summer.	1	2	3	4
o. This was the only program/project that accepted me for the summer.	1	2	3	4

- Did you apply to any **other** research or intern programs/projects for summer 2006?
(PLEASE CIRCLE ONE NUMBER)

Yes..... 1 → **PLEASE CONTINUE**
No..... 2 → **PLEASE SKIP TO QUESTION 5**

- To how many research or intern programs/projects did you apply, including the program you participated in last summer?

(Please enter your best estimate) _____

Location of Your Research Activities Last Summer

- . Did the research that you participated in last summer take place entirely in the United States, or did it take place at least in part in another country? **(PLEASE CIRCLE ONE NUMBER)**
 - Entirely in the United States..... 1
 - At least part was in another country.... 2

- . Where did the research that you participated in last summer take place? **(PLEASE CIRCLE ONE OR MORE NUMBERS)**
 - At the college I attended classes during Spring 2006..... 1
 - At another college..... 2
 - At a non-academic institution..... 3

Last Summer's Research Activities

- . Did you receive academic credit for your research activities last summer? **(PLEASE CIRCLE ONE NUMBER)**
 - Yes..... 1
 - No..... 2

- . Did you receive pay (for example, a stipend) for your research activities last summer? **(PLEASE CIRCLE ONE NUMBER)**
 - Yes..... 1
 - No..... 2

- . When you started last summer's research program/project, how well prepared did you feel you were for the work you were asked to do? **(PLEASE CIRCLE ONE NUMBER)**
 - Not at all prepared..... 1
 - Somewhat prepared..... 2
 - Fairly well prepared..... 3
 - Extremely well prepared..... 4

- . **In total**, what was the average number of hours per week that you spent engaged in **research-related activities** last summer? **(PLEASE ENTER YOUR BEST ESTIMATE)**
_____ hours per week

- During your experiences last summer, what was the average number of hours per week that you spent engaged in **research-related activities with each of the following types of individuals?**
(PLEASE CIRCLE YOUR BEST ESTIMATE IN EACH ROW)

NOTES: IF YOUR RESEARCH WAS IN A NON-ACADEMIC INSTITUTION, PLEASE CONSIDER THE SENIOR RESEARCHER(S) YOU WORKED WITH TO BE FACULTY.

		Average number of hours per week:						
		No Time With This Person	Less Than 1 Hour	1 Hour Up to 5 Hours	5 Hours Up to 10 Hours	10 Hours Up to 20 Hours	20 Hours or More	Have No Idea
a.	Your faculty mentor(s)	1	2	3	4	5	6	9
b.	Postdocs/ grad students	1	2	3	4	5	6	9
c.	Other undergraduates	1	2	3	4	5	6	9
d.	K-12 grade teachers	1	2	3	4	5	6	9

- Overall, how did you feel about the amount of contact you had with each of the following last summer?
(PLEASE CIRCLE ONE NUMBER IN EACH ROW)

		Too Little Contact	About the Right Amount	Too Much Contact	Doesn't Apply
a.	Your faculty mentor(s)	1	2	3	9
b.	Graduate students/post-docs	1	2	3	9
c.	Other undergraduates who were doing research	1	2	3	9
d.	K-12 grade teachers	1	2	3	9

- How many **other** undergraduates, if any, did research last summer with the **same faculty mentor as you?**
(PLEASE ENTER YOUR BEST ESTIMATE)

Number: _____ Have no idea.....99

- Was your faculty mentor male or female? (PLEASE CIRCLE ONE NUMBER)

Male..... 1

Female..... 2

- Was your faculty mentor's race/ethnicity the same as yours? (PLEASE CIRCLE ONE NUMBER)

Yes..... 1

No..... 2

Not sure..... 9

- When your research activities began last summer, did you have a choice of projects to work on?

Yes..... 1

No..... 2

- Which one of the following best describes your involvement in designing your research project last summer? (If you had more than one research project, please answer for the one you worked on the most.) **(PLEASE CIRCLE ONE NUMBER)**

Doesn't apply: Did not have my own research project..... 0

The research project was designed by someone else, without input from me..... 1

Someone else had primary responsibility for designing my research project but I provided input..... 2

I had primary responsibility for designing the research project that I worked on..... 3

Other (*please specify*):..... 4

- Generally speaking**, who made each of the following kinds of decisions last summer?
(PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	I Did	Faculty Mentor/ Grad Student and I Together	Faculty Mentor/ Grad Student
a. What research techniques/materials were used	1	2	3
b. What to do next (for example, following interim results)	1	2	3

19. Which of the following did you do as part of your research experiences last summer?
(PLEASE CIRCLE ONE OR MORE NUMBERS)

- Wrote a proposal describing the research I planned to do..... 1
- Collected and/or analyzed data or information to try to answer a research question..... 2
- Did little or nothing that seemed to me to be real research..... 3
- Gained increasing independence over the course of the summer..... 4
- Was able to complete my research project (either during the summer or later)..... 5
- Mentored other students conducting research or led a student research team..... 6
- Understood how my work contributed to the “bigger picture” of research in this field..... 7
- Attended lectures/seminars on research ethics..... 8
- Went on research-related field trip(s) (to other labs, universities, industry, etc.)..... 9
- Attended student conference(s) that included students from multiple colleges..... 10
- Attended professional conference(s) (conferences not specifically for students)..... 11
- Received training in written or oral communication skills 12
- Prepared/presented a poster presentation describing my research and results..... 13
- Prepared a final written research report describing my research and results..... 14
- Delivered an oral presentation describing my research and results..... 15
- Authored or co-authored a paper that has been or will be submitted for publication in a professional journal..... 16

20. To what extent, if at all, do you think your research experiences last summer **increased** each of the following? (PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	How Much Each Increased:				
	Not At All	Some-what	A Fair Amount	A Great Deal	Have No Idea
<i>Your understanding of...</i>					
a. ... how to formulate a research question	1	2	3	4	9
b. ... how to plan a research project	1	2	3	4	9
c. ... how to conduct a research project	1	2	3	4	9
d. ...how to deal with setbacks, "negative results," etc.	1	2	3	4	9
e. ...how engineering knowledge is built	1	2	3	4	9
f. ...the nature of the job of a researcher	1	2	3	4	9
<i>Your skills/abilities in..</i>					
g. ...working collaboratively with others	1	2	3	4	9
h. ...working independently	1	2	3	4	9
i. ...preparing written research reports, papers, or posters	1	2	3	4	9
j. ...delivering oral research presentations	1	2	3	4	9
<i>Your awareness of...</i>					
k. ...career paths of the faculty in the program (how they got to where they are now)	1	2	3	4	9
l. ...what graduate school is like	1	2	3	4	9
m. ...the variety of engineering fields you could specialize in	1	2	3	4	9
n. ...career options in engineering	1	2	3	4	9
o. ...ethical issues in conducting research	1	2	3	4	9
<i>Your ...</i>					
p. ...confidence in your research skills generally	1	2	3	4	9
q. ...confidence in your ability to succeed in graduate school	1	2	3	4	9
r. ...qualifications for jobs in related fields	1	2	3	4	9

- . How dissatisfied or satisfied were you with each of the following aspects of your research experiences last summer? **(PLEASE CIRCLE ONE NUMBER IN EACH ROW)**

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied	Doesn't Apply
a. The research project(s) you worked on	1	2	3	4	0
b. The amount of involvement you had in selecting or designing your research project(s)	1	2	3	4	0
c. The overall supportiveness of your faculty mentor(s)	1	2	3	4	0
d. The overall supportiveness of your grad student or post-doc mentor(s)	1	2	3	4	0
e. The extent to which you felt you were an integral part of a research team	1	2	3	4	0
f. The adequacy of the technical guidance you received	1	2	3	4	0
g. The independence you had in doing your work	1	2	3	4	0
h. Your living arrangements (housing, meals)	1	2	3	4	0
i. The social/cultural activities	1	2	3	4	0
j. How well organized the program was	1	2	3	4	0
k. The experience as a whole	1	2	3	4	0

- . Which of the following best describe the academic field(s) of your research last summer? **(PLEASE CIRCLE ONE OR MORE NUMBERS)**

- | | |
|---|---|
| Aerospace engineering.....1 | Materials or metallurgy engineering.....11. |
| Agricultural engineering.....2 | Mechanical engineering.....12.. |
| Architectural engineering.....3 | Mining or mineral engineering.....13.. |
| Bioengineering or biomedical engineering.....4 | Nuclear engineering.....14.. |
| Chemical engineering.....5 | Ocean, marine, or naval engineering.....15.. |
| Civil engineering.....6 | Systems engineering.....16.. |
| Computer engineering.....7 | Transportation engineering.....17.. |
| Electrical engineering.....8 | Other engineering.....18.
<i>(please specify below)</i> |
| Environmental engineering.....9 | A non-engineering field.....19..
<i>(please specify below)</i> |
| Industrial or manufacturing engineering.....10..... | |

Please specify “other engineering” or “non-engineering field”:

- . How related was your research last summer to courses in your major that you have taken, either before last summer or since then? **(PLEASE CIRCLE ONE NUMBER)**
 - It was closely related to courses I have taken in my major 1
 - It was somewhat related to courses I have taken in my major..... 2
 - It was unrelated to courses I have taken in my major..... 3
- . Did you continue your summer 2006 research into the academic year, either with the same faculty mentor or with a different mentor? **(PLEASE CIRCLE ONE NUMBER)**
 - Yes, with the same mentor..... 1
 - Yes, but with the different mentor.... 2
 - No..... 3

Other Research-Related Issues

- . When did you first become interested in engineering? **(PLEASE CIRCLE ONE NUMBER)**
 - Doesn't apply to me: I'm really **not** very interested in engineering.... 1
 - I've been interested ever since I was a child..... 2
 - During high school..... 3
 - During college..... 4
 - Don't remember..... 9
- 26. While you were in high school or the summer after you graduated from high school, did you participate in any science or math fairs? **(PLEASE CIRCLE ONE NUMBER)**
 - Yes..... 1
 - No..... 2
- . Were last summer's research activities at the college you are currently attending? **(PLEASE CIRCLE ONE NUMBER)**
 - Yes..... 1 → **PLEASE SKIP TO QUESTION 29**
 - No..... 2 → **PLEASE CONTINUE**
- . Are there any opportunities for undergraduates in your major to do research at the college you attended during Spring 2006? **(PLEASE CIRCLE ONE NUMBER)**
 - Yes..... 1 → **PLEASE CONTINUE**
 - No..... 2 → **PLEASE SKIP TO QUESTION 30**
 - Not sure..... 9 → **PLEASE SKIP TO QUESTION 30**
- 29. At your college, are undergraduates in your major **required** to do hands-on individual research (other than library research)? **(PLEASE CIRCLE ONE NUMBER)**
 - Yes, all in my major are..... 1
 - Only for honors..... 2

No..... 3

Not sure..... 9

30. Please read all the way through the list of activities below and then indicate:

A. **Including the research you did last summer**, which kinds of hands-on research activities you have participated in, either at your high school, your college, or at some other location. **(PLEASE CIRCLE ONE NUMBER IN EACH ROW)**

B. If “yes” on A, for how many months in total you have you done this. **(PLEASE ENTER YOUR BEST ESTIMATE FOR EACH APPLICABLE ITEM)**

A. Have you done this, either in high school or college? (Please do not include an activity in more than one category.)			B. Total number of months you have done this:
	Yes	No	
(1) Summer research, other than intern or co-op program, with some group activities. Undergraduates work one-on-one with professors or other researchers. The focus is full-time individual research, supplemented by regular group meetings and other group activities. Usually some kind of final report or presentation is required at the end.	1	2	Number of months: _____
(2) Summer research, other than intern or co-op program, with few or no group activities. A full-time research project with a professor or researcher. Differs from item (1) in that there are few or no group activities with other undergraduates.	1	2	Number of months: _____
(3) Research with a professor during one or more academic terms, while attending classes.	1	2	Number of months: _____
(4) Intern or co-op program that involved research as its <u>main</u> component. Usually, a company or other organization pays you for working on a research project at its site. Sometimes you receive academic credit at your school for this research. May happen any time of year.	1	2	Number of months: _____
(5) A junior or senior thesis that involves research (other than library research) as its <u>main</u> component	1	2	Number of months: _____

31. At which of the following kinds of organizations have you participated in hands-on research with a teacher, professor, or research engineer or scientist? **(PLEASE CIRCLE ONE OR MORE NUMBERS)**

- My high school..... 1
 - My college/university..... 2
 - Other college or university..... 3
 - Hospital or medical clinic..... 4
 - Non-profit research organization..... 5
 - Government lab/facility..... 6
 - For-profit company..... 7
 - Other organization (*please specify below*)..... 8
-

Effects of Your Undergraduate Research Experiences

32. To what extent has **your interest in a career** in each of the following increased or decreased as a result of **all** the undergraduate research experiences you have had?
(PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	Decreased a Lot	Decreased Somewhat	No Effect	Increased Somewhat	Increased a Lot	Have No Idea
a. Engineering	1	2	3	4	5	9
b. Science	1	2	3	4	5	9
c. Research	1	2	3	4	5	9
d. Teaching	1	2	3	4	5	9
e. College/university	1	2	3	4	5	9
f. Industry	1	2	3	4	5	9

33. A. Before your **first** undergraduate research experience, what was the highest degree you expected to receive?
 B. What is the highest degree you now expect to receive?
 (PLEASE CIRCLE ONE NUMBER IN EACH COLUMN)

	A. Expectations Before First Undergraduate Research Experience	B. Expectations Now
Undecided	01	01
Associate of Arts (AA)	02	02
Bachelor's (BA or BS)	03	03
Master's (MA, MS, or MBA)	04	04
LLB or JD	05	05
PhD	06	06
MD	07	07
MD or PhD (not sure which)	08	08
MD and PhD (both degrees)	09	09
Other (<i>please specify below:</i>) _____	10	10

Your General Academic Experience

34. Which of the following best describe your current major? (PLEASE CIRCLE ONE OR MORE NUMBERS)

Aerospace engineering.....1	Materials or metallurgy engineering.....11..
Agricultural engineering.....2	Mechanical engineering.....12..
Architectural engineering.....3	Mining or mineral engineering.....13..
Bioengineering or biomedical engineering.....4	Nuclear engineering.....14..
Chemical engineering.....5	Ocean, marine, or naval engineering.....15..
Civil engineering.....6	Systems engineering.....16..
Computer engineering.....7	Transportation engineering.....17..
Electrical engineering.....8	Other engineering.....18. <i>(please specify below)</i>
Environmental engineering.....9	A non-engineering field.....19.. <i>(please specify below)</i>
Industrial or manufacturing engineering.....10.....	Do not currently have a major20..

Please specify "other engineering" or "non-engineering field":

35. What is the **full name** and location of the college/university you attended **last Spring (2006)**?

FULL name of your college/university:

City: _____ State: _____

36. What was your cumulative Grade Point Average (GPA) as of the end of Spring 2006?
(PLEASE ENTER YOUR BEST ESTIMATE)

GPA: _____.____ Out of a possible _____.____ Have no idea.....999.....

37. Have you received your bachelor's degree?

Yes..... 1 → **If yes**, in what year? _____

No..... 2

38. Are you currently enrolled in college?

Yes..... 1 → **PLEASE CONTINUE**

No..... 2 → **PLEASE SKIP TO QUESTION 40**

39. What year are you now in college? (PLEASE CIRCLE ONE NUMBER)

Freshman.....1.....

Sophomore.....2.....

Junior.....3.....

Senior (including fifth or sixth year senior).....4.....

Working on a 2nd Bachelor's degree.....5.....

Enrolled as a graduate student.....6.....

Background Information

40. What is your age? _____

41. What is your sex? (PLEASE CIRCLE ONE NUMBER)

Male..... 1

Female..... 2

42. What is your ethnicity? (PLEASE CIRCLE ONE NUMBER)

Hispanic or Latino..... 1

Not Hispanic or Latino... 2

43. What is your race? (PLEASE CIRCLE ONE OR MORE NUMBERS)

- American Indian or Alaskan Native..... 1
- Asian..... 2
- Black or African American..... 3
- Native Hawaiian or Pacific Islander..... 4
- White..... 5

Overview

44. What was the most important thing you learned about yourself as a result of your research experiences last summer?

45. How do you think NSF can improve the Research Experiences for Undergraduates (REU) program?

46. Other comments.

47. We will be conducting a follow-up survey in 2009. To help us locate you at that time, please provide us with the following:

Your current personal (non-school-specific) e-mail address, if you have one:

Person likely to know how to reach you in 2009:

Name: _____

Relationship to you: _____

Mailing address: _____

City: _____ State: _____ ZIP: _____

Phone: _____

E-mail address: _____

Thank you very much for your participation in this study.

As a token of our appreciation, we will send you a \$20 [insert online retailer] gift certificate when we receive your completed questionnaire

If you have questions, please contact Mary Hancock: 360-380-4126,
mary.hancock@sri.com

**NATIONAL SCIENCE FOUNDATION DIRECTORATE FOR ENGINEERING
RESEARCH EXPERIENCES FOR UNDERGRADUATES (REU)
PROGRAM**

Fall 2006-Spring 2007 Student Participant Survey

Public Burden

Submission of the requested information is voluntary. Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is _____. Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Suzanne Plimpton, Reports Clearance Officer for OMB Collection 3145-0121 (ENG REU), Facilities and Operations Branch, Division of Administrative Services, National Science Foundation, 4201 Wilson Blvd., Suite 295, Arlington, VA 22230.

Your responses to this questionnaire are strictly confidential.

1. Are you still participating in the research project with the professor or engineer identified in our e-mail?

(PLEASE CIRCLE ONE NUMBER)

Yes..... 1

No..... 2 → **PLEASE ANSWER THE QUESTIONS BELOW AS IF YOU WERE STILL PARTICIPATING IN THIS RESEARCH.**

2. When did you **begin** working on this research project?

(PLEASE ENTER YOUR BEST ESTIMATE)

Month: _____ Year: _____ Don't remember..... 9999

- . **HAVE YOU RECEIVED ACADEMIC CREDIT FOR WORKING ON THIS RESEARCH PROJECT?**

(please circle one number)

Yes..... 1

No..... 2

4. Have you received pay (for example, a stipend) for working on this research project?

(PLEASE CIRCLE ONE NUMBER)

Yes..... 1

No..... 2

5. Have your research activities in this project taken place entirely in the United States, or have at least some of them taken place in another country? **(PLEASE CIRCLE ONE NUMBER)**
- Entirely in the United States..... 1
- At least some were in another country..... 2

Factors in Your Decision to Do Research

6. How important was each of the following in your decision to do research during the current academic year?

(If an item does not apply to you, please circle the “not important” category.)

(PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	Not Important	Somewhat Important	Fairly Important	Extremely Important
a. I wanted to know if engineering was for me.	1	2	3	4
b. I wanted to learn more about what it’s like to be a researcher.	1	2	3	4
c. I wanted to know if going to grad school in engineering was for me.	1	2	3	4
d. I wanted hands-on research experiences to reinforce what I learned in class	1	2	3	4
e. Doing research was more appealing than other kinds of jobs.	1	2	3	4
f. I needed to fulfill my school’s/my scholarship’s requirements for research.	1	2	3	4
g. I thought it would help me get into graduate school or get a job	1	2	3	4
h. I needed/wanted the academic credit I could get from doing research	1	2	3	4
i. I thought it would be fun.	1	2	3	4

7. How important was each of the following in your decision to apply to/participate in the **specific** research program/project that you are participating in during the current academic year?

(If an item does not apply to you, please circle the “not important” category.)

(PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	Not Important	Somewhat Important	Fairly Important	Extremely Important
a. I wanted to know if this field of research was for me.	1	2	3	4
b. I love this field of research and wanted to work in it.	1	2	3	4
c. The research project(s) sounded interesting.	1	2	3	4
d. I wanted to do something different than what I’ve done before.	1	2	3	4
e. Someone I knew recommended it.	1	2	3	4
f. Personal interaction with my faculty mentor/supervisor	1	2	3	4
g. The amount of the stipend	1	2	3	4

h. This was the only project available for me to work on.	1	2	3	4
---	---	---	---	---

Your Research Activities This Year (Fall 2006 to Date)

8. When you started this research project, how well prepared did you feel you were for the work you were asked to do? **(PLEASE CIRCLE ONE NUMBER)**

Not at all prepared..... 1
 Somewhat prepared..... 2
 Fairly well prepared..... 3
 Extremely well prepared..... 4

9. **In total**, what is the average number of hours per week that you have spent engaged in **research-related activities** this academic year? **(PLEASE ENTER YOUR BEST ESTIMATE)**

_____ hours per week

10. During your research experiences this academic year, what is the average number of hours per week that you have spent engaged in **research-related activities with each of the following types of individuals?**

(PLEASE CIRCLE YOUR BEST ESTIMATE IN EACH ROW)

NOTES: IF YOUR RESEARCH WAS IN A NON-ACADEMIC INSTITUTION, PLEASE CONSIDER THE SENIOR RESEARCHER(S) YOU WORKED WITH TO BE FACULTY.

	Average number of hours per week:						
	No time with this person	Less than 1 hour	1 hour up to 5 hours	5 hours up to 10 hours	10 hours up to 20 hours	20 hours or more	Have no idea
a. Your faculty mentor(s)	1	2	3	4	5	6	9
b. Postdocs/ grad students	1	2	3	4	5	6	9
c. Other undergraduates	1	2	3	4	5	6	9
d. K-12 grade teachers	1	2	3	4	5	6	9

11. Overall, how do you feel about the amount of contact you have had with each of the following this year?

(PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	Too Little Contact	About the Right Amount	Too Much Contact	Doesn't Apply
a. Your faculty mentor(s)	1	2	3	9
b. Your grad student/post-doc mentor(s)	1	2	3	9
c. Other undergraduates who are doing research	1	2	3	9
d. K-12 grade teachers	1	2	3	9

12. How many **other** undergraduates, if any, are currently doing research with the **same faculty mentor as you?**

(PLEASE ENTER YOUR BEST ESTIMATE)

Number: _____ Have no idea.....99

13. Is your faculty mentor male or female? **(PLEASE CIRCLE ONE NUMBER)**

Male..... 1

Female..... 2

14. Is your faculty mentor's race/ethnicity the same as yours? **(PLEASE CIRCLE ONE NUMBER)**

Yes..... 1

No..... 2

Not sure..... 9

15. When you started the research project you are currently working on, did you have a choice of projects to work on?

Yes..... 1

No..... 2

16. Which one of the following best describes your involvement in designing your research project? (If you have had more than one research project this year, please answer for the one you worked on the most.) **(PLEASE CIRCLE ONE NUMBER)**

Doesn't apply: Do not have my own research project..... 0

The research project was designed by someone else, without input from me..... 1

Someone else had primary responsibility for designing my research project but I provided input..... 2

I had primary responsibility for designing the research project that I am working on..... 3

Other (*please specify below*):..... 4

Other involvement in designing your project: _____

17. **Generally speaking**, who has made each of the following kinds of decisions in your research activities this year?

(PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	I Did	Grad Student/ Faculty Mentor and I Together	Grad Student/ Faculty Mentor
a. What research techniques/materials were used	1	2	3
b. What to do next (for example, following interim results)	1	2	3

18. Which of the following have you done as part of your research experiences this year?
(PLEASE CIRCLE ONE OR MORE NUMBERS)

- Wrote a proposal describing the research I planned to do..... 1
- Collected and/or analyzed data or information to try to answer a research question..... 2
- Have done little or nothing that seemed to me to be real research..... 3
- Gained increasing independence over the course of the academic year..... 4
- Will be able to complete my research project (either during this year or later)..... 5
- Mentored other students conducting research or led a student research team..... 6
- Understand how my work contributes to the “bigger picture” of research in this field..... 7
- Attended/will attend lectures/seminars on research ethics..... 8
- Went/will go on research-related field trip(s) (to other labs, universities, industry, etc.)..... 9
- Attended/will attend student conference(s) that include students from multiple colleges..... 10
- Attended/will attend professional conference(s) (conferences not specifically for students) 11
- Received/will receive training in written or oral communication skills..... 12
- Prepared/will prepare a poster presentation describing my research and results..... 13
- Prepared/will prepare a final written research report describing my research and results..... 14
- Delivered/will deliver an oral presentation describing my research and results..... 15
- Authored or co-authored a paper (or will do so) that has been or will be submitted for publication in a professional journal..... 16

19. To what extent, if at all, do you think your research experiences this academic year have **increased** each of the following? (PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	How Much Each Increased:				
	Not At All	Some-what	A Fair Amount	A Great Deal	Have No Idea
Your understanding of...					
a. ... how to formulate a research question	1	2	3	4	9
b. ... how to plan a research project	1	2	3	4	9
c. ... how to conduct a research project	1	2	3	4	9
d. ...how to deal with setbacks, "negative results," etc.	1	2	3	4	9
e. ...how engineering knowledge is built	1	2	3	4	9
f. ...the nature of the job of a researcher	1	2	3	4	9
Your skills/abilities in..					
g. ...working collaboratively with others	1	2	3	4	9
h. ...working independently	1	2	3	4	9
i. ...preparing written research reports, papers, posters	1	2	3	4	9
j. ...delivering oral research presentations	1	2	3	4	9
Your awareness of...					
k. ...career paths of the faculty you work with (how they got to where they are now)	1	2	3	4	9
l. ...what graduate school is like	1	2	3	4	9
m. ...the variety of engineering fields you could specialize in	1	2	3	4	9
n. ...career options in engineering	1	2	3	4	9
o. ...ethical issues in conducting research	1	2	3	4	9
Your ...					
p. ...confidence in your research skills generally	1	2	3	4	9
q. ...confidence in your ability to succeed in graduate school	1	2	3	4	9
r. ...qualifications for jobs in related fields	1	2	3	4	9

20. How dissatisfied or satisfied are you with each of the following aspects of your experiences this academic year?

(PLEASE CIRCLE ONE NUMBER IN EACH ROW)

	Very Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Very Satisfied	Doesn't Apply
a. The research project(s) you have worked on	1	2	3	4	0
b. The amount of involvement you had in selecting/designing your research project(s)	1	2	3	4	0
c. The overall supportiveness of your faculty mentor(s)	1	2	3	4	0
d. The overall supportiveness of your grad student/post-doc mentor(s)	1	2	3	4	0
e. The extent to which you feel you have been an integral part of a research team	1	2	3	4	0
f. The adequacy of the technical guidance you have received	1	2	3	4	0
g. The independence you have had in doing your work	1	2	3	4	0
h. How well organized the research program was	1	2	3	4	0
i. The experience as a whole	1	2	3	4	0

21. Which of the following best describe the academic field(s) of your research this year?

(PLEASE CIRCLE ONE OR MORE NUMBERS)

- | | |
|---|--|
| Aerospace engineering.....1 | Materials or metallurgy engineering.....11. |
| Agricultural engineering.....2 | Mechanical engineering.....12.. |
| Architectural engineering.....3 | Mining or mineral engineering.....13.. |
| Bioengineering or biomedical engineering.....4 | Nuclear engineering.....14.. |
| Chemical engineering.....5 | Ocean, marine, or naval engineering.....15.. |
| Civil engineering.....6 | Systems engineering.....16.. |
| Computer engineering.....7 | Transportation engineering.....17.. |
| Electrical engineering.....8 | Other engineering.....18. |
| Environmental engineering.....9 | <i>(please specify below)</i> |
| Industrial or manufacturing engineering.....10..... | A non-engineering field.....19.. |
| | <i>(please specify below)</i> |

Please specify "other engineering" or "non-engineering field":

22. How related is your research this academic year to courses in your major that you have taken?

(PLEASE CIRCLE ONE NUMBER)

- It was closely related to courses I have taken in my major 1
- It was somewhat related to courses I have taken in my major..... 2
- It was unrelated to courses I have taken in my major..... 3

Other Research-Related Issues

23. When did you first become interested in engineering? (PLEASE CIRCLE ONE NUMBER)

- Doesn't apply to me: I'm really **not** very interested in engineering..... 1
- I've been interested ever since I was a child..... 2
- During high school..... 3
- During college..... 4
- Don't remember..... 5

24. While you were in high school or the summer after you graduated from high school, did you participate in any science or math fairs? (PLEASE CIRCLE ONE NUMBER)

- Yes..... 1
- No..... 2

25. At your college, are undergraduates in your major **required** to do hands-on individual research (other than library research)? (PLEASE CIRCLE ONE NUMBER)

- Yes, all in my major are..... 1
- Only for honors..... 2
- No..... 3
- Not sure..... 9

26. Please read all the way through the list of activities below and then indicate:
- A. **Including the research you are doing this academic year**, which kinds of hands-on research activities you have participated in, either at your high school, your college, or at some other location.
(PLEASE CIRCLE ONE NUMBER IN EACH ROW)
- B. If “yes” on A, for how many months in total you have you done this.
(PLEASE ENTER YOUR BEST ESTIMATE FOR EACH APPLICABLE ITEM)

A. Have you done this, either in high school or college? (Please do not include an activity in more than one category.)			B. Total number of months you have done this:
	Yes	No	
(1) Summer research, other than intern or co-op program, with some group activities. Undergraduates work one-on-one with professors or researchers. The focus is full-time individual research, supplemented by regular group meetings and other group activities. Usually some kind of final report or presentation is required at the end.	1	2	Number of months: _____
(2) Summer research, other than intern or co-op program, with few or no group activities. A full-time research project with a professor or researcher. Differs from item (1) in that there are few or no group activities with other undergraduates.	1	2	Number of months: _____
(3) Research with a professor during one or more academic terms, while attending classes.	1	2	Number of months: _____
(4) Intern or co-op program that involved research as its <u>main</u> component. Usually, a company or other organization pays you for working on a research project at their site. Sometimes you receive academic credit at your school for this research. May happen any time of year.	1	2	Number of months: _____
(5) A junior or senior thesis that involves research (other than library research) as its <u>main</u> component	1	2	Number of months: _____

27. At which of the following kinds of organizations have you participated in hands-on research with a teacher, professor, engineer, or research scientist? (PLEASE CIRCLE ONE OR MORE NUMBERS)

- My high school..... 1
- My college/university..... 2
- Other college or university..... 3
- Hospital or medical clinic..... 4
- Non-profit research organization..... 5
- Government lab/facility..... 6

For-profit company..... 7
Other organization (*please specify below*)..... 8

Effects of Your Undergraduate Research Experiences

28. To what extent has **your interest in a career** in each of the following increased or decreased as a result of **all** the undergraduate research experiences you have had? **(PLEASE CIRCLE ONE NUMBER IN EACH ROW)**

	Decreased a Lot	Decreased Somewhat	No Effect	Increased Somewhat	Increased a Lot	Have No Idea
a. Engineering	1	2	3	4	5	9
b. Science	1	2	3	4	5	9
c. Research	1	2	3	4	5	9
d. Teaching	1	2	3	4	5	9
e. College/university	1	2	3	4	5	9
f. Industry	1	2	3	4	5	9

29. A. Before your **first** undergraduate research experience, what was the highest degree you expected to receive?
 B. What is the highest degree you now expect to receive?
(PLEASE CIRCLE ONE NUMBER IN EACH COLUMN)

	A. Expectations Before First Undergraduate Research Experience	B. Expectations Now
Undecided	01	01
Associate of Arts (AA)	02	02
Bachelor's (BA or BS)	03	03
Master's (MA, MS, or MBA)	04	04
LLB or JD	05	05
PhD	06	06
MD	07	07
MD or PhD (not sure which)	08	08
MD and PhD (both degrees)	09	09
Other (<i>please specify below:</i>) _____	10	10

Your General Academic Experience

30. Which of the following best describe your current major?

(PLEASE CIRCLE ONE OR MORE NUMBERS)

- | | |
|---|--|
| Aerospace engineering.....1 | Materials or metallurgy engineering.....11.. |
| Agricultural engineering.....2 | Mechanical engineering.....12.. |
| Architectural engineering.....3 | Mining or mineral engineering.....13.. |
| Bioengineering or biomedical engineering.....4 | Nuclear engineering.....14.. |
| Chemical engineering.....5 | Ocean, marine, or naval engineering.....15.. |
| Civil engineering.....6 | Systems engineering.....16.. |
| Computer engineering.....7 | Transportation engineering.....17.. |
| Electrical engineering.....8 | Other engineering.....18. |
| | <i>(please specify below)</i> |
| Environmental engineering.....9 | A non-engineering field.....19.. |
| | <i>(please specify below)</i> |
| Industrial or manufacturing engineering.....10..... | Do not currently have a major20.. |

Please specify “other engineering” or “non-engineering field”:

31. Where is the research that you are doing this year taking place?

(PLEASE CIRCLE ONE NUMBER)

- At the college I am currently attending..... 1
- At another college.....2
- At a non-academic institution.....3

32. What is the **full name** and location of the college/university where you are **attending classes**?

FULL name of your college/university:

City: _____ State: _____

33. What was your cumulative Grade Point Average (GPA) as of the start of the Fall 2006 academic term?

(PLEASE ENTER YOUR BEST ESTIMATE)

GPA: _____._____ Out of a possible _____._____ Have no idea.....999.....

34. Have you received your bachelor’s degree?

Yes..... 1 → **If yes**, in what year? _____

No..... 2

35. Are you currently enrolled in college?

Yes..... 1 → **PLEASE CONTINUE**

No..... 2 → **PLEASE SKIP TO QUESTION 37**

36. What year are you now in college? **(PLEASE CIRCLE ONE NUMBER)**

- Freshman.....1.....
- Sophomore.....2.....
- Junior.....3.....
- Senior (including fifth or sixth year senior).....4.....
- Working on a 2nd BA/BS degree.....5.....
- Enrolled as a graduate student.....6.....

37. Did you start your undergraduate education at a 2-year college? (Do **not** include summer school at a 2-year school before you started at a 4-year school in the fall.) **(PLEASE CIRCLE ONE NUMBER)**

- Yes..... 1
- No..... 2

Background Information

38. What is your age?

Age: _____

39. What is your sex? **(PLEASE CIRCLE ONE NUMBER)**

- Male..... 1
- Female..... 2

40. What is your ethnicity? **(PLEASE CIRCLE ONE NUMBER)**

- Hispanic or Latino..... 1
- Not Hispanic or Latino... 2

41. What is your race? **(PLEASE CIRCLE ONE OR MORE NUMBERS)**

- American Indian or Alaskan Native..... 1
- Asian..... 2
- Black or African American..... 3
- Native Hawaiian or Pacific Islander..... 4
- White..... 5

Overview

42. What was the most important thing you learned about yourself as a result of your undergraduate research experiences?
43. How do you think NSF can improve the Research Experiences for Undergraduates (REU) program?

44. Other comments.

45. We will be conducting a follow-up survey in 2009. To help us locate you at that time, please provide us with the following:

Your current personal (non-school-specific) e-mail address, if you have one:

Person likely to know how to reach you in 2009:

Name: _____

Relationship to you: _____

Mailing address: _____

City: _____ State: _____ ZIP: _____

Phone: _____

E-mail address: _____

**Thank you very much for your participation in this study.
As a token of our appreciation, we will send you a \$20 [insert online retailer] gift
certificate
when we receive your completed questionnaire**

**If you have questions, please contact Mary Hancock: 360-380-4126,
mary.hancock@sri.com**