Undergraduate & Post-Undergraduate Experiences Follow-Up Survey [REU Program Follow-up Survey]
NON-STUDENT VERSION

Thank you for taking part in the Computing Research Association's (CRA's) Undergraduate Experiences Survey [REU Program Survey]! The survey should take no more than 20 minutes of your time to complete. This survey works best with Google Chrome.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-XXXX. Public reporting burden for this collection of information is estimated to average 20 minutes per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne H. Plimpton, Reports Clearance Officer, National Science Foundation Alexandria, VA 22314.

1. Are you currently a student?
   ❍ Yes, I am currently an **undergraduate student** [Go to undergraduate student survey]
   ❍ Yes, I am currently a **graduate student** [Go to graduate student survey]
   ❍ Yes, I am currently a **non-degree earning student** (e.g., taking courses only, certificate program, bootcamps, etc.) [Go to non-degree earning student survey]
   ❍ No, I am NOT currently a student.

DEFINITION TO RESPONDENT:
Throughout this survey, we will use the terms "**computing**" and "**computing-related**".

"Computing" or "computing-related" includes the fields below and other similar fields:
- Computer Science
- Computer Engineering
- Software Engineering
- Electrical and Computer Engineering
- Systems Engineering
- Computer Hardware Engineering
- Computing Information Systems
- Information Systems, Information Science
- Informatics, Bioinformatics
- Cybersecurity
- Data Science/Data Analytics
- Machine Learning
- Robotics
- High Performance Computing
- Human-Computer Interaction
- Computational Science/Social Science
- Computational Biology
- Computational Economics
- Computational Mathematics
- Any other computing & technology field

COMPLETED EDUCATION

This survey was developed by Computing Research Association's (CRA) Center for Evaluating the Research Pipeline (CERP). Please acknowledge CRA and CERP in all publications using this survey and direct other parties interested in obtaining the survey to CERP (cerp@cra.org).

2. What is your highest level of completed education?
○ Some college (no degree earned)
○ Associate's degree
○ Bachelor's degree
○ Master's degree
○ Doctoral degree

3. How long has it been since you completed your highest level of education?
○ Less than 1 year
○ 1 – 5 years
○ More than 5 years

[Display if Q2. is "Some college (no degree earned)"]
You indicated you have at least some college experience. We would like to ask about your pre-college experience (i.e., prior to entering some type of undergraduate/postsecondary program).

[Display if Q2. is "Associate's degree"]
You indicated you have an Associate's degree. We would like to ask about your experience prior to entering your undergraduate level Associate's degree.

[Display section if Q2. is NOT "Associate's degree"]
COMMUNITY COLLEGE EXPERIENCE
4. Which of the following applies to you? Select all that apply.
❑ I have taken courses for credit at a community college
❑ I have completed a degree or certificate at a community college
❑ None of the above [Exclusive answer]

[Display if Q4. is "I have completed a degree or certificate at a community college"]
5. In the previous question, you indicated that you completed a degree or certificate at a community college.
What did you earn from community college? Select all that apply.
❑ Associate's degree
❑ A certification (not a degree)
❑ Something different

[Display if Q2. is "Associate's Degree"]
ASSOCIATE'S DEGREE INFORMATION
6. At which institution did you earn your most recent **associate's degree**? If you do not see your institution on the list, scroll to the bottom of the list and select 'Other'.
    [List of institutions]

[Display if Q6. is "Other"]
7. Please list the name of the institution at which you earned your most recent **associate's degree.** Please avoid acronyms.

_____

8. What was your field of study for your most recent associate's **degree**? Choose up to 2 responses if you had a double-major.

Note: If you do not see your exact program name, please select the option(s) most closely related.
[List of majors]

9. In which year did you earn your most recent **associate's degree**?
[List of years]

[Display if Q2. is "Bachelor's degree", "Master's degree", OR "Doctoral degree"]
BACHELOR'S DEGREE INFORMATION
10. At which institution did you earn your most recent **undergraduate degree**? If you do not see your institution on the list, scroll to the bottom of the list and select 'Other'.
[List of institutions]

[Display if Q10. is "Other"]
11. Please list the name of the institution at which you earned your most recent **undergraduate degree**.

_____

12. In which year did you earn your most recent **undergraduate degree**?
[List of years]

13. What was your **undergraduate major** in college for your most recent undergraduate degree? Choose up to 2 responses if you had a double-major.
Note: If you do not see your exact program name, please select the option(s) most closely related.
[List of majors]

REU UNDERGRADUATES EXPERIENCES
REU PROMPT (Questions 14. through 17. are for COMPARISON GROUP PARTICIPANTS ONLY)
The next set of questions will focus on your previous **formal research experience as an undergraduate student** (i.e., REU)**.** Formal research includes any experience you applied for and through which you worked closely with a mentor or research advisor.

Before we move into questions about formal REUs, please answer the following question.

14. During your **undergraduate program**, which of the following experiences were you involved in that were NOT part of a formal REU?
❑ Independent research projects
❑ Course-based research projects
❑ Internships or co-ops
❑ Research Assistant
❑ None of the above

15. During your **undergraduate program**, did you participate in any formal REUs?
Reminder: Formal REU includes any experience you applied for and through which you worked closely with a mentor or research advisor.
❍ Yes, I participated in at least one formal research experience as an undergraduate [Go to Q17.]
❍ No, I NEVER participated in a formal research experience as an undergraduate [Answer Q16.; skip to PRE-GRADUATE SCHOOL JOB EXPERIENCE section]

[If Q15. is "No, I never… "]

16. Which of the following reasons explain why you did not participate in a formal research experience? Choose up to 3 responses.
- ❑ I was not aware of research opportunities available to me
- ❑ I didn't have time
- ❑ It never occurred to me to do research
- ❑ I was not interested in doing research
- ❑ I preferred more practical experiences such as internships
- ❑ It didn't pay well enough or not at all
- ❑ Other; please specify: _____

[If Q15. is "Yes…"]

17. Which of the following reasons best explain your motivations to participate in a formal REU? Please choose up to 3 responses.
- ❑ To increase my competitiveness for graduate school
- ❑ To learn more about what graduate school might be like
- ❑ To have something to do outside of my coursework
- ❑ To build work experience and my resume/CV
- ❑ To participate in something prestigious
- ❑ To expand on what I had been learning about in my classes
- ❑ To develop or improve my technical skills
- ❑ The research project(s) seemed interesting
- ❑ To learn more about a specific research area of interest to me
- ❑ To learn more about what being a researcher is like
- ❑ To build my confidence as a researcher
- ❑ To better understand the connection between research and real world applications
- ❑ To build connections and/or collaborate with other student researchers
- ❑ To build connections and/or collaborate with particular faculty
- ❑ To have a paid opportunity
- ❑ To help pay for my living expenses while in college
- ❑ Other; please specify: _____

[Answer the section below (PAST REU INFORMATION) if Q15. is "Yes…"]

PAST REU INFORMATION (COMPARISON GROUP)

18. During your undergraduate program, how many formal REUs did you complete?
- ❍ 1
- ❍ 2
- ❍ 3
- ❍ 4 or more

[Repeat Q19. – Q28. for each REU]

19. In which year did your [first/second/third/fourth] formal REU start?
   [List of years]

20. Was this REU funded by NSF?
- ❍ Yes [answer next question]
- ❍ No [skip to Q23.]
- ❍ I do not know [skip to Q23.]

21. Please indicate the NSF program in which you participated. Select all that apply.
    ❑ Research Experiences for Undergraduates (REU)
    ❑ Louis Stokes Alliance for Minority Participation
    ❑ Research Experiences for Teachers
    ❑ Other: please specify

22. [If Q21. = "REU"] Was this an REU Site or REU Supplement?
    ❍ REU Site (typically involves working with a group of 10 or so other undergraduates at a university other than one's undergraduate institution)
    ❍ REU Supplement (typically working individually or with one other student on a PI's funded project, usually at one's undergraduate institution)
    ❍ Don't know

23. When and where did your formal REU take place?
{Academic Year; Summer}
• At my home college or university
• At another college or university
• At a company or organization or government institution outside of my college or university
• Somewhere else

[If "At another college or university"]
24. What was the name of the institution where you completed this REU?
        [List of institutions]

[If "At a company…"]
25. What was the name of the company or organization where you completed this REU?

    _____

26. Which of the following apply to this REU?
    ❑ You received a stipend (not including other paid benefits)
    ❑ You were provided housing
    ❑ You were provided with a local public transportation pass
    ❑ You were provided with a meal stipend
    ❑ You were provided with a computer
    ❑ You had a dedicated space to do your work
    ❑ You could attend professional development seminars (including grad school advice)
    ❑ You could attend technical seminars
    ❑ You received one-on-one advising from my faculty mentor
    ❑ You met peers with whom you have kept in touch
    ❑ I don't remember [Exclusive answer]
    ❑ None of the above [Exclusive answer]

[Answer Q27. - 28. if received a stipend]
27. You indicated that you received a stipend for this REU. How much do you feel you deserved to be paid relative to the amount of work expected of you during this REU?
    ❍ Deserved a lot less
    ❍ Deserved a little less
    ❍ Deserved neither less nor more

❍ Deserved a little more
❍ Deserved a lot more

28. How much was your total stipend amount for this REU (in USD), not including other paid benefits?
❍ Less than $1,000
❍ $1,000 - $2,999
❍ $3,000 - $4,999
❍ $5,000 - $6,999
❍ $7,000 - $8,999
❍ $9,000 - $10,999
❍ $11,000 - $12,999
❍ $13,000 - $14,999
❍ $15,000 or more
❍ I don't remember

REU PROMPT (Questions 29. through 38. are for NSF REU PARTICIPANTS ONLY)
The next set of questions will focus on your previous **formal research experience**s **as an undergraduate student** (i.e., REU)**.** Formal research includes any experience you applied for and through which you worked closely with a mentor or research advisor.

Before we move into questions about formal REUs, please answer the following question.

29. During your **undergraduate program**, which of the following experiences were you involved in that were NOT part of a formal REU?
❑ Independent research projects
❑ Course-based research projects
❑ Internships or co-ops
❑ Research Assistant
❑ None of the above

Now we would like to ask about your NSF REU experience that you participated in from [insert start date] to [insert end date].

30. How often are you in touch with the following people from this REU?
(Never; Rarely, Occasionally, Frequently, Very frequently/// Not Applicable)
◆ Your faculty advisor/the PI
◆ A postdoc
◆ Graduate student(s)
◆ A staff member of the lab
◆ Other students from your cohort

31. Which of the following happened after this REU experience? Please select all that apply.
❑ You received an NSF-funded stipend to continue working on this REU project for additional semesters/quarters
❑ You had an opportunity to continue research with the REU faculty as an intern or in a non-NSF-funded paid position when your REU ended

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- ❑ You developed a new research project based on your work in this REU
- ❑ You began working with another research group based on your REU work
- ❑ You submitted a research paper or poster to a conference based on your REU
- ❑ You presented a research paper or poster at a conference based on your RE
- ❑ You contributed to a research article with your peers and PI from your REU
- ❑ You published your research from your REU

32. In what way did this REU experience impact your subsequent CS elective coursework?
- ◆ I decided to take fewer CS elective courses
- ◆ I decided to take more CS elective courses
- ◆ I decided to take different CS elective courses
- ◆ My REU did not impact my subsequent CS elective coursework

33. To what degree did this REU impact your interest in the following?
(Less interested, More interested, No impact)
- ● Pursuing more research opportunities
- ● Pursuing a research career
- ● Pursuing a non-research career
- ● Getting a master's degree
- ● Getting a doctoral degree

34. Since completing this REU(s), have you ever worked on an REU in a supervisory or mentoring role?
- ❑ Yes
- ❑ No

35. Which of the following are true for your career pathway? Select all that apply.
- ❑ Your mentor for this REU served as a reference for one or more of your jobs
- ❑ You decided to work in the same research area as this REU
- ❑ You learned of job opportunities through your connections from this REU
- ❑ You got a job through your connections from this REU
- ❑ The skills you gained from this REU helped you get a job
- ❑ None of the above

36. To what degree did this REU influence your career pathway?
- ◆ Not at all
- ◆ Somewhat
- ◆ A moderate amount
- ◆ Quite a bit
- ◆ A great deal
- ◆ I don't remember

37. To what degree did this REU help set you up for success in your career?
- ◆ Not at all
- ◆ Somewhat
- ◆ A moderate amount
- ◆ Quite a bit
- ◆ A great deal

� I don't remember

38. After [insert end date of REU], did you participate in any additional formal REUs during your undergraduate program?
Reminder: Formal REU includes any experience you applied for and through which you worked closely with a mentor or research advisor.
If your NSF REU extended beyond the term listed above, please answer "Yes."
   ○ Yes, I participated in at least one formal undergraduate research experience after that time. [Go to Q40.]
   ○ No, I did not participate in another formal undergraduate research experience after that time. (Go to Q39.]

[If Q38. is "No…"]
39. Which of the following reasons explain why you did not participate in another formal research experience? Choose up to 3 responses.
   ❑ I was close to graduating
   ❑ I was not aware of research opportunities available to me
   ❑ I didn't have time
   ❑ It never occurred to me to do more research
   ❑ I was not interested in doing research
   ❑ I preferred more practical experiences such as internships
   ❑ It didn't pay well enough or not at all
   ❑ Other; please specify: _____

[If Q38. is "Yes…"]
40. Which of the following reasons best explain your motivations to participate in another formal REU? Please choose up to 3 responses.
   ❑ To increase my competitiveness for graduate school
   ❑ To learn more about what graduate school might be like
   ❑ To have something to do outside of my coursework
   ❑ To build work experience and my resume/CV
   ❑ To participate in something prestigious
   ❑ To expand on what I had been learning about in my classes
   ❑ To develop or improve my technical skills
   ❑ The research project(s) seemed interesting
   ❑ To learn more about a specific research area of interest to me
   ❑ To learn more about what being a researcher is like
   ❑ To build my confidence as a researcher
   ❑ To better understand the connection between research and real world applications
   ❑ To build connections and/or collaborate with other student researchers
   ❑ To build connections and/or collaborate with particular faculty
   ❑ To have a paid opportunity
   ❑ To help pay for my living expenses while in college
   ❑ Other; please specify: _____

[Answer the section below (PAST REU INFORMATION) if Q38. is "Yes..."]

PAST REU INFORMATION (NSF REU PARTICIPANTS)

41. Since your NSF REU that you participated in from [insert start date] to [insert end date], how many additional formal REUs did you complete? Reminder – If you participated in your NSF REU for additional terms, please include this in your count below.
  - ❍ 1
  - ❍ 2
  - ❍ 3
  - ❍ 4 or more

 [Repeat Q42. – Q51. for each REU]
42. In which year did your [first/second/third/fourth] formal REU start?
    [List of years]

43. Was this REU funded by NSF?
  - ❍ Yes [answer next question]
  - ❍ No [skip to Q46.]
  - ❍ I do not know [skip to Q46.]

44. Please indicate the NSF program in which you participated. Select all that apply.
  - ❑ Research Experiences for Undergraduates (REU)
  - ❑ Louis Stokes Alliance for Minority Participation
  - ❑ Research Experiences for Teachers
  - ❑ Other: please specify

45. [If Q44. = "REU"] Was this an REU Site or REU Supplement?
  - ❍ REU Site (typically involves working with a group of 10 or so other undergraduates at a university other than one's undergraduate institution)
  - ❍ REU Supplement (typically working individually or with one other student on a PI's funded project, usually at one's undergraduate institution)
  - ❍ Don't know

46. When and where did your formal REU take place?
 {Academic Year; Summer}
  - • At my home college or university
  - • At another college or university
  - • At a company or organization or government institution outside of my college or university
  - • Somewhere else

[If "At another college or university"]
47. What was the name of the institution where you completed this REU?
    [List of institutions]

[If "At a company…"]
48. What was the name of the company or organization where you completed this REU?

49. Which of the following apply to this REU?
  - ❑ You received a stipend (not including other paid benefits)

❑ You were provided housing
❑ You were provided with a local public transportation pass
❑ You were provided with a meal stipend
❑ You were provided with a computer
❑ You had a dedicated space to do your work
❑ You could attend professional development seminars (including grad school advice)
❑ You could attend technical seminars
❑ You received one-on-one advising from my faculty mentor
❑ You met peers with whom you have kept in touch
❑ I don't remember [Exclusive answer]
❑ None of the above [Exclusive answer]

[Answer Q50. - 51. if received a stipend]
50. You indicated that you received a stipend for this REU. How much do you feel you deserved to be paid relative to the amount of work expected of you during this REU?
○ Deserved a lot less
○ Deserved a little less
○ Deserved neither less nor more
○ Deserved a little more
○ Deserved a lot more

51. How much was your total stipend amount for this REU (in USD), not including other paid benefits?
○ Less than $1,000
○ $1,000 - $2,999
○ $3,000 - $4,999
○ $5,000 - $6,999
○ $7,000 - $8,999
○ $9,000 - $10,999
○ $11,000 - $12,999
○ $13,000 - $14,999
○ $15,000 or more
○ I don't remember

PRE-GRADUATE SCHOOL JOB EXPERIENCE
[Display if Q2. is "Master's degree" OR "Doctoral degree"]
52. How many jobs did you have after you graduated from your undergraduate studies, but before you began your graduate studies?
○ 0
○ 1
○ 2
○ More than 2

[Display if selected Q52. is NOT "0"]
53. Which of the following apply to the job(s) you had after you graduated from your undergraduate studies, but before you began your graduate studies? Select all that apply.

- ❑ Computing related
- ❑ Research focused
- ❑ Industry position
- ❑ Academic position
- ❑ None of the above [Exclusive answer]

[Display if Q2. is "Doctoral degree"]

DOCTORAL STUDENTS/HOLDERS: EARN TERMINAL MASTER'S DEGREE

54. Prior to entering your doctoral program, did you complete a terminal master's program?
    Note: A terminal master's degree program is a program to which you applied to earn a master's degree only. You would have graduated and finished the program with a master's degree
    - ○ Yes, I completed a terminal master's program
    - ○ No, I did not complete a terminal master's program

[Display is Q54. is "Yes, I completed a terminal master's program"]

55. What made you decide to pursue a doctoral program after completing a terminal master's program?
    - ○ Wanted to change fields
    - ○ Wanted to grow expertise in my field
    - ○ Wanted to pursue a research career
    - ○ It was required for a position I was interested in
    - ○ Other; please specify: _____

[Display if Q2. is "Master's degree" OR,
Q2. is Doctoral degree AND Q54. is "Yes, I completed a terminal master's program]

MASTER'S DEGREE INFORMATION

56. At which institution did you earn your most recent **terminal master's degree**? If you do not see your institution on the list, scroll to the bottom of the list and select 'Other'.
    [List of institutions]

[Display if Q56. is "Other"]

57. Please list the name of the institution at which you earned your most recent **terminal master's degree**?

_____

58. In which year did you earn your most recent **terminal master's degree**?
    [List of years]

59. In which field did you earn your terminal master's degree? Choose up to 2 responses.
    Note: If you do not see your exact field, please select the option(s) most closely related.
    [List of fields]

60. Before you earned your master's degree, did you complete any of the following?
    - ❑ A master's thesis
    - ❑ A capstone project (not your thesis)
    - ❑ An independent research project (not your thesis or capstone)
    - ❑ A teaching assistantship
    - ❑ A research assistantship
    - ❑ An internship

❑ None of the above [Exclusive answer]

CURRENT EMPLOYMENT STATUS

61. What is your **current** employment status? Select all that apply.
❑ Employed full-time
❑ Employed part-time
❑ None of the above [Exclusive answer; Go to Question 87.]

[Display if Q61. is "Employed full-time" AND "Employed part-time"]
You indicated you are employed both full-time and part-time.
In the next section, we will ask you about your career as it relates to only one position. Think about the job you consider to be your primary position and answer the following questions.

62. Which career level best describes your current professional status?
○ Entry level
○ Mid level
○ Senior level
○ Executive level

63. In which field are you currently working? Choose up to 2 responses.
   Note: If you do not see your exact field, select the option(s) most closely related.
      [List of fields]

[If Q63. is a non-computing field]
64. Based on your responses, you work in a non-computing field.
 Which of the following reasons below best explain why you do not currently work in computing? Choose up to 3 responses.
❑ I do not have the required education/training for computing positions
❑ There is nothing available in my geographic location
❑ There is nothing available in my field of interest
❑ I am not interested in working in a computing related job
❑ Jobs in computing are too stressful
❑ I am experiencing a two-body problem, which currently inhibits my ability to work in computing
❑ I do not see a place for myself in computing
❑ I have had negative experiences in computing
❑ I have a strong interest in a different field that is not related to computing
❑ I did not earn a degree in computing
❑ I am currently in the job market for a computing job
❑ Other; please specify: _____

65. How long have you been at your current place of employment? If you have been with your current workplace for less than one year, only enter the number of months. Please use numerical values only.
○ Years: _____
○ Months: _____

66. How many times have you been promoted?
○ Never [Go to Question 68.]
○ Once

○ Twice
○ Three times
○ Four or more times

67. How long have you been in your current position? If you have been in your current position for less than one year, only enter the number of months. Please use numerical values only.
○ Years: _____
○ Months: _____

68. In which setting do you currently work?
○ Academia, PhD granting institution
○ Academia, non-PhD granting institution
○ Industry
○ Government
    Something else

[Display if Q68. is "Academia…"]
69. Are you tenured or tenure track?
○ Yes, I am tenured
○ Yes, I am tenure-track
○ No, I am neither tenured nor tenure-track

70. What is the primary focus of your current position? Choose up to 3 responses that best describe the focus of your position.
❑ Research
❑ Teaching
❑ Administration
❑ Administrative
❑ Advising
❑ Technical
❑ Analytical
❑ Management
❑ Skilled labor
❑ Developer
❑ Operations
❑ Other

[Display if Q68. is "Academia…"]
71. What is your current position? If you do not see your exact title, please select the one that best fits your position.
○ Postdoc
○ Technical staff
○ Administrative staff
○ Lecturer/Instructor/Adjunct faculty
○ Assistant Professor
○ Associate Professor
○ Full Professor
○ Professor of the Practice

○ Emeritus
○ Administration/Leadership level position
○ Other

[Display if Q68. is "Academia…"]
72. Which of the following apply to your academic position? Select all that apply.
❑ Received distinguishment or endowment
❑ Associate department chair
❑ Department chair
❑ Faculty director
❑ Associate faculty director
❑ Lab director
❑ None of the above

[Display if Q68. is NOT "Academia…"]
73. What is your job title? _____

JOB SALARY AND COMMITMENT
74. Which of the following apply to your current position?
❑ I received a signing bonus
❑ I received relocation funds
❑ I relocated to a new area for my job
❑ My position is a postdoctoral position [Display if Government/Industry/Other]
❑ I manage or supervise other staff
❑ I have professional development opportunities
❑ I have a flexible schedule with options for working from home
❑ None of the above

[Display if Q74. is "I relocated to a new area for my job"]
75. To which country/location did you relocate for your current position?
        [List of countries]

76. What is your annual salary (in US dollars) for your current position?
Note: If you are working in an hourly-rate position, please indicate approximately how much you make in a year.

77. ▼ $0 (23) ... More than $150,000 (22)

78. How difficult or easy is it to cover your basic expenses on your current salary?
○ Very difficult
○ Somewhat difficult
○ Neither difficult nor easy
○ Somewhat easy
○ Very easy

79. How much do you feel you deserve to be paid relative to the amount of work expected of you for your current position?
○ Deserve a lot less

❍ Deserve a little less
❍ Deserve neither less nor more
❍ Deserve a little more
❍ Deserve a lot more

80. How committed are you to your current position?
❍ Not at all committed
❍ Slightly committed
❍ Moderately committed
❍ Quite committed
❍ Extremely committed

[Display section if Q3. is "Less than 1 year" OR "1-5 years"]

JOB PREPARATION

81. Rate the degree to which you disagree or agree that the following helped prepare you for your current position.
Note: If you did not complete a particular activity listed below, please select "Not applicable."
    {Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree; Not applicable}
- Courses taken for my degree program
- Courses taken outside of my degree program
- Workshops or other trainings
- Independent projects or research
- Formal research experiences
- Teaching experience
- Internships
- Previous employment
- Student or professional groups
- Guidance from mentors/advisors

RESEARCH SKILLS AND KNOWLEDGE

We are interested in learning about your current research skills and knowledge, even if this is not part of your current work responsibilities.

82. How would you rate your current skill level in each of the following:
    {Poor/Fair/Good/Very good/Excellent}
- Generating hypotheses
- Using scientific methods to test a hypothesis
- Collaborating with colleagues
- Collecting data or conducting experiments
- Analyzing data with statistics or other tools

83. How would you rate your current skill level in each of the following:
    {Poor/Fair/Good/Very good/Excellent}
- Summarizing published research results
- Explaining research results
- Writing or co-authoring a research paper or report
- Presenting a research paper or report
- Publishing a research paper or report

[Display section if Q61. is "Employed full-time" or "Employed part-time"]

JOB PERSISTENCE

84. How often have you considered leaving your current position?
- ○ Never [Go to Question 88.]
- ○ Rarely
- ○ Occasionally
- ○ Often
- ○ All of the time

85. Why did you consider leaving your current position? Choose up to 3 responses.
- ❑ I was interested in trying different types of work
- ❑ I was having trouble advancing in my current position
- ❑ I was looking for better career prospects
- ❑ I was looking for educational advancements
- ❑ I was not making enough money for the job I was doing
- ❑ I had negative experiences in my workplace
- ❑ I did not like my supervisor/boss
- ❑ I had personal reasons (e.g., family responsibilities, etc.)
- ❑ Other; please specify: _____

86. What helped you continue in your current position when you were contemplating leaving? Choose up to 3 responses.
- ❑ My family encouraged/supported me
- ❑ I enjoyed the work
- ❑ I found a better supervisor/boss
- ❑ My friends encouraged/supported me
- ❑ The pay was good
- ❑ My mentor(s) encouraged/supported me
- ❑ I was not able to find a better option
- ❑ I need the job
- ❑ I have grant considerations
- ❑ My advisees are here
- ❑ My benefits are good
- ❑ Other; please specify: _____

[Display section if Q61. is "None of the above" AND if Q1. is "No, I am NOT currently a student (e.g., postdoc, not enrolled in any educational program, working, etc..)]

WHY NOT WORKING OR IN SCHOOL?

87. Based on your responses, you are not currently a student, and you are not currently employed full time or part time. Which of the following below best explains why you are neither working nor in school? Choose up to 3 responses.
- ❑ There is nothing available in my geographic location
- ❑ There is nothing available in my field
- ❑ I am underqualified for the positions I am interested in
- ❑ I am overqualified for the positions I am in
- ❑ I am experiencing a two-body problem

- ❑ I am taking a break
- ❑ I have family responsibilities
- ❑ I am not interested in going to school
- ❑ I am not interested in working
- ❑ I am retired
- ❑ I have been laid off/furloughed
- ❑ I am still in the job market
- ❑ Other; please specify: _____

SKILLS PROFICENCY

88. Please rate the degree of your proficiency (how skilled you are) in the following items:
    {Highly deficient; Deficient; Average; Proficient; Highly proficient}
- Mentoring others
- Building/maintaining a professional network
- Dealing with conflict
- Providing constructive feedback

89. Please rate the degree of your proficiency (how skilled you are) in the following items:
    {Highly deficient; Deficient; Average; Proficient; Highly proficient}
- Time management
- Speaking clearly and effectively
- Presenting research
- Planning and organizing projects
- Writing scientific papers

90. Please rate the degree of your proficiency (how skilled you are) in the following items:
    {Highly deficient; Deficient; Average; Proficient; Highly proficient}
- Obtaining funding for research
- Teaching in a classroom setting
- Writing scientific papers for publications
- Writing for non-technical audiences

91. Please rate the degree of your proficiency (how skilled you are) in the following items:
    {Highly deficient; Deficient; Average; Proficient; Highly proficient}
- Identifying career options
- Preparing job application materials
- Interviewing techniques
- Preparing your CV/resume
- Preparing graduate school application materials
- Identifying graduate school options

SCIENTIFIC IDENTITY

92. The following questions ask how you think about yourself and your personal identity. We want to understand how much you think that being a scientist is part of who you are.
    How true of you are the following statements:
    {Not at all true; A little true; Moderately true; Quite true; Extremely true}
- In general, being a scientist is an important part of my self-image.

- I have a strong sense of belonging to the community of scientists.
- Being a scientist is an important reflection of who I am.
- I have come to think of myself as a "scientist."
- I am a scientist.

BELONGING

93. Please indicate the extent to which you disagree or agree with the following statement. How much do you agree or disagree with the following statements?
{Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree}
- I see myself as a "computing person".
- I feel like I "belong" in computing.
- I feel like an outsider in computing.
- Computing is a big part of who I am.
- I feel welcomed in computing.

SELF-EFFICACY

94. I am confident that I can...
{Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree}
- clearly communicate technical problems and solutions to a range of audiences.
- articulate thoughtful answers to questions about my work during a presentation.
- introduce myself to new peers/colleagues at professional meetings
- be a capable researcher in computing
- find employment in an area of computing interest.

[Display if Q2.: Some college (no degree earned), Associate's degree]

95. I am confident that I can...
{Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree}
- complete an undergraduate degree in computing.
- get admitted to a graduate computing program.
- be successful in a graduate computing program.

Display if Q2.: Bachelor's degree]

96. I am confident that I can...
{Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree}
- get admitted to a graduate computing program.
- be successful in a graduate computing program.

97. I am confident that I can...
{Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree}
- successfully teach a course in my field.
- be an effective mentor.
- become an expert in my field.
- discuss my work with senior members of my field.
- publish in tier 1/top conferences and journals in my field.

[Display if Q61.: Employed full-time, Employed part-time]

98. I am confident that I can...
{Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree}

- raise important issues in meetings.
- speak directly with my supervisor about issues at work.
- negotiate for resources (e.g., salary, lab space, equipment, etc.)

MENTOR SUPPORT

99. A mentor is someone with whom you have an ongoing relationship, and who provides you with advice and assistance in advancing in your career. To what extent do you have a mentor who…
   {Not at all; A little; Somewhat; Quite a bit; Very much}
- helps you improve your computing skills?
- helps you improve your research skills?
- helps you identify or develop your research interests?
- gives you insight into what graduate school is like?
- provides information or advice about applying for graduate school?
- shows compassion for any issues you discussed with them?
- shares personal experiences as an alternative perspective to your problems?
- explores career options with you?
- supports your research ideas?
- provides constructive feedback?

100. Among the people below, who do you consider to be a mentor? Select all that apply.
- ❑ My former advisor
- ❑ A former REU mentor (display to REU participants only)
- ❑ A former professor within my department (not my advisor)
- ❑ A former professor outside of my department
- ❑ A director or administrative faculty
- ❑ A graduate student (includes graduate teaching/research assistants and student mentors)
- ❑ An undergraduate student (includes undergraduate teaching/research assistants and student mentors)
- ❑ Someone I met at a conference or mentoring program sponsored by an outside organization (or other professional activity)
- ❑ A family member, partner, friend, religious leader, or someone else with whom I have a personal relationship
- ❑ A coworker, supervisor, or someone else with whom I have a professional relationship
- ❑ Someone else
- ❑ No one [Exclusive answer]

PROFESSIONAL NETWORK

101. To what extent is each of the following available to you at this point?
   {Not at all; A little; A moderate amount; Quite a bit; Very much}
- A strong network of peers to interact with at conferences.
- A strong network of mentors to interact with at conferences.
- People who would be excited to learn about your professional successes.
- People with whom you can discuss issues you are having.

ENTITY BELIEFS

102. Please indicate the extent to which you disagree or agree with the following statements.
   {Strongly disagree; Somewhat disagree; Neither agree nor disagree; Somewhat agree; Strongly agree}
- People have a certain amount of ability to learn computing, and they really can't do much to change it.
- Anyone has the ability to learn computing and be good at it.

- Computing comes naturally to some people but not others.
- Not everyone is well-suited for computing.

IMPOSTER SYNDROME
103. In your opinion, to what extent are each of the following statements <u>true of you</u>:
    {Not at all true; A little true; Moderately true; Quite true; Extremely true}
- I can give the impression that I'm more competent than I really am.
- When others praise me for something I have accomplished, I am afraid I will not be able to live up to their expectations of me in the future.
- At times, I feel my success has been due to some kind of luck.
- At times, I am disappointed in my present accomplishments and think I should have accomplished much more by now.

ALL NON-STUDENTS: ACTIVITIES PART OF CAREER
104. To what degree is the following a regular aspect of your professional life?
    {Not at all; A little; A moderate amount; Quite a bit; A great deal}
- Mentoring others
- Supervising others
- Teaching courses
- Helping prepare grant proposal(s) (not as a PI or Co-PI)
- Departmental service [Display if Q68. is "Academia…"]
- Entrepreneurial or consulting projects (e.g., tech start-ups, client services, etc.)
- Leading grant awards as the Principal Investigator (PI)
- Leading grant awards as a Co-Principal Investigator (Co-PI)
- Publishing in tier 1 conferences and journals in your field

105. To what degree is the following a regular aspect of your professional life?
    {Not at all; A little; A moderate amount; Quite a bit; A great deal}
- Involvement in outreach to K-12 students related to computing
- Involvement in efforts to broaden participation in computing
- Involvement in career mentoring programs or workshops as an invited speaker or mentor

106. To what degree is the following a regular aspect of your professional life?
    {Not at all; A little; A moderate amount; Quite a bit; A great deal}
- Leadership role in professional societies related to computing
- Organizing technical conferences related to computing
- Organizing career mentoring programs or workshops
- Organizing trainings or workshops in computing (other than conferences)

DIVERSITY ACTIVITIES
107. Up to this point in your career, have you been involved in any of the following conferences or programs as a participant, speaker/mentor, or organizer? Select all that apply.
    {Participant; Speaker/Mentor; Organizer; Not applicable}
- ACM Richard Tapia Celebration of Diversity in Computing
- ACM Programming Languages Mentoring Workshops (PLMW)
- CRA-W/CRA-WP Early-career Mentoring Workshops
- CRA-W/CRA-WP Mid-career Mentoring Workshops
- CRA-W/CRA-WP Grad Cohort for Women

- CRA/CRA-WP Grad Cohort for Underrepresented Minorities + Persons with Disabilities
- Grace Hopper Celebration of Women in Computing
- STARS Computing Corps conference or workshops, or home team meetings
- Local events related to diversity in computing
- CRA Career Mentoring Workshops

INTEREST IN COMPUTING RESEARCH
The following questions ask about your interests in and knowledge about future computing research pathways.

108. What is your current level of interest in the following:

{Not at all interested/Slightly interested/Moderately interested/Quite interested/Extremely interested}
- Conducting research as a graduate student
- Learning more about computing
- Pursuing a master's degree in a computing field
- Pursuing a doctoral degree in a computing field
- Pursuing a research career
- Pursuing a non-research career
- Mentoring others on a future REU project

109. How likely is it that you will enroll in a terminal master's program in a computing field?
- ❍ Not at all likely
- ❍ Slightly likely
- ❍ Moderately likely
- ❍ Quite likely
- ❍ Extremely likely

110. How likely is it that you will enroll in a doctoral program in a computing field?
- ❍ Not at all likely
- ❍ Slightly likely
- ❍ Moderately likely
- ❍ Quite likely
- ❍ Extremely likely

111. How much do you feel you know about the following:
    {Nothing, a little, a moderate amount, quite a bit, a lot}
- ● What to look for in a graduate research advisor
- ● The research areas you would pursue in graduate school
- ● What graduate admissions committees look for in an applicant
- ● How to choose graduate programs that are a good fit for you
- ● What being a graduate student would be like

112. How much do you feel you know about the following:
    {Nothing, a little, a moderate amount, quite a bit, a lot}
- Career options in computing
- Career options in research
- What it would be like to work in academia

HIGHEST DEGREE ASPIRATIONS
[Display If NOT selected Question 2.: Doctoral degree]
113. What is the highest degree you plan to attain? ? Note: Even if you are not sure yet, please select the degree you would like to attain if you could.
- ❍ Technical certificate
- ❍ Associate's degree
- ❍ Bachelor's degree
- ❍ Graduate certificate
- ❍ Master's degree
- ❍ Doctoral degree
- ❍ I have already earned the highest degree I plan to attain

[Display if Q113. is Associate's, Bachelor's, Master's, Doctoral]
114. In which field do you intend to earn your highest degree?
Note: If you do not see your exact field, please select the option most closely related.
[List of fields]

FUTURE PLANS PROMPT
115. At this point in your career, what are your plans moving forward? Choose up to 2 responses.
- ❑ Go back to school [Go to Question 126.]
- ❑ Start working (includes internship, full/part time work, postdoc, etc.) [Go to Question 116.]
- ❑ Continue working in my same job [Go to Question 140. or Question 145.]
- ❑ Move up the career ladder with my employer [Go to Question 140. or Question 145.]
- ❑ Change employers [Go to Question 116.]
- ❑ Create a start-up [Go to Question 140. or Question 145.]
- ❑ Other [Go to Question 140. or Question 145.]
- ❑ I don't know at all [Go to Question 140. or Question 145.]

FUTURE PLANS – START WORKING
116. Which of the following steps, if any, have you taken in the job search process? Select all that apply.
- ❑ Exploring my options
- ❑ Applied for jobs
- ❑ Interviewed for jobs
- ❑ Received a job offer
- ❑ Negotiated a job offer
- ❑ Accepted a full-time job offer
- ❑ Accepted a part-time job offer
- ❑ None of the above [Exclusive answer]

[If Q116. is "Received a job offer"]
117. How many job offers have you received since starting the job search process? (Please use numerical values only). _____

[Display following section if Q116. is "Accepted a full-time/part-time job offer"]
FUTURE PLANS – WORKING, ACCEPTED JOB OFFER
We would like to ask you some questions about the job offer you accepted.

118. How best would you describe your new job?

○ Entry level
○ Mid level
○ Senior level
○ Executive level

119. To which field is your new job most closely related? Choose up to 2 responses.
Note: If you do not see your exact field, please select the option(s) most closely related.
    [List of fields]

120. In what setting is your new job?
○ Academia, PhD-granting institution
○ Academia, non-PhD granting institution
○ Industry
○ Government
○ Other

121. What is the focus of your new job?
○ Research
○ Teaching
○ Administration
○ Technical
○ Administrative
○ Analytical
○ Management
○ Skilled labor
○ Developer
○ Operations
○ Other

122. What is your job title? (50 character limit) _____

123. What is the starting annual salary (in US dollars) for your job?
▼ $0 (23) ... More than $150,000 (22)

124. Which of the following apply to your new job?
❑ I received a signing bonus
❑ I received relocation funds
❑ I will relocate to a new area for my job
❑ I will be managing or supervising other staff
❑ None of the above [Exclusive answer]

125. To which country/location are you relocating for your position?
    [List of countries]

FUTURE PLANS: GRAD SCHOOL, ATTENDING OR APPLYING
You indicated your future plans include going back to school. We'd like to ask you a few questions related to going back to school.

126. Where are you in the application process? Select all that apply.
- ❑ Exploring my options
- ❑ Preparing applications
- ❑ Submitting applications
- ❑ Received waitlist notifications
- ❑ Received acceptance letters
- ❑ Accepted an offer from a program to which I applied
- ❑ None of the above [Exclusive answer]

[Display following question if "Received waitlist notifications"]
127. How many waitlist notifications did you receive? (Numbers only) _____

[Display following question if "Received acceptance letters"]
128. How many acceptance letters did you receive? (Numbers only) _____

[Display following section if "Preparing applications" or "Submitting applications"]
FUTURE PLANS: PREPARING AND SUBMITTING APPLICATIONS TO GO BACK TO SCHOOL
129. To which type of program are you applying to go back to school? Select all that apply.
Note: If you have not started the application process yet, please select the programs to which you are interested in applying.
- ❑ Certificate programs
- ❑ Associate's programs
- ❑ Bachelor's programs
- ❑ Master's programs
- ❑ Doctoral programs

130. Are you applying for on campus or online programs? Select all that apply.
Note: Please do not include temporary circumstantial changes to program formats due to the novel coronavirus (COVID-19).
- ❑ On campus only
- ❑ Online only
- ❑ Primarily on campus, but some courses are online
- ❑ Primarily online, but some courses are on campus

131. In which fields are you applying, or have you applied, for your future program? Select all that apply.
Note: If you do not see your exact field, please select the option(s) most closely related.
[List of fields]

[Display following section if Q126. is "Accepted an offer from a program to which I applied"]
FUTURE PLANS – GRAD SCHOOL, ACCEPTED OFFER
132. From which program did you accept an offer?
- ○ Certificate program
- ○ Associate's program
- ○ Bachelor's program
- ○ Master's program
- ○ Doctoral program

133. In which field will your program be? Choose up to 2 responses.

Note: If you do not see your exact field, please select the option(s) most closely related.
   [List of fields]

134. Will your program be full time or part time?
   ○ Full time
   ○ Part time
   ○ Non-degree earning student

135. Is your program on campus or online? *Note: Please do not include temporary circumstantial changes to program formats due to the novel coronavirus (COVID-19).*
   ○ On campus only
   ○ Online only
   ○ Primarily on campus, but some courses are online
   ○ Primarily online, but some courses are on campus

136. Will you have to re-locate to a new geographic location for your program?
   ○ Yes, I am relocating within the United States
   ○ Yes, I am relocating to a country outside of the United States.
   ○ No, I am not relocating. [Go to Question 140. or Question 145.]

137. To which country/location are you relocating for your program?
   [List of countries]

[Displayed if NOT selected Question 2.: Doctoral degree; AND
NOT selected Question 115.: Go back to school]
FUTURE PLANS: WHY NOT GO BACK TO SCHOOL?
138. Why are you not planning to go back to school? Choose up to 3 responses.
   ❑ I have personal and/or family obligations
   ❑ I do not feel academically prepared
   ❑ I am worried about financial support
   ❑ I want to take a break from school
   ❑ I am considering a job
   ❑ It takes too long to complete
   ❑ I do not see the value in it
   ❑ I think school is too difficult
   ❑ I am not interested in getting another degree
   ❑ I have already earned the highest degree I plan to attain
   ❑ Other; please specify: _____

139. How likely are you to apply for graduate programs in the future?
   ○ Not at all
   ○ A little
   ○ Somewhat
   ○ Quite a bit
   ○ Extremely

[Display Section "General Job Interest" if Q3. is "Less than 1 year" OR "1-5 years"]
GENERAL JOB INTEREST

140. How interested are you in having the types of jobs listed below?
   {Very uninterested; Somewhat uninterested; Neither uninterested nor interested; Somewhat interested; Very interested}
- College or university professor in computing field (**teaching focused**)
- College or university professor in computing field (**research focused**)
- K-12 computing teacher
- Computing researcher in industry
- Computing researcher in a government lab or agency
- A non-research computing position in industry (e.g., software engineer)
- A non-research computing position in government
- Entrepreneur (computing related; e.g., individual contractor; build a start-up)
- Non-computing career

[Display Section "Specific Career Interests" if Q3. is "Less than 1 year" OR "1-5 years"]
SPECIFIC CAREER INTERESTS
141. For your future career, in which setting would you like to work **the most**?
- ○ Academia
- ○ Industry
- ○ Government
- ○ Self-employment
- ○ Something else

142. How likely will your future career have a computing-related focus?
- ○ Extremely unlikely
- ○ Somewhat unlikely
- ○ Neither likely nor unlikely
- ○ Somewhat likely
- ○ Extremely likely

143. How likely will your future career have a research focus?
- ○ Extremely unlikely
- ○ Somewhat unlikely
- ○ Neither likely nor unlikely
- ○ Somewhat likely
- ○ Extremely likely

[Display if Q113. is NOT "I have already earned my highest degree"]
144. What job title would you like to have after you finish your highest degree? If you are uncertain, you are welcome to enter a job title that interests you the most (e.g., Professor; Software Engineer; Senior Researcher; etc. 50 character limit.)

_____

CAREER VALUES
145. How important to you is it that your career allows you to do each of the following?
   {Not at all; A little; A moderate amount; Quite a bit; Extremely}
- Make a lot of money
- Work independently

- Work collaboratively
- Spend a lot of time with my family and friends
- Have a social impact
- Have a flexible work schedule
- Be a role model
- Become well-known in my field
- Help others
- Build a strong professional network

146. In your opinion, to what extent would (or does) a <u>career in computing</u> allow you to do the following....
{Not at all; A little; A moderate amount; Quite a bit; Very much}
- Serve humanity
- Be in a position of influence in society
- Spend a lot of time with family

YOUR BACKGROUND
We have just a few more questions about your academics and background.

TEST SCORES
147. Have you taken the GRE?
- ❍ Yes
- ❍ No

[If Q147. is "No"]
148. Do you plan to take the GRE in the future?
- ❍ Yes, I plan to take the GRE in the future
- ❍ No, I do not plan to take the GRE in the future
- ❍ I am not sure yet

[If Q147. is "Yes"]
149. Please provide us with your GRE scores using numerical values. If you do not know your score, simply leave the space blank.
Verbal score:_____
Quantitative score:_____
Analytic writing score:_____

UPDATE DEMOGRAPHICS?
Our records indicate that on a past survey you completed for us, you answered our demographics questions. Here is the list of demographic questions we ask: *Gender identity   Race/ethnicity   Veteran status Citizenship status Disability status   Annual household income   Sexual orientation   Marital & family status   Family background*

150. If you think something has changed and you would like to update your demographic data, please indicate which sections you would like to update.
- ❑ Gender
- ❑ Race/ethnicity

- ❑ Veteran status
- ❑ Citizenship status
- ❑ Disability status
- ❑ Annual household income
- ❑ Sexual orientation
- ❑ Marital & family status
- ❑ Family history
- ❑ I do not need to update my demographic data

[Display all Demographics questions from T1 selected above]

RAFFLE BLOCK – ALL RESPONDENTS

151. If you are interested in being entered in the CRA raffle to win 1 of 150 $10.00(USD) gift cards to Amazon, please provide your email address. The email you provide will only be used to contact you if your name is drawn for the prize; it will not be used for any other purpose.

Email address:

This survey was developed by Computing Research Association's (CRA) Center for Evaluating the Research Pipeline (CERP). Please acknowledge CRA and CERP in all publications using this survey and direct other parties interested in obtaining the survey to CERP (cerp@cra.org).