

PROTOCOL TITLE: Assessing effectiveness of hands-on instruction in data management and computational literacy.

1) **Protocol Title:** Assessing effectiveness of hands-on instruction in data management and computational literacy.

2) **Authors of Protocol:** Dr. Erin Becker

3) **X UC Davis Researcher**

**Researcher from other institution**

**Private Sponsor**

**Cooperative Group**

**Other:** \_\_\_\_\_

4) **IRB Review History** *N/A*

5) **Objectives**

The purpose of the proposed study is to evaluate the effectiveness of short, intensive, hands-on workshops in teaching skills in data management, reproducible research and computational literacy.

6) **Background**

The generation of large, complex, digital datasets is now a standard component of research projects in fields ranging from biology to astronomy to the digital humanities. Researchers in many of these fields are not provided with formalized training in data management, reproducible research skills, and basic computational literacies, and are therefore not equipped to deal productively with this deluge of data. Lack of formal training in these skills often translates to researchers self-teaching and/or picking up these capabilities piecemeal. This strategy is unlikely to be maximally efficient, and opens the door for a variety of self-propagating errors.

The Carpentries (now including Data Carpentry and Software Carpentry, both fiscally sponsored not-for-profit projects of NumFOCUS) have been running hands-on workshops to teach researchers critical data analytic and computational literacy skills since 1998. Participant feedback suggests that these workshops are widely perceived by learners to improve their research productivity and decrease barriers faced in future learning of related skills.

A recently published study (Brazas MD & Ouellette BFF, 2016), cites self-reported evidence that short, intensive, hands-on training in bioinformatics skills positively impacts participants' career trajectories and research productivity. However, to our knowledge, no studies have reported direct assessment of the impact of this mode of instruction on participants' a) relevant computational skills, b) attitudes towards

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best-practices in computationally based research, or c) motivation to continue learning post instruction. The proposed study seeks to help fill these gaps in our understanding of the efficacy of workshop-based instruction for computational skills.

In addition, the Carpentries run an instructor training program to teach our volunteer instructors the pedagogical skills necessary to lead our workshops. The Carpentries are interested in assessing the impact of these training programs on instructors, particularly with respect to transforming instructor attitudes towards evidence-based pedagogical practices.

Participants in past workshops and instructor training events (between October 2015 and present) have previously provided survey data for quality control and quality assurance purposes. We are interested in using this past data both to a) understand the impact thus far of our workshops and training events on learners and b) evaluate the suitability of our currently existing survey instruments to measure our learners' computational skills, attitudes and motivations. This retrospective data will be vital to redeveloping our surveys to more rigorously test the effectiveness of our workshops.

## 7) Inclusion and Exclusion Criteria

For our purposes, a “learner” is someone who attends a Carpentry workshop or instructor training event. To be included in this study, participants must be

- a) learners at a Data Carpentry or Software Carpentry event between August 2016 and August 2018, **and**
- b) that event must take place within the United States of America (USA) or its territories and dependencies.

Because we will be recruiting participants from workshops and instructor training events, which are primarily affiliated with universities, this study will not include adults unable to consent or prisoners. Pregnant women will not be excluded from the study, but their participation in the study has no foreseeable effect on their pregnancy. Because workshop participants sometimes include undergraduates, a small number of minors under the age of 18 may be involved in workshops. Beginning August 2016, survey responses from minor participants will be excluded from this study on the basis of self-reported age.

Learners at past events (between October 2015 and present) have previously provided survey data for quality control and quality assurance purposes. This data was collected in unidentifiable form. Data from past participants in USA-based events (and its territories and dependencies) will also be included in the study. Because data has been collected anonymously, there is no way to exclude previously collected survey responses from minors under the age of 18. However, we expect there to be few, if any, of these participants as our workshops are targeted to graduate students and beyond.

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### **8) Number of Subjects**

Approximately 4,000 learners have already provided survey data. This data was collected for quality control and quality assurance purposes. Based on current capacity, we anticipate approximately 5,000-10,000 additional participants in USA-based workshops and training events within the two year study period. Future participants will be approximately 98% learners and 2% instructor trainees.

### **9) Recruitment Methods**

Participants will be recruited after signing up for a Data Carpentry or Software Carpentry workshop or instructor training event. Participants will receive a link to a pre-event survey prior to their event and a post-event survey at the end of or shortly after their event. The first page of both surveys will include information describing the study and what their participation entails. The information sheet will explain that participation in the event is not contingent upon answering the survey, that the study will be used to inform future instruction, and that their survey responses are confidential. Respondents are not currently offered any incentive for survey participation. Any future changes to incentivization will be submitted as an amendment to this protocol.

All participants and recruitment efforts will be within the US and its territories and dependencies. No personal health information will be accessed as a part of the study.

### **10) Study Timelines**

Participants will be notified about the study prior to their providing any survey data. Data collection will occur August 2016-August 2018 unless an extension is filed. Learners will remain as active participants during their events and their participation will cease after completing the post-event survey.

### **11) Study Endpoints**

Data collection will end August of 2018 unless an extension is filed.

### **12) Procedures Involved**

#### ***Data Collection***

Participant surveys - Links to online surveys will be provided to participants both before and/or either at the end of or shortly after events. For learners at workshops, these surveys will be designed to examine a) learner attitudes towards and values associated with reproducible research and computation, b) learner self-efficacy in workshop-related skills, c) direct measurement of learner skill, and d) learner perceptions of the workshop and instructors. For trainees at instructor training events, these surveys will be designed to examine a) trainee prior exposure to evidence-based pedagogical practices, b) instructor self-efficacy in our workshop settings, and c) trainee perceptions of the

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trainer(s) and content.

Current versions of these surveys are attached (see attached - **Appendix A - E**). Upon IRB approval, the introductory text for each survey will be replaced with the text from the **Survey Information Page**. These surveys will be undergoing development and modification in future. Updated versions will be submitted upon significant revision.

### **13) Data and Specimen Banking** *N/A*

### **14) Data Management and Confidentiality**

Data Analysis: Data will be analyzed to document changes in participants' understanding of and skill in using tools covered in the workshop/training event as well as changes in their attitudes and values related to workshop/training objectives. These analyses will use statistical procedures that are appropriate for the type of data and will include, but not be limited to regression, multilevel modeling, t-tests, and nonparametric tests (e.g., chi-squares, Wilcoxon analyses, etc.). In addition, descriptive statistics and qualitative analysis will be used to document participant attitudes and perceptions about the events.

Data security: Every effort will be made ensure confidentiality. All survey response data will be collected and stored anonymously. Respondents do not provide any identifying information on the survey. Anonymous survey responses are stored on a password-protected SurveyMonkey account.

### **15) Provisions to Monitor the Data to Ensure the Safety of Subjects**

*N/A*. This study does not involve more than minimal risk to subjects.

### **16) Withdrawal of Subjects**

There are no anticipated circumstances under which subjects will be withdrawn from the study without their consent. As all survey data is collected anonymously, respondents will not be able to retract data that they had previously submitted, but will be allowed to stop responding to surveys at any point.

### **17) Risks to Subjects**

Participants will not be exposed to any risks beyond those encountered in the course of their daily life.

### **18) Potential Benefits to Subjects**

There are no anticipated benefits to participants beyond the potential benefits associated with participating in the workshops/training events. However, by participating in the study, future event participants may benefit from improvements to curriculum and/or

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teaching practices resulting from the collected data.

**19) Vulnerable Populations** *N/A*

**20) Multi-Site Research**

Although workshops will be held in various locations, all data collection and management will be centralized. No un-anonymized data will be accessible to external participants (e.g. workshop hosts). Furthermore, only data from events held in the United States (or its territories and dependencies) will be included.

**21) Community-Based Participatory Research** *N/A*

**22) Sharing of Results with Subjects**

Results will not be shared with survey respondents. However, survey respondents may have access to publically reported results reported in summary form on Carpentry communication channels (e.g. Carpentry blogs).

**23) Setting**

Workshops will be held at locations throughout the United States of America, its territories and dependencies. Participants will be recruited from those registered for workshops or training events through email and asked to fill out the pre- and/or post-event surveys. Consent will be conducted as described above.

**24) Resources Available**

Dr. Erin Becker, Principle Investigator and Research Associate with the Department of Microbiology and Molecular Genetics, has two years experience working with educational research data, including sensitive personal identification data and interview responses. She has previously led curriculum and pedagogical innovation in other educational contexts and has worked with the Educational Effectiveness Hub in the Dept. of Undergraduate Education (formerly iAMSTEM Hub) to effect major course reforms at UC Davis.

Dr. Megan Welsh, and Assistant Professor in the School of Education, has lead evaluations of seven federally-funded STEM education programs, totalling \$3.2 million in grants. She has evaluated, or is currently evaluating: five graduate training programs in engineering and computer science funded through the Graduate Assistance in Areas of National Need (GAANN) program; an undergraduate training program designed to teach computer scientists to prevent hacking (funded through NSF's Transforming Undergraduate Education program); and efforts to train graduate students in a wide variety of disciplines in data science and data visualization techniques (funded through

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NSF's National Research Traineeships-Innovations in Graduate Education program).

Dr. Erin Becker will be responsible for communicating consent procedures, for developing survey instruments, and for ensuring compliance with UCD IRB policies and procedures.

Dr. Megan Welsh will oversee Dr. Becker's work and will be ultimately responsible for ensuring that human subjects protection is maintained.

**25) Prior Approvals** *N/A*

**26) Provisions to Protect the Privacy Interests of Subjects**

Every effort will be made to protect the privacy of the subjects. As described above, all data will be collected and stored anonymously. Furthermore, survey questions that will be asked of participants are similar to questions that are asked as a part of a normal course evaluation. These questions are not intrusive and should not cause the participant any discomfort.

**27) Compensation for Research-Related Injury** *N/A*

**28) Economic Burden to Subjects** There are no costs to the subjects for being involved in the study. Individual events may sometimes charge a nominal fee, but this fee is determined independently of participation in the study.

**29) Consent Process**

We are requesting a waiver of written documentation of consent. In lieu of written consent, all participants will be provided with an information page as the first page of the online survey (see attached **Appendix F-G**). This page will inform participants that they are taking part in a study that is designed to improve our curriculum, instructional methods, and support for learners. It will inform participants that their participation in the study is voluntary and unrelated to their ability to participate in Carpentry workshops, and will cease once they have completed the survey. Furthermore, it will inform them of the potential risks and benefits to participating in the study (stated above). The PI's contact information and IRB contact information will also be provided.

The activities in this project present no risk to the participants and are considered normal instructional practices that routinely occur outside of the study context and do not typically require written consent. Furthermore, survey responses are collected anonymously. There is minimal to no risk involved in completing the surveys.

**30) Process to Document Consent in Writing**

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We are requesting a waiver of written documentation of consent. See above (#29).

**31) Drugs or Devices** *N/A*

## **References**

1. Brazas MD & Ouellette BFF. Continuing Education Workshops in Bioinformatics Positively Impact Research and Careers. PLOS Comput Biol. 2016;12: e1004916. doi:10.1371/journal.pcbi.1004916

### Data Carpentry Pre-Workshop Survey

To help optimize the upcoming Data Carpentry workshop for participants, the organizers need to know about your existing data and programming skills. The information you provide also will allow us to track changes in skill level that may occur as a result of the workshop. The survey should take approximately 10 minutes to complete.

Your participation is voluntary. There are no direct benefits or risks to you for participating, and no compensation. You may quit at any time or skip any item. Your IP address will be registered; however, your responses will remain anonymous. Thank you for your help.

\* 1. I consent to taking this survey.

Yes

\* 2. When are you taking this survey?

I am taking this survey before coming to the workshop

I am taking this survey at the workshop (and I have not previously taken a survey for this workshop)



## DC Pre-workshop survey

\* 3. Please select the workshop you are attending. Events are listed in chronological order.

4. Will this be your first time attending a Data Carpentry workshop (as a learner)?

Yes

No

## DC Pre-workshop survey

### About the Student

First we would like to know a bit about your background. Please note that Data Carpentry assumes no specific prior experience with data analysis, management or programming!

#### 5. Which of the following describes your current status?

- Undergraduate student
- Graduate Student
- Post-doc
- Faculty
- Industry
- Staff
- Other (please specify)

#### 6. Your department or division (e.g. Microbiology and Molecular Genetics, Environmental Engineering, Sociology, etc):

7. Your research discipline

- Administration
- Brain and neuroscience
- Chemistry
- Computer science and electrical engineering
- Earth sciences (geology, oceanography, meteorology)
- Economics
- Engineering (civil, mechanical, chemical)
- Humanities
- Life science (biology, genetics)
- Life science (ecology, zoology, botany)
- Medicine
- Physics
- Public health
- Statistics
- Space sciences
- Tech support, lab tech, or support programmer
- Other (please specify)

8. In three sentences or less, please describe your current field of work or research question.

9. What operating system is on the computer you are bringing to the workshop?

- Apple OS
- Linux
- Windows
- Not sure

10. Will you be attending the workshop with colleagues, friends, or classmates?

Yes

No

Not sure

## DC Pre-workshop survey

About your current data analysis practices

The next set of questions asks about your current data analysis practices. Again, please remember that this workshop assumes no prior knowledge or experience!

11. How often to you currently use programming languages (R, Python, etc.) or databases (Access, SQL, etc.)?

- I have never programmed
- Less than once a year
- Several times a year
- Monthly
- Weekly
- Daily
- Not sure

12. What tools do you frequently use to manage and/or analyze data? Check all that apply.

- Excel or other spreadsheet program
- FileMaker Pro or Microsoft Access
- SQL
- R
- Python
- MATLAB
- Open Refine
- the command line (shell)
- Not sure
- Other (please specify)

13. Do you currently have a dataset that you would like to analyze?

- Yes, and I've already done a fair bit of analysis.
- Yes, I have data but I haven't started analyzing it yet.
- I am working on generating data.
- I do not have data yet.

14. Please enter your level of satisfaction with your current:

	Very unsatisfied	Unsatisfied	Neutral	Satisfied	Very satisfied	Not sure	Not applicable
Data management strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data analysis workflow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. Please rate your level of agreement with the following statements:

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Data organization is a fundamental component of effective and reproducible research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using a scripting language like R or Python can ultimately improve my analysis efficiency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using R or Python makes analyses easier to reproduce	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A value of using SQL, R or Python is that the underlying data cannot accidentally be changed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Please share what you most hope to learn from attending this workshop.

\* 17. Does this workshop take place in the United States?

- Yes
- No

## DC Pre-workshop survey

### 18. Your age

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- Over 75
- Prefer not to say

### 19. Your gender

- Female
- Male
- Prefer not to say
- Other (please specify)

### 20. Race/Ethnicity

- American Indian or Alaskan Native
- Asian / Pacific Islander
- Black or African American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White / Caucasian
- Prefer not to say
- Other (please specify)

Thank you for completing this survey.



## DC Post-workshop survey

### Data Carpentry Post-workshop Survey

The organizers of the Data Carpentry Workshop are very interested in your feedback! The information you provide will be used to improve future workshops. The survey should take approximately 10 minutes to complete.

Your participation is voluntary. There are no direct benefits or risks to you for participating, and no compensation. You may quit at any time or skip any item. If you respond via email, your IP address will be registered; however, your responses will remain anonymous. Thank you for your help.

\* 1. I consent to this survey.

Yes

\* 2. When are you taking this survey?

I have just completed the workshop, and am taking it at the event

I have recently completed the workshop, and am taking it after I left the event

## DC Post-workshop survey

\* 3. Please select the workshop you are attending. Events are listed in chronological order.

If your workshop is not listed above please enter the location and date below.

4. Is this your first time in a Data Carpentry workshop as a learner?

yes

no

## DC Post-workshop survey

### About the learner

5. What is your domain of research (i.e. microbiology, ecology, social science, humanities, etc)

6. What is your career stage?

- Undergraduate student
- Graduate student
- Postdoc
- Professor
- Staff
- Other (please specify)

7. Rate your level of involvement in the activities of this workshop.

- Somewhat involved
- Very involved
- Enthusiastically involved

8. How much practical knowledge have you gained from this workshop?

- A great deal
- Some practical knowledge
- None

## DC Post-workshop survey

### General Evaluation of the Workshop

9. Compared to before the workshop I have a better understanding of how to...

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	NA/Not covered at this workshop
Effectively organize data in spreadsheets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use OpenRefine for data cleaning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Import a file into Python and work with the data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Import a file into R and work with the data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do initial visualizations in Python	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do initial visualizations in R	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Construct a SQL query statement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use the command line	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Please rate the level of your data management and analysis skills prior to the workshop.

- Very low
- Low
- Neither high nor low
- High
- Very high

11. Please rate your level of data management and analysis skills following the workshop.

- About the same
- Somewhat higher
- Higher
- Much higher

12. Please rate your level of agreement with the following statements

Strongly disagree      Disagree      Neutral      Agree      Strongly agree

Data organization is a fundamental component of effective and reproducible research.

                      

Using a scripting language like R or Python can ultimately improve my analysis efficiency

                      

Using R or Python makes analyses easier to reproduce

                      

A value of using SQL, R or Python is that the underlying data cannot accidentally be changed

                      

13. I can immediately apply what I learned at this workshop.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

14. This workshop was worth my time.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

15. The material presented matched the workshop description.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Strengths and weaknesses

16. What are the major strengths of this workshop?

17. What are the major weaknesses of this workshop?

## DC Post-workshop survey

### Evaluation of the instructors

18. Please answer the following questions.

	Never	Sometimes	Usually	Most of the time	Always
Could you get clear answers to your questions from the instructors?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Were the instructors considerate to you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Were the instructors effective in teaching in the workshop?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Were the instructors enthusiastic about the workshop?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Any other comments about the instructors

\* 20. Was the workshop held in the United States?

- yes  
 no



Demographics

21. Which race/ethnicity best describes you?

- American Indian or Alaskan Native
- Asian/Pacific Islander
- Black/African American
- Hispanic or Latino
- Native Hawaiian or other Pacific Islander
- White/Caucasian

Other (please specify)



## SWC - Pre-workshop Survey 2015-2016

### Pre-Workshop Survey - Intro

The organizers of the Software Carpentry Workshop are very interested in your feedback! The information you provide will be used to improve future workshops. The survey should take approximately 10 minutes to complete.

Your participation is voluntary. There are no direct benefits or risks to you for participating, and no compensation. You may quit at any time or skip any item. If you respond via email, your IP address will be registered; however, your responses will remain anonymous.

Thank you for your help. By selecting the box below you acknowledge that you have read the information and agree to participate in this survey. If you do not wish to participate, please close your browser at this time.

**If you have already taken this survey for this particular workshop, PLEASE DO NOT TAKE IT AGAIN .** In this way we can have roughly the same number of pre- and post-survey responses.

\* 1. I consent to this survey

Yes

\* 2. When are you taking this survey?

I am taking this survey before coming to the workshop

I am taking this survey at the workshop (and I have not previously taken a survey for this workshop)



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SWC - Pre-workshop Survey 2015-2016

## About this workshop

**We'd like to get some general feedback about your experience at this workshop**

\* 3. Please select the workshop you are attending. Events are listed in chronological order.

\* 4. Will this be your first time attending a Software Carpentry Workshop (as a learner)?

Yes

No



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## SWC - Pre-workshop Survey 2015-2016

### Questions for returning learners

**We'd like to know more about people who are taking a Software Carpentry workshop again.**

5. How long ago did you attend a Software Carpentry workshop?

- In the last 30 days
- 1-5 months ago
- 6 months or more
- Not sure
- Other (please specify)

6. Why did you attend another workshop? (Select all that apply)

- To refresh/review skills
- To cover new/additional topics
- To network
- To help host/run a workshop
- To become a Software Carpentry helper/instructor
- Other (please specify)



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## SWC - Pre-workshop Survey 2015-2016

### Questions for first-time learners

#### We'd like to know more about why you are taking the workshop

7. In a few words, what is your most important reason for attending this workshop?

8. Below are some reasons we think people come to Software Carpentry workshops. Some of these reasons may overlap with the reasons you suggested above. How important were these reasons to you?

	Not at all important	Slightly important	Important	Very important	N/A
Improve your ability to use software and tools related to your research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Automate your analysis or computation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve the reproducibility of your work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Network with other workshop attendees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Refresh or update skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Besides the course content, what importance did the following factors have on your choice to attend the workshop?

	Not important at all	Slightly important	Important	Very important	Extremely important
Attending an in-person/live workshop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Location and timing of workshop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning with friends/colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

10. How soon do you anticipate using the skills you learn at the workshop?

- Immediately
- In the next 30 days
- In the next 6 months
- More than 6 months from now
- I am not sure when

11. How did you hear about Software Carpentry? (Select all that apply)

- Friend/colleague
- Conference/meeting/seminar
- Institution mailing list or flyer
- Funding organization or program officer
- Journal or publication
- Our website
- Social Media (Twitter, Facebook, etc.)
- Other (please specify)

12. If you experienced any strong concerns about attending this workshop, can you let us know what they were? Did we address these concerns, or were there ways we could have addressed them?



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## SWC - Pre-workshop Survey 2015-2016

### Your attitudes about the workshop topics

We would like to know more about how you felt about the workshop topics before and after the workshop.

**Tip:** If you are not sure a topic will be covered at your workshop, simply leave that portion of the question blank or select the N/A options in the drop-down menus

13. Tell us about your experience with the following topics:

	Current knowledge	Perception about this topic
Unix Shell	<input type="text"/>	<input type="text"/>
Git (version control)	<input type="text"/>	<input type="text"/>
Python	<input type="text"/>	<input type="text"/>
R	<input type="text"/>	<input type="text"/>
SQL	<input type="text"/>	<input type="text"/>

14. Tell us about how relevant you think these topics are to your research:

	Relevance to your research
Unix Shell	<input type="text"/>
Git (version control)	<input type="text"/>
Python	<input type="text"/>
R	<input type="text"/>
SQL	<input type="text"/>

15. How would you rate your motivation to learn about these topics?

	N/A - Not relevant to me/Not sure what this is	Not at all motivated	Slightly motivated	Motivated	Very motivated	Extremely motivated
Unix shell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Git (version control)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Python	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SQL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. How would you describe your ability to do the following tasks?

	Can you do this?
Use pipes to connect shell commands	<input type="text"/>
Write a 'for loop' to automate a task	<input type="text"/>
Initialize a repository with git	<input type="text"/>
Write a function	<input type="text"/>
Import a library or package (Python or R)	<input type="text"/>
Write a unit test (Python or R)	<input type="text"/>
Write an SQL query	<input type="text"/>





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SWC - Pre-workshop Survey 2015-2016

## About You

**Please give us only any information you are comfortable sharing.  
Remember - you may skip this section or any question in this section**

17. What is your current position?

- Undergraduate Student
- Graduate Student
- Post-doctoral researcher
- Faculty
- Research staff (including research programmer)
- Support staff (including technical support)
- Librarian/archivist
- Commercial software developer
- Other (please specify)

18. What is your domain of research/study?

- Chemistry
- Civil, mechanical, chemical, or nuclear engineering
- Economics/business
- Education
- High performance computing
- Humanities
- Life Sciences (Genetics, genomics, bioinformatics )
- Life Science - Organismal/systems (ecology, botany, zoology, microbiology, neuroscience)
- Library and information science
- Mathematics/statistics
- Medicine and/or Pharmacy
- Physics
- Planetary sciences (geology, climatology, oceanography, etc.)
- Psychology
- Social sciences
- Space sciences
- Other (please specify)

19. What is your gender?

- Female
- Male
- Other
- Prefer not to say

\* 20. Was the workshop held in the United States?

- Yes
- No



SWC - Pre-workshop Survey 2015-2016

Voluntary Self-identification

**In the interests of improving diversity, we would like to collect additional demographic information. This information is collected anonymously and is completely voluntary.**

21. Which race/ethnicity best describes you? (Please choose only one.)

- American Indian or Alaskan Native
- Asian / Pacific Islander
- Black or African American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White / Caucasian
- Prefer not to say
- Multiple ethnicity / Other (please specify)



# software carpentry

SWC - Pre-workshop Survey 2015-2016

Thanks

**Thank you for your feedback!**



# software carpentry

## SWC - Post-workshop Survey 2016

### Post Workshop Survey - Intro

The organizers of the Software Carpentry Workshop are very interested in your feedback! The information you provide will be used to improve future workshops. The survey should take approximately 10 minutes to complete.

Your participation is voluntary. There are no direct benefits or risks to you for participating, and no compensation. You may quit at any time or skip any item. If you respond via email, your IP address will be registered; however, your responses will remain anonymous.

Thank you for your help. By selecting the box below you acknowledge that you have read the information and agree to participate in this survey. If you do not wish to participate, please close your browser at this time.

**Please do not take this survey until after you have completed the workshop .**

\* 1. I consent to this survey

Yes

\* 2. When are you taking this survey?

I have just completed the workshop, and am taking it at the event

I have recently completed the workshop, and am taking it after I left the event



# software carpentry

## SWC - Post-workshop Survey 2016

### About this workshop

We'd like to get some general feedback about your experience at this workshop

\* 3. Please select the workshop you attended

  

4. Please give us some feedback about the overall workshop

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The amount of information covered at the workshop was reasonable for allotted time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The overall atmosphere of the workshop was welcoming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I learned skills that I will be able to use in my research/work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The material presented matched the workshop description	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would recommend this workshop to a friend/colleague	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The workshop was worth my time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How did you perceive the pace of the workshop?

- Too slow
- Slightly slow
- Just right
- Slightly fast
- Too fast

6. How was the balance of lecture to hands-on work?

- Too much lecture
- Slightly too much lecture
- Balanced (lecture/hands-on)
- Slightly too much hands-on
- Too much hands-on



# software carpentry

## SWC - Post-workshop Survey 2016

### About the Instructors and Helpers

Here we'd like to know how you found our instructors and helpers did in running the workshop

7. Please select how you felt the instructors performed as a team

	Never	Rarely	Sometimes	Often	All of the time
Instructors gave clear answers to your questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instructors were considerate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instructors were good communicators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instructors were enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Please select how you felt the helpers performed as a team

	Never	Rarely	Sometimes	Often	All of the time
Helpers gave clear answers to your questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helpers were considerate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helpers were good communicators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helpers were enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Were there enough helpers at the workshop?

- Yes
- No



10. Do you have specific comments about the instructors or helpers?



# software carpentry

## SWC - Post-workshop Survey 2016

### Your attitudes about the workshop topics

#### We would like to know more about how you felt about the workshop topics before and after the workshop

11. How much of the information presented at this workshop was new to you?

- None of it
- Some of it
- About half of it
- Most of it
- All of it

**Tip:** If a topic was not covered at your workshop, simply leave that portion of the question blank or select the N/A options in the drop-down menus

12. Before the workshop tell us about your experience with these topics.

	Pre-workshop knowledge	Perception about this topic
Unix Shell	<input type="text"/>	<input type="text"/>
Git (version control)	<input type="text"/>	<input type="text"/>
Python	<input type="text"/>	<input type="text"/>
R	<input type="text"/>	<input type="text"/>
SQL	<input type="text"/>	<input type="text"/>

13. After the workshop tell us about changes in your knowledge and perception about these topics.

	Did your knowledge increase?	Is this topic more or less intimidating?
Unix Shell	<input type="text"/>	<input type="text"/>
Git (version control)	<input type="text"/>	<input type="text"/>
Python	<input type="text"/>	<input type="text"/>
R	<input type="text"/>	<input type="text"/>
SQL	<input type="text"/>	<input type="text"/>

14. After the workshop, how did your motivation to learn more about these topics change?

	Less motivated	Slightly less motivated	No change in motivation	More motivated	Much more motivated	N/A - Topic not covered
Unix shell	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Git (version control)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Python	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
R	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SQL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. How would you describe your ability to do the following tasks?

	Could you do this before the workshop?	After the workshop, what is your level of confidence?
Use pipes to connect shell commands	<input type="text"/>	<input type="text"/>
Write a 'for loop' to automate a task	<input type="text"/>	<input type="text"/>
Initialize a repository with git	<input type="text"/>	<input type="text"/>
Write a function	<input type="text"/>	<input type="text"/>
Import a library or package (Python or R)	<input type="text"/>	<input type="text"/>
Write a unit test (Python or R)	<input type="text"/>	<input type="text"/>
Write an SQL query	<input type="text"/>	<input type="text"/>



# software carpentry

## SWC - Post-workshop Survey 2016

### About You

**Please give us only any information you are comfortable sharing.  
Remember - you may skip this section or any question in this section**

16. What is your current position?

- Undergraduate Student
- Graduate Student
- Post-doctoral researcher
- Faculty
- Research staff (including research programmer)
- Support staff (including technical support)
- Librarian/archivist
- Commercial software developer
- Other (please specify)

17. What is your domain of research/study?

- Chemistry
- Civil, mechanical, chemical, or nuclear engineering
- Economics/business
- Education
- High performance computing
- Humanities
- Life Sciences (Genetics, genomics, bioinformatics )
- Life Science - Organismal/systems (ecology, botany, zoology, microbiology, neuroscience)
- Library and information science
- Mathematics/statistics
- Medicine and/or Pharmacy
- Physics
- Planetary sciences (geology, climatology, oceanography, etc.)
- Psychology
- Social sciences
- Space sciences
- Other (please specify)

18. What is your gender?

- Female
- Male
- Other
- Prefer not to say

\* 19. Was the workshop held in the United States?

- Yes
- No



SWC - Post-workshop Survey 2016

Voluntary Self-identification

**In the interests of improving diversity, we would like to collect additional demographic information. This information is collected anonymously and is completely voluntary.**

20. Which race/ethnicity best describes you? (Please choose only one.)

- American Indian or Alaskan Native
- Asian / Pacific Islander
- Black or African American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White / Caucasian
- Prefer not to say
- Multiple ethnicity / Other (please specify)



# software carpentry

## SWC - Post-workshop Survey 2016

### Final comments

**We really appreciate you making it through the survey. Below, we ask you to summarize your overall experience with Software Carpentry. If you wish, here is a space to comment in your own words**

21. How likely is it that you would recommend Software Carpentry to a friend or colleague?

Not at all likely

Extremely likely

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

22. Any comments on what was the best thing about this workshop?

23. Any comments on what needed the most improvement at this workshop?



# software carpentry

SWC - Post-workshop Survey 2016

Thanks

**Thank you for your feedback!**



## Instructor-Training-Post-workshop Survey 2016

### Post Workshop Survey - Intro

The organizers of instructor training for Software and Data Carpentry are very interested in your feedback! The information you provide will be used to improve future trainings. The survey should take approximately 10 minutes to complete.

Your participation is voluntary. There are no direct benefits or risks to you for participating, and no compensation. You may quit at any time or skip any item. If you respond via email, your IP address will be registered; however, your responses will remain anonymous.

Thank you for your help. By selecting the box below you acknowledge that you have read the information and agree to participate in this survey. If you do not wish to participate, please close your browser at this time.

**Please do not take this survey until after you have completed the training event .**

\* 1. I consent to this survey

Yes

\* 2. When are you taking this survey?

I have just completed the training, and am taking it at the event

I have recently completed the training, and am taking it after I left the event

# Instructor-Training-Post-workshop Survey 2016

## About this workshop

**We'd like to get some general feedback about your experience at this training event**

\* 3. Please select the training event you attended

4. Please give us some feedback about the overall training event

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The amount of information covered was reasonable for allotted time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The overall atmosphere was welcoming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I learned skills that I will be able to use in my teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The material presented matched the description of the training event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would recommend this training to a friend/colleague	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The training was worth my time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How did you perceive the pace of the training?

- Too slow
- Slightly slow
- Just right
- Slightly fast
- Too fast

6. How was the balance of lecture to hands-on work?

- Too much lecture
- Slightly too much lecture
- Balanced (lecture/hands-on)
- Slightly too much hands-on
- Too much hands-on

About the Instructors and Helpers

Here we'd like to know how you found the instructor trainer(s) did in running the training event

7. Please select how you felt the instructor trainer(s) performed

	Never	Rarely	Sometimes	Often	All of the time
Instructor trainer(s) gave clear answers to your questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instructor trainer(s) were considerate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instructor trainer(s) were good communicators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instructor trainer(s) were enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Do you have specific comments about the instructor trainer(s)?

## Instructor-Training-Post-workshop Survey 2016

### Your attitudes about the workshop topics

#### We would like to know more about how you felt about the training content both before and after the workshop

9. How much of the information presented at this training event was new to you?

- None of it
- Some of it
- About half of it
- Most of it
- All of it

10. Tell us about your experience with these topics **before** the training

	Little or no knowledge of topic	Some knowledge of topic	Extensive knowledge of topic
Formative vs. summative assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Giving effective feedback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What makes someone a novice or expert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How human memory works	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cognitive load	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What the Carpentries are and what they do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Backwards design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Levels of cognition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Tell us about changes in your knowledge of these topics **after** the training event.

	No increase in my knowledge	Knowledge increased slightly	Knowledge increased a great deal	N/A - Not covered at this workshop
Formative vs. summative assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Giving effective feedback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What makes someone a novice or expert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How human memory works	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cognitive load	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What the Carpentries are and what they do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Backwards design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Levels of cognition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. After the workshop, how did your motivation to learn more about these topics change?

	Less motivated	Slightly less motivated	No change in motivation	More motivated	Much more motivated	N/A - Topic not covered
Formative vs. summative assessment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Giving effective feedback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What makes someone a novice or expert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How human memory works	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cognitive load	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What the Carpentries are and what they do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Backwards design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Levels of cognition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. How would you describe your ability to do the following tasks?

	Could you do this before the workshop?	After the workshop, what is your level of confidence?
Teach using live coding	<input type="text"/>	<input type="text"/>
Set up a workshop website	<input type="text"/>	<input type="text"/>
Use a concept map for lesson planning	<input type="text"/>	<input type="text"/>
Write a multiple choice question with diagnostic power	<input type="text"/>	<input type="text"/>
Write effective learning objectives	<input type="text"/>	<input type="text"/>

14. Do you have a clear understanding of what needs to be done to complete instructor training?

- No, not clear at all
- Could use some more details
- Yes, I understand
- Other (please specify)

About You

**Please give us only any information you are comfortable sharing.  
Remember - you may always skip questions**

15. What is your current position?

- Undergraduate Student
- Graduate Student
- Post-doctoral researcher
- Faculty
- Research staff (including research programmer)
- Support staff (including technical support)
- Librarian/archivist
- Commercial software developer
- Other (please specify)



16. What is your domain of research/study?

- Chemistry
- Civil, mechanical, chemical, or nuclear engineering
- Economics/business
- Education
- High performance computing
- Humanities
- Life Sciences (Genetics, genomics, bioinformatics )
- Life Science - Organismal/systems (ecology, botany, zoology, microbiology, neuroscience)
- Library and information science
- Mathematics/statistics
- Medicine and/or Pharmacy
- Physics
- Planetary sciences (geology, climatology, oceanography, etc.)
- Psychology
- Social sciences
- Space sciences
- Other (please specify)

\* 17. Was the workshop held in the United States?

- Yes
- No

Voluntary Self-identification

**In the interests of improving diversity, we would like to collect additional demographic information. Like all other parts of this survey, this information is anonymous and completely voluntary.**

18. Which race/ethnicity best describes you? (Please choose only one.)

- American Indian or Alaskan Native
- Asian / Pacific Islander
- Black or African American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White / Caucasian
- Prefer not to say
- Multiple ethnicity / Other (please specify)

19. What is your gender?

- Female
- Male
- Other
- Prefer not to say

## Final comments

**We really appreciate you making it through the survey. Below, we ask you to summarize your overall experience with the Software and Data Carpentry training experience. If you wish, here is a space to comment in your own words**

20. How likely is it that you would recommend a Software and/or Data Carpentry workshop to a friend or colleague?

Not at all likely

Extremely likely

0	1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	---	----

21. Any comments on what was the best thing about this training event?

22. Any comments on what needed the most improvement at this training event?

Thanks

**Thank you for your feedback!**

## **Consent to Participate in Research**

### Evaluating Effectiveness of Data Carpentry and Software Carpentry Training

#### **Introduction and Purpose**

My name is Erin Becker and I am the Associate Director of Data Carpentry. Thank you for volunteering to take part in our research study, which is about understanding the effectiveness of our workshops. To participate in the study, you will complete a short survey about your skills and attitudes related to our workshop content before and after your workshop. Depending on your location, the survey will be 20-23 questions long and will take approximately 15-20 minutes to complete.

#### **Confidentiality**

Your responses will be recorded anonymously. If you respond via email, your IP address will be registered; however, your responses will remain anonymous.

#### **Risks and Benefits**

There are no direct risks or benefits to you from filling out this survey, and no compensation. We hope to use these results to improve workshops for future learners.

#### **Consent**

**You are not required to take this survey to participate in our workshop.** You may quit the survey at any time or skip any item other than those required to correctly sort your responses.

If you have any questions about the study, please contact Erin Becker, Associate Director of Data Carpentry at [ebecker@datacarpentry.org](mailto:ebecker@datacarpentry.org) or [eribecker@ucdavis.edu](mailto:eribecker@ucdavis.edu) or Megan Welsh, Assistant Professor of Education at the University of California, Davis at [megwelsh@ucdavis.edu](mailto:megwelsh@ucdavis.edu).

If you have any questions about your rights or treatment as a research participant in this study or would like to provide input about this research, please contact the University of California at Davis' IRB Board at (916) 703-9151, [IRBAdmin@ucdmc.ucdavis.edu](mailto:IRBAdmin@ucdmc.ucdavis.edu), or 2921 Stockton Blvd, Suite 1400, Room 1429, Sacramento, CA 95817.

## **Consent to Participate in Research**

### Evaluating Effectiveness of Data Carpentry and Software Carpentry Training

#### **Introduction and Purpose**

My name is Erin Becker and I am the Associate Director of Data Carpentry. Thank you for volunteering to take part in our research study, which is about understanding the effectiveness of our instructor training program.

#### **Confidentiality**

In order to understand the impact of our instructor training program, we are collecting information about learners' attitudes and skills related to our content before and after the workshops. Your responses will be recorded anonymously. If you respond via email, your IP address will be registered; however, your responses will remain anonymous.

#### **Risks and Benefits**

There are no direct risks or benefits to you from filling out this survey, and no compensation. We hope to use these results to improve workshops for future learners.

#### **Consent**

**You are not required to take this survey to participate in our workshop.** You may quit the survey at any time or skip any item other than those required to correctly sort your responses.

If you have any questions about the study, please contact Erin Becker, Associate Director of Data Carpentry at [ebecker@datacarpentry.org](mailto:ebecker@datacarpentry.org) or [eribecker@ucdavis.edu](mailto:eribecker@ucdavis.edu).

If you have any questions about your rights or treatment as a research participant in this study or would like to provide input about this research, please contact the University of California at Davis' IRB Board at (916) 703-9151, [IRBAdmin@ucdmc.ucdavis.edu](mailto:IRBAdmin@ucdmc.ucdavis.edu), or 2921 Stockton Blvd, Suite 1400, Room 1429, Sacramento, CA 95817.