

Data Science for Environmental Health (DaSEH) Pre-course survey

Thank you for taking the time to participate in this survey. We are collecting data about user experience with our course to learn more about how to improve the data science education experience. This data may ultimately be used for a research publication and reporting to the NIH.

DATA CONFIDENTIALITY: We will collect your name in order to track your progress through the course. We will also ask optional demographic information. The potential risks to you are small. The potential benefits to the community of data scientists, developers, and professors are very high – we will be able to learn how we can improve data science/environmental health education material.

DATA SHARING: We plan to release the data collected from this survey only in aggregate form using GitHub (<https://github.com/>). No personally identifiable information (such as your name or response timestamp) will be shared.

PARTICIPATION: You must be 18 or over to participate. You will be asked a series of questions about you, your institution type, your prior experience, and your expectations for the course. You can stop participating in the survey at any point. You do not need to answer optional questions. Only answers that are submitted by clicking the submit button at the end of the survey will be recorded. Depending on how you answer the survey, this will take ~10 minutes to complete. You will have an opportunity before submission to edit your responses. Any answers that are ultimately submitted (and not removed by the participant) will continue to be used for research.

General information about traffic to the case study websites and our main website (<https://daseh.org/>) is being tracked by Google Analytics (<https://analytics.google.com>). This provides us with summary information such as the number of visitors from different countries. We will not use this to try to identify who has submitted a survey response.

RISK: Risk of participation is minimal. The questions we ask pose minimal security risk to participants as they focus on your personal experience and expectations. Demographic questions are optional. While we have taken measures to ensure the security of the survey responses, please be aware that no online system is completely secure. By participating in this survey, you understand and accept the inherent risks associated with transmitting information over the internet.

CONSENT: The first questions will ask about your age and if you consent (or agree) that the data from your responses be used for research purposes.

QUESTIONS OR PROBLEMS: If you have questions or problems, email Ava Hoffman at ahoffma2@fredhutch.org or contact us through the anonymous Code of Conduct [Reporting Form](#).

You may also contact the Fred Hutchinson Cancer Center IRB Office if you have questions about your rights as a participant. Contact the IRB if you feel you have not been treated fairly or if you have other concerns.

This study has been deemed exempt by the Fred Hutchinson Cancer Center IRB, specifically Exempt status (Category (2)(ii) Tests, surveys, interviews, or observation (low risk)). Thus, the proposed activity does not qualify as human subjects research as defined by DHHS regulations 45 CFR 46.102, and does not require IRB oversight.

IRB No.: FHIRB0020064
Date Approved: 3/19/2024

The IRB contact information is:
Address: Fred Hutch Cancer Center Institutional Review Office
1100 Fairview Ave. N. Mail Stop J2-100, Seattle, WA 98109
Telephone: 206-667-5900
E-mail: iro@fredhutch.org

* Indicates required question

1. Are you 18 or over? *

You cannot participate in this survey if you are under 18.

Mark only one oval.

☐ Yes

☐ No *Skip to section 9 (Review Responses)*

2. **Do you consent to your responses being used for research purposes?** *

Please see the description at the beginning of the survey for more information. Use the back button within this survey if you wish to see it again.

Mark only one oval.

☐ Yes

☐ No *Skip to section 9 (**Review Responses**)*

General Information

Here we are asking general information about you.

3. **First or Given Name:** *

This will only be used to match any of your survey responses through time.

4. **Last or Family Name:** *

This will only be used to match any of your survey responses through time.

5. **Which best describes your current role?**

Mark only one oval.

☐ Student

☐ Postdoctoral Researcher

☐ Faculty / Instructor

☐ Professional in Government or Industry

☐ Other: _____

6. **Which of the following best describes your gender identity?**

Please select the options that best fit you. You may choose not to respond if you prefer.

Check all that apply.

☐ Male

☐ Female

☐ Transgender Male

☐ Transgender Female

☐ Non-binary

☐ Genderqueer

☐ Genderfluid

☐ Prefer not to respond

☐ Other: _____

7. **Please select one or more categories to indicate what you consider to be your ethnic/racial background.**

You may choose not to respond if you prefer.

Check all that apply.

- ☐ Asian / Asian American
- ☐ Black / African / African American
- ☐ Hispanic / Latino / Latina / Latinx
- ☐ Middle Eastern / North African
- ☐ Native American / Alaska Native
- ☐ Native Hawaiian / Pacific Islander
- ☐ White / European American
- ☐ Prefer not to respond
- ☐ Other: _____

8. **What additional identities do you hold that are important to you?**

Select all that apply. You may choose not to respond if you prefer.

Check all that apply.

- ☐ Lesbian / Gay / Bisexual
- ☐ Asexual / Aromantic
- ☐ Disabled / Person with a disability
- ☐ Veteran / Military Service Member
- ☐ Immigrant
- ☐ First-Generation College Student
- ☐ Low-income / Economically Disadvantaged
- ☐ Older Adult (Age 50+)
- ☐ Religious Minority
- ☐ Prefer not to respond
- ☐ Other: _____

9. **Do you work or study at an academic institution?**

*

An academic institution typically grants academic degrees. Please select "Yes" if you are a student, or work more than 50% of the time at an academic institution.

Mark only one oval.

- ☐ Yes *Skip to question 10*
- ☐ No *Skip to question 11*

Academic Institution Information

Here we are asking about your institution.

10. **Which of the following describe your institution?**

Select any that apply. You may also use the "Other" option to describe.

If you aren't sure, you can look up your research institution status [here](#). You can look up minority-serving status [here](#).

Check all that apply.

- ☐ Doctoral Universities – Very high research activity ("R1")
- ☐ Doctoral Universities – High research activity ("R2")
- ☐ Master's College or University
- ☐ Primarily Undergraduate Institution (PUI)
- ☐ Community College
- ☐ Historically Black College or University (HBCU)
- ☐ Hispanic Serving Institution (HSI)
- ☐ Tribal College or University (TCU)
- ☐ Native American-Serving, Nontribal Institutions (NASNTI)
- ☐ Asian American and Native American Pacific Islander-Serving Institution (AANAPISI)
- ☐ Other under-resourced institution
- ☐ Not sure
- ☐ Other: _____

Skip to question 12

Organization Information

Here we are asking about your organization.

11. **Which of the following describe your organization?**

Select any that apply. You may also use the "Other" option to describe.

Check all that apply.

- ☐ Government - Local
- ☐ Government - State
- ☐ Government - Federal
- ☐ Research Center
- ☐ Not-for-profit Organization
- ☐ For-profit Organization
- ☐ Not sure
- ☐ Other: _____

Skip to question 12

Prior Knowledge

Here we are asking about your prior and current experience.

12. Which of the following describes your pre-course experience with R? *

Mark only one oval.

- ☐ I have no experience with R.
- ☐ I have tried R, but am not experienced.
- ☐ I use R occasionally.
- ☐ I use R almost daily.

13. Which of the following do you have experience with? *

Select any that apply.

Check all that apply.

- ☐ Excel and/or Google Sheets
- ☐ Git/GitHub for version control
- ☐ Statistical tools (e.g., SAS, Stata, etc.)
- ☐ Other programming language(s), besides R (e.g., C, C++, Java, JavaScript, Python, Julia, etc.)
- ☐ None of these

14. How would you rate your current comfort with data science, generally? *

Mark only one oval.

1 2 3 4 5

Less comfortable ☐ ☐ ☐ ☐ ☐ More comfortable

15. How confident are you in your ability to use data science tools (e.g., R programming, GitHub) to answer Environmental Health related questions? *

Mark only one oval.

1 2 3 4 5

Less confident ☐ ☐ ☐ ☐ ☐ More confident

16. How would you rate your current confidence with these specific tools or topics? *

Mark only one oval per row.

	1 (Less confident)	2	3	4	5 (More confident)
Rmarkdown / Reproducible documents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RStudio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Basic R Syntax	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Importing or loading data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Subsetting datasets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Summarizing datasets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cleaning datasets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reshaping or combining datasets	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Data visualization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Statistics / modeling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Functional programming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Github / version control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Prior Skills

Here we will ask you some questions about data.

17. What changes, if any, would you make to this dataset in order to do analysis or make a visualization?

Please provide a brief answer of 1-2 sentences.

country	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910
1 Afghanistan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2 Albania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3 Algeria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4 Andorra	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5 Angola	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6 Antigua and Barbuda	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7 Argentina	2070	2490	2820.0	2860	3.80e+03	3990	6.26e+03	6.26e+03	7.62e+03	5.94e+03	8.91e+03
8 Armenia	131	135	130.0	127	1.42e+02	126	1.44e+02	1.61e+02	1.62e+02	1.72e+02	1.68e+02
9 Australia	10200	11400	11400.0	11200	1.16e+04	12100	1.44e+04	1.55e+04	1.68e+04	1.46e+04	1.75e+04
10 Austria	27700	28400	25700.0	25600	2.69e+04	28100	3.36e+04	4.22e+04	5.90e+04	4.22e+04	5.76e+04
11 Azerbaijan	1270	1300	1260.0	1230	1.37e+03	1220	1.39e+03	1.56e+03	1.57e+03	1.66e+03	1.62e+03
12 Bahamas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
13 Bahrain	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14 Bangladesh	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
15 Barbados	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
16 Belarus	1970	2020	1950.0	1910	2.12e+03	1900	2.16e+03	2.42e+03	2.44e+03	2.57e+03	2.52e+03
17 Belgium	49700	46700	48900.0	52700	5.04e+04	50300	5.75e+04	5.84e+04	5.79e+04	5.78e+04	6.13e+04
18 Belize	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
19 Benin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
20 Bhutan	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
21 Bolivia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
22 Bosnia and Herzegovina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23 Botswana	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

18. In your own words, describe practices you might use to make your work more transparent and reproducible in R.

Please provide a brief answer of 1-2 sentences.

19. In your own words, describe a process you would typically take when investigating a new dataset.

Please provide a brief answer of 1-2 sentences.

Expectations

Here we will collect information on your expectations for the course.

20. **What are your concerns about this course?**

Select any that apply. You may also use the "Other" option to describe.

Check all that apply.

- ☐ The technical nature of the material
- ☐ My ability to keep up with the pace of the course
- ☐ My lack of experience with data science or R programming
- ☐ The time commitment required for the course
- ☐ Other: _____

21. **How do you think learning R and more about data science will benefit your studies/career?**

Select any that apply. You may also use the "Other" option to describe.

Check all that apply.

- ☐ Improve data analysis skills
- ☐ Enhance career prospects and competitiveness
- ☐ Improve collaboration and reproducibility in research
- ☐ Support decision-making in environmental health policies
- ☐ Enable more efficient and effective data visualization
- ☐ Support statistical and modeling applications
- ☐ Automate repetitive tasks in data processing
- ☐ Improve ability to handle large datasets
- ☐ Enhance ability to create custom analytical tools
- ☐ Improve ability to teach others
- ☐ Other: _____

Review Responses

Click "Submit" to finish.

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