

SAMANTHA R CSIK

scsik@ucsb.edu | samanthacsik.github.io

OVERVIEW -----

As Data Training Coordinator at the National Center for Ecological Analysis & Synthesis, located at UC Santa Barbara, I work to develop and teach data science workshops and lectures for students and researchers of all experience levels. I have seven years of teaching experience, and I am always looking for new ways to create a more exciting, inclusive and supportive learning environment -- whether that be in the classroom, or as acting co-organizer of R-Ladies Santa Barbara. I am a passionate supporter of open data science learning opportunities. I do so by publishing all of my educational materials on GitHub and by sharing them with data science communities beyond UCSB, through invited talks and on social media platforms.

EDUCATION -----

- 2020 **M.S. in Ecology, Evolution & Marine Biology (EEMB)**
University of California, Santa Barbara (UCSB)
- 2016 **B.S. in Marine Biology, magna cum laude**
Northeastern University (NEU) & [Three Seas Program](#) (2013-2014)

PROFESSIONAL DATA SCIENCE EXPERIENCE -----

- Aug 2021 - present **Data Training Coordinator**
National Center for Ecological Analysis & Synthesis (NCEAS)
- > Developing & teaching data science and professional development workshops for the [Master of Environmental Data Science \(MEDS\) program](#) and data science initiatives across NCEAS and UCSB.
 - > Support curriculum cohesion across MEDS courses by observing and contributing to course materials, as well as acting as a liaison between students and instructors
 - > Coordinating with MEDS program staff to support recruitment, career development, and student needs

- Jan - Aug 2021 **Data Science Fellow (extension of previous role)**
National Center for Ecological Analysis & Synthesis (NCEAS)
- > Engineered a knowledge model of salmon-related ideas & concepts to improve salmon data discoverability within the [KNB data repository](#)
- Aug 2020
 - Jan 2021 **Data Science Fellow**
National Center for Ecological Analysis & Synthesis (NCEAS)
- > Improved the number and quality of semantically-described datasets within the [Arctic Data Center \(ADC\) data repository](#) by (a) expanding and developing ontologies to accurately describe ADC data and (b) semantically annotating 1100+ datasets
- > Wrote scripts & developed pipelines in R to facilitate batch updates of ADC metadata records with semantic annotations

WORKSHOPS & DATA SCIENCE EDUCATION CONTRIBUTIONS ----

All workshops & talks were developed and led by Samantha Csik, unless otherwise noted

- May 2023 **Integrating JavaScript libraries into R for dynamic visualizations**
 ([GitHub repository](#) & [materials](#))
 Society for Open, Reliable, and Transparent Ecology and Evolutionary Biology (SORTEE) Workshops & Webinars Series
A live-coding workshop on building interactive data visualizations
- Apr 2023 **An iterative approach to streamlining your analytical workflows using functions and for loops** ([materials](#))
 Master of Environmental Data Science program
A live-coding workshop on writing functions and for loops, with a focus on breaking down complex code into bite-sized, approachable pieces
- Mar 2023 **One workflow for building effective (and pretty) ggplot2 data visualizations** ([materials](#))
 Master of Environmental Data Science program
A live-coding workshop that walks learners through the process of building effective ggplot2 data visualizations, from assessing data and

appropriate plot types to customizing plot themes

- Jan 2023 **EDS 430 - Intro to Shiny** ([course description](#) & [slides](#))
Master of Environmental Data Science program
A 1-unit, 2-day live-coding workshop on the fundamentals of building Shiny applications and dashboards
- Oct 2022 **Data Analysis & Visualization in R (for Ecologists)** ([materials](#)) [helper]
DREAM Lab/Carpentries
A two-day live-coding workshop on data analysis & visualization for new R users
- Oct 2022 **Adding a blog to your existing Quarto website** ([blog post](#))
Master of Environmental Data Science program
A discussion about the values of data science blogging and technical instruction on how to create one
- Oct 2022 **Customizing Quarto Websites** ([slides](#))
Master of Environmental Data Science program
An intro to Sass & CSS for customizing Quarto websites.
- Sep 2022 **Scalable and Computational Reproducible Approaches to Arctic Research** ([book](#)) [co-developed & co-taught]
NSF Arctic Data Center
A 5-day workshop providing researchers with an intro to advanced topics in computationally reproducible research in python, including software techniques for working with very large datasets.
- Aug 2022 **Creating your personal website using Quarto** ([materials](#))
Master of Environmental Data Science program
Step-by-step instructions for building, deploying, and customizing a Quarto website
- May 2022 **Demystifying the Technical Interview** ([slides](#))
Master of Environmental Data Science program

A discussion about the different types of technical interviews environmental data scientists may encounter, followed by some fun practice with peers

Apr 2022

An Intro to Cloud Computing ([slides](#))

Master of Environmental Data Science program

An interactive workshop on how to launch an Amazon EC2 instance

Feb 2022

An Intro to Shiny ([slides](#))

Master of Environmental Data Science program

A hands-on coding workshop on how to build and customize an R shiny application

Feb 2022

Relational Databases & SQL ([materials](#)) [assistant instructor]

Master of Environmental Data Science program, led by the Carpentries

An introduction to the basics of SQL for data management and accessing databases from R

Jan 2022

Programming with Python & an Intro to Web Scraping ([materials](#))

[assistant instructor]

Master of Environmental Data Science program, led by the Carpentries

An introduction to programming with Python that covers data wrangling with Pandas, writing loops and functions, data visualization with plotnine, and web scraping with Pandas

Dec 2021

Data Science with R & Python ([materials](#)) [co-developed & co-led]

R-Ladies Santa Barbara x Central Coast Python

An R to Python (and vice versa) translation workshop in collaboration with Central Coast Python

Nov 2021

Reproducible Research Techniques for Synthesis ([materials](#)) [assistant instructor]

Learning Hub @ the National Center for Ecological Analysis & Synthesis

A 5-day long workshop on fundamental data science skills to improve

reproducible research techniques, particularly for the purposes of synthesis science. This course is taught primarily in R and is open to researchers across career stages and sectors.

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| Summer 2021
& 2022 | RStudio Tips & Tricks (slides)
Master of Environmental Data Science program
<i>A talk on the RStudio IDE tips & tricks and other keyboard shortcuts</i> |
| Summer 2021
& 2022 | Teach Me How to Google (slides)
Master of Environmental Data Science program
<i>A talk on how to troubleshoot code and Google for helpful answers</i> |
| Sept 2021 | Writing Data Science-related Blog Posts (slides & blog post)
Master of Environmental Data Science program
<i>A workshop on the value of blogging and how to create & customize posts using the <code>{distill}</code> package in R</i> |
| Aug 2021 | Customizing Your Personal Website with CSS (slides)
Master of Environmental Data Science program
<i>A brief intro to using CSS to customize <code>{distill}</code> websites</i> |
| Mar 2021 | Data Viz with <code>{ggplot2}</code> (materials) [co-developed & co-taught]
R-Ladies Santa Barbara
<i>A live-coding workshop on making data visualizations with the <code>{ggplot2}</code> package in R</i> |
| May 2019 | An Intro to the <code>{tidyverse}</code> (materials) [co-developed & co-taught]
R-Ladies Santa Barbara
<i>A code-along workshop to learn data wrangling & visualization techniques using <code>{tidyverse}</code> functions in R</i> |

INVITED TALKS, EVENTS & BLOGS -----

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| Nov 2022 | What is a Master of Environmental Data Science? (slides)
Data Analysis and Coding Club (DAnC), UCSB |
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An invited talk for undergraduates interested in Bren's Master of Environmental Data Science program, followed by Q&A

Jun 2022

Hello Quarto! ([recording](#) & [blog post](#)) [moderator]

R-Ladies Santa Barbara & Openscapes

A discussion with NASA Openscapes and Posit (formally known as RStudio) developers about using Quarto to enable collaborative, data-intensive, open science in the cloud

Jun 2022

Filling a training gap in environmental workplaces - The emergence of environmental science degree programs & lessons learned from running one ([slides](#)) [co-presented with Dr. Allison Horst]

The Statistical Society of Canada

An invited talk for the "Environmental Data Science Growth & Opportunities" session

2022

Teach Me How to Google ([slide versions by event](#))

Invited talk on how to troubleshoot code and Google for helpful answers, given to the following groups (original slides developed for the MEDS program here)

> Environmental Studies Program, UCSB | Nov 2022

> StatLab @ the Brown School, Washington University in St Louis | Mar 2022 ([recording](#))

> R-Ladies, Saint Louis | Feb 2022

> Master of Technology Management, UCSB | Jan 2022

Dec 2021

Data Science Learning Communities - R-Ladies Santa Barbara ([recording](#))

UC Santa Barbara Data Science Summit

The [Data Science Summit at UCSB](#) was the first gathering of data scientist practitioners, researchers, and educators from all departments across campus, with an overarching goal of creating a more cohesive, collaborative, and inclusive data science community. Here, I presented an invited flash talk to introduce the Santa Barbara chapter of R-Ladies to this broader UCSB data science community.

- Oct 2021 **Using Semantic Tools to Improve Data Discoverability** ([slides](#))
 Master of Environmental Data Science program
Guest lecture for the Metadata Standards, Data Modeling & Data Semantics course (EDS 213) on applied examples of using semantic tools, like ontologies, to improve data discoverability and reusability
- Mar 2021 **It's ~~just~~ ALL about semantics** ([slides](#))
 Santa Barbara Women in STEM
A lightning talk on how semantic tools can make finding data easier and impactful synthesis science faster

PROFESSIONAL COMMITTEES -----

- Apr 2023
 - present **NCEAS Environmental Data Science Summit Internal Planning Committee**
 National Center for Ecological Analysis and Synthesis
A committee assisting the external steering committee with planning the 2024 Environmental Data Science Summit, "Communicating and Translating Environmental Data Science"
- Sep 2022
 - present **PLO Assessment Development Committee**
 Bren School of Environmental Science & Management
A committee tasked with developing and administering the first of five Program Learning Outcome Assessments for the MEDS program during the 2023-2025 academic years, as required of all degree-granting programs at UCSB
- May 2022
 - present **NCEAS Learning Hub Committee**
 National Center for Ecological Analysis & Synthesis
A committee responsible for managing, developing, and delivering Learning Hub educational content
- Aug 2021
 - present **MEDS Curriculum Cohesion Committee**
 Bren School of Environmental Science & Management

A committee of MEDS faculty & lecturers, the MEDS Program Coordinator, and Data Training Coordinator, which meets monthly to discuss, plan for, and ensure cohesion among core MEDS courses

Aug 2021
- present

NCEAS / MEDS Integration Committee

NCEAS & Master of Environmental Data Science program

A committee of MEDS coordinators & NCEAS leadership to brainstorm and implement ways to integrate both communities

PROJECTS -----

Feb 2023

Refactoring & Maintaining the Bren Student Data Explorer ([dashboard](#) & [source code](#))

Bren School of Environmental Science & Management

Refactored the code base and updated data for Bren's interactive data explorer, which was built to visualize admissions and career outcome data of current students and recent graduates

Dec 2022
(ongoing)

Sam's Strava Stats ([dashboard](#) & [source code](#))

A personal side project

A shiny dashboard for visualizing my personal Strava data

SERVICE & COMMUNITY CONTRIBUTIONS -----

Communities

Feb 2022
- present

The Carpentries

Certified Instructor

The Carpentries teaches foundational coding and data science skills to researchers worldwide.

Oct 2021
- present

NCEAS Diversity Team

Member

I sit on a subcommittee that is working specifically to find ways of providing training opportunities to individuals from under-represented groups in ecology and data science. Most recently, this included the

creation of the [NCEAS Director's Scholarship](#) for funding participants to attend a 5-day environmental data science training course at NCEAS.

Apr 2020
- present

R-Ladies Santa Barbara ([Meetup](#))
Co-Organizer (member since 2018)

R-Ladies is a [global organization](#) working to promote gender diversity in the R community. As co-organizer of the Santa Barbara chapter, I facilitate meetup events by inviting speakers, moderating discussions, and developing and teaching workshops.

Events

Jun 6-10 2022

Curator for [@WeAreRLadies](#) Twitter account ([see list of tweets here](#))
R-Ladies Global

Nominated by [Shannon Pileggi](#) to act as rotating curator for the official Twitter account for [R-Ladies Global](#). Tweeted original content about R packages, resources, and projects, atalkss well as amplified the voices of those in both my immediate and broader R communities.

Apr 12 2022

STEM Career Panelist
Partners in Education

One of four panelists speaking about STEM careers to 200+ 7th-12th grade students across Santa Barbara County's public school system

Jan 2022,
Nov 2022

Hack₂O Organizer
Master of Environmental Data Science program & Environmental Studies Department, UC Santa Barbara

Co-organized a half-day collaborative hackathon, pairing Master of Environmental Data Science (MEDS) students with undergraduate Environmental Studies students to wrangle and visualize FAO Aquastat and USGS Water Resource data. The event also includes a panel discussion with MEDS students, and MEDS capstone project lightning talks.

ADDITIONAL TEACHING & MENTORSHIP EXPERIENCE -----

Mentorship

- Summer 2022 **Halina Do-Linh**, R Shiny Developer Fellow ([Bren Student Data Explorer](#))
The Bren School, UC Santa Barbara
- Summer 2019 **Kylie Van De Wyngaerd**, Santa Barbara Coastal LTER REU Fellow
Department of Ecology, Evolution & Marine Biology, UC Santa Barbara
- Summer 2019 **Maggie Slein**, Ocean Global Change Biology REU Fellow
Department of Ecology, Evolution & Marine Biology, UC Santa Barbara
- Winter 2019 **Vincent Han Lee**, Undergraduate Volunteer
Department of Ecology, Evolution & Marine Biology, UC Santa Barbara
- Summer 2018 **Gabbie Baillargeon**, Ocean Global Change Biology REU Fellow
Department of Ecology, Evolution & Marine Biology, UC Santa Barbara
- 2017 - 2018 **Anna Zhou**, Undergraduate Mentee
Women in Science & Engineering (WiSE), UC Santa Barbara

Teaching

- 2017 - 2020 **Teaching Assistant**
UC Santa Barbara

Developed curricula and taught lab sections for the following undergraduate courses:
 > *Biology of Fishes*
 > *Conservation, Management, & Food Production in Aquatic Systems*
 > *Behavioral Ecology*
 > *Intro to Ecology*
 > *Intro to Biology*
- Spring 2016 **Teaching Assistant**
Northeastern University

Taught lab sections for the General Biology undergraduate course

Spring 2015

Lab & Diving Operations Organizer

Northeastern University's Three Seas Program

Facilitated diving and lab activities for Three Seas courses based in Bocas del Toro, Panama and Friday Harbor, Washington for 25 undergraduate and master's students

PUBLICATIONS -----

Peer Reviewed

Csik SR, DiFiore, BP, Kraskura K, Hardison EA, Curtis JS, Eliason EJ, Stier AC. (2023) The metabolic underpinnings of temperature-dependent predation in a key marine predator. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2023.1072807>

Gaynor K, Azevedo T, Boyajian C, Brun J, Budden A, **Csik S**, Decesaro J, Do-Linh H, Dudney J, Galaz Garcia, C, Leonard S, Lyon N, Marks A, Parish J, Vargas Poulsen C, Ranganathan J, Scarborough C, Smith J, Thomson M, Fong, CR. (2022) Ten simple rules to cultivate belonging in collaborative data science research teams. *PLOS Computational Biology*. <https://doi.org/10.1371/journal.pcbi.1010567>

Ingeman KE, Zhao LZ, Wolf C, Williams DR, Ritger AL, Ripple WJ, Kopecky KL, Dillon EM, DiFiore BP, Curtis JS, **Csik SR**, Bui A, Stier AC (2022). Glimmers of hope in large carnivore recovery. *Scientific Reports*. <https://doi.org/10.1038/s41598-022-13671-7>

Jerde CL, Kraskura K, Eliason EJ, **Csik SR**, Stier AC, Taper ML (2019). Strong evidence for an intraspecific metabolic scaling coefficient near 0.89 in fish. *Frontiers in Physiology*. 10, <https://doi.org/10.3389/fphys.2019.01166>

Invited Blogs

Csik SR, Lowndes J, Steiker A, Oaida Taglialatela C, Friesz A, Allaire JJ, Robinson E, Butland S (2022). Hello Quarto! A Quarto Chat with NASA Openscapes, co-hosted with R-Ladies Santa Barbara. Opensapes Blog. <https://www.openscapes.org/blog/2022/06/22/hello-quarto/>

Ontologies

Csik SR & Schildhauer MP (2022). Salmon Ontology (SALMON). BioPortal.

<https://bioportal.bioontology.org/ontologies/SALMON/?p=summary>

Csik SR & Schildhauer MP (2020). The Arctic Report Card Ontology (ARCRC). BioPortal.

<https://bioportal.bioontology.org/ontologies/ARCRC/?p=summary>

Thesis

Csik SR (2020) The effects of temperature on the metabolism and foraging ecology of the California spiny lobster (*Panulirus interruptus*). M.S. Thesis. The University of California, Santa Barbara. Santa Barbara, California, U.S.A. Available at

<https://escholarship.org/uc/item/3425x51f>

PROFESSIONAL ORGANIZATIONS -----

> [R-Ladies Global](#) - a world-wide organization whose mission is to promote gender diversity in the R community

> [Santa Barbara Women in STEM](#) - a local network of professionals with a common goal to promote and encourage women in fields related to science, technology, engineering, and math

PROFESSIONAL DEVELOPMENT -----

Mar 8 2023	Women in Data Science (WiDS) 2023 Stanford Conference Participant
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Apr 2022 - present	NCEAS Data Science Chats Participant <i>Weekly meetings with early career data scientists at NCEAS to learn & practice new tools and workflows</i> [Github repo]
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Nov 2019	SoCal All Hands useR Meeting Participant
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Jun - Sep 2019	Python Software Carpentry Workshop, UC Santa Barbara Participant
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Jan 2019	Git & R Software Carpentry Workshop, UC Santa Barbara Participant
2019, 2020	Respirometry Workshop for Government Scientists, Stakeholders & Academics, UC Santa Barbara Participant & Presenter
2018-2019	<u>Tidy Tuesday Coding Club</u> , UC Santa Barbara Participant

SKILLS & TOOLS -----

Languages & Environments: R + RStudio (proficient), Python + JupyterLab & VS Code (intermediate), bash (proficient)

Workflows & Collaboration Tools: git + GitHub, project-oriented workflows (e.g. R projects), RMarkdown, Quarto, Google Suite, Slack