**Data Science Workshop for Undergraduate Students (Virtual Event)**

*Utilizing high volumes of data for research and education increases both opportunities and challenges to analyzing and synthesizing these data into scientific understanding. We are pleased to offer a workshop that explores the unprecedented opportunities to engage undergraduate learners in authentic data experiences using real-world data sets.*

***Join us for a hands-on virtual learning experience filled with data and discovery!***

**Target Audience:** 2nd and 3rd year undergraduate **students from all disciplines**. This workshop is for students interested in developing skills for working with data. Our objective is to use real-world data to teach data science concepts including data orientation, interpretation, and synthesis skills, and data visualization techniques. Prior knowledge in data science or programming experience is not necessary.

**When:** November 12, 1:00-4:00 pm – November 13, 9:00-12:00 pm **Where:** Event is virtual

**About the workshop:**

Students will learn about fundamentals of data science and top research initiatives, such as the National Science Foundation sponsored Virtual Data Collaboratory (VDC) project and the Ocean Observatory Initiative (OOI). Working closely with distinguished faculty, participants will take on real-world problems using data sets of interest in education, health, energy, public safety, environment, economic development and more. Workshop participants will also gain exposure to working with large datasets, including the opportunity to experiment with live oceanographic data. Students will also be provided with an introduction to working in the cloud and the basic concepts of Machine learning and AI. The Data Science Career Insights portion of the workshop will introduce students, through a panel of industry experts, to how data science applies in a variety of industries.

Participants include a diverse and inclusive cohort of students who spend the two days working in the program. Students will work with data sets, graphs and maps and learn about ways in which data are displayed. The students will be closely mentored to develop awareness of important data science skills:

* Problem-solving
* Data Orientation, interpretation, and synthesis skills, and visualization techniques
* Coding (R/Python, git, etc. )
* Ethics
* Communication
* Teamwork

**Please register below:**

[**Workshop Registration Link**](https://www.eventbrite.com/e/the-virtual-data-collaboratory-vdc-data-science-workshop-fall-2020-registration-122634911321)

**Contact** **forough.ghahramani@njedge.net** **for additional information.**

**Additional details about the workshop:**

The program will be delivered in two three-hour workshop segments (on Zoom). The first session will focus on fundamentals of data science, an introduction to the cloud, and the basic concepts of Machine learning and AI. Students start hands on-activity using “smaller data sets” of interest before working on something as complex as an OOI dataset or other similarly large dataset during the second session. Breakout groups will be used to supplement group interaction. These breakout sessions provide students with opportunities to work together, with mentors, and to get to know each other.

The workshop mixes content, approach, and activities to ensure students stay involved on and off the screen. Program team will use a tactical approach, starting where students are and building upon their level of understanding. Incorporating several approaches, including think-pair-shares, opportunities for reflective observation, and to give students the opportunity to apply their knowledge.

Participants will meet members of a career panel in virtual personalized sessions. (this will be facilitated in a round robin format using Zoom’s breakout function). Students can choose their top choices, then meet with them. This will give participants an incredible opportunity to meet people leading in data science careers that they might not otherwise have access to.

**Target schools:** small and under-resourced institutions

**Content knowledge:** Prior knowledge in data science or programming experience is not necessary.

**What is expected of participants at the workshop?**

Approximately 50 students will be selected for each workshop. Participants will need to have a laptop and internet access.

**Workshop Application Process**

Faculty at participating schools will make recommendations for student participation. Students must register via the [**Workshop Registration Link**](https://www.eventbrite.com/e/the-virtual-data-collaboratory-vdc-data-science-workshop-fall-2020-registration-122634911321) **.**

**The Virtual Data Collaboratory, a regional cyberinfrastructure for collaborative data intensive science, is supported by its members institutions and the United States National Science Foundation through the NSF award number 1640834. Please visit** [**https://datacollaboratory.org/**](https://datacollaboratory.org/) **for additional information about the Virtual Data Collaboratory (VDC) Project .**