

Geo-Launchpad, RESESS, and the UNAVCO Student Internship Program Go Remote in 2020: Facilitating successful online internships for geoscience students from under-represented groups

Kelsey Russo-Nixon¹, Donna Charlevoix¹, Heather Thiry², and Andria P. Ellis³

¹UNAVCO

²University of Colorado-Boulder

³USGS-HVO

November 25, 2022

Abstract

UNAVCO internships provide unique opportunities for students from underrepresented populations to develop their technical and communication skills while aiming to broaden participation in the Earth sciences. UNAVCO, a non-profit that operates the National Science Foundation-funded GAGE facility, has the opportunity to facilitate multiple internship programs, engaging students from across the United States. Prior to 2020, all internship programs were in-residence in Boulder, Colorado. Internship programs included project work and in-person professional development as well as cohort building, multi-level mentoring, and professional networking in the science-rich Boulder area. In light of the COVID-19 pandemic and ‘safer-at-home’ directives nationwide, we successfully converted our three internship programs to a remote format with fully online programming. We present our strategies for successfully planning, managing, and facilitating three online internship programs with 12 student participants ranging from community college to undergraduates to graduate students who all participated from their home locations. We also share our considerations for converting our internship programming to an online format, expanding our interns’ mentoring network and opportunities, and increasing our programs’ flexibility for interns who were personally impacted by national events. We present our process of identifying and engaging online learning experts and working collaboratively with all stakeholders to ensure each of our internships continued to be of the highest quality and our student experiences were not diminished. By offering the full length and robustness of our programs through a remote platform, we kept our promises of education, career advancement, monetary compensation, and community connection to our full 2020 intern cohort. In addition to offering geoscience projects and research experience to each intern, we implemented a robust suite of synchronous, online professional development courses that occurred weekly, including technical writing workshops, Geoscience Career Circles, and Communications Seminars focused on soft skill development. We also describe the support and training that we offered project mentors as they virtually guided students through successfully completing rigorous science projects and a suite of project deliverables including scientific posters, oral presentations, and technical manuscripts.



GAGE
National Science Foundation's
Geodetic Facility for the
Advancement of Geoscience

Geo-Launchpad, RESESS, & USIP Go Remote in 2020: Facilitating successful online internships for geoscience students from underrepresented groups

Andria P Ellis¹, Kelsey Russo-Nixon¹, Donna J Charlevoix¹, & Heather Thiry²

¹UNAVCO Inc., ²University of Colorado - Boulder



Mission of Internships

UNAVCO internships (each 11 weeks long) provide unique opportunities for students from **underrepresented populations** to develop their technical and communication skills while **aiming to broaden participation** in the **Earth sciences**.

Program	Target Audience	Activity	Support Structures
Geo-Launchpad	2YC students from Colorado	Research-ready Skills	Travel, housing, summer salary, professional development, near-peer mentoring
RESESS	Underrepresented upper level undergraduates	Research Experience	Travel, housing, summer salary, professional development, near-peer mentoring
USIP	Upper level undergrad/graduate students	Work Experience	Summer salary, work experiences, bus pass, near-peer mentoring, professional development

The general **goals** of the programs are to:

- Engage** students in an extended technical project.
- Develop** students' professional networks & skills.
- Provide** career and project mentoring/support.
- Enhance** students' capacity to pursue geoscience.

Motivation for Going Remote

In light of the COVID-19 pandemic & 'safer-at-home' directives, we **redesigned** our programs to **successfully launch RESESS, Geo-Launchpad (GLP), and the UNAVCO Student Internship Program (USIP) to remote platforms**, ensuring continued access to **education, career advancement, monetary stipends, & community connection** for our interns.



2020 UNAVCO Intern cohort consisting of 12 students ranging from community college to graduate students from across the United States participating from their home locations.

Most costs associated w/ going remote were **covered through cost savings** related cancelation of on-site intern lodging and intern travel to Boulder, CO.

Online Communication Tools



Strategies for Facilitating Fully Online Programs

Pre-Internship Support & Resources

Shipped each intern a **laptop** with accessories for program use.



Laptops issued to interns via FedEx.

Issued one-time **Support Stipend** of \$2500 to each RESESS & GLP intern to **offset costs** associated w/ high speed internet, office needs (desk, chair, etc.), & living costs due to COVID-19 restrictions and living off-site.

Virtual Team Building



2020 UNAVCO interns and program staff participating in online team-building.

- External Facilitator** led team building exercises
- Hosted** 6 one-hour sessions, 3 days a week over 2 weeks.
- Sessions heavily influenced **cohort connectiveness**.

Training & Support of Project Mentors

Offered **Compensation Stipend (\$2500)** to **faculty mentors** for accommodating significant **shift in scope** of project design & mentoring. Typically mentors serve fully as **volunteers**.



Provided online **mentor training** and **resources**, highlighting best-practices for **communication** and full-student **mentoring** with clear program **goals & expectations**.

Synchronous Professional Development

Weekly Professional Development:

- Mondays (10-12):** Writing Workshop (*RESESS only*)
- Wednesdays (10-12):** Communication Seminar
- Fridays (11-12):** Geoscience Career Circles

Core working hours (~8 hr/day):

- 10 AM to 3 PM *Mountain Time*
- Other work hours were negotiated within project teams.*

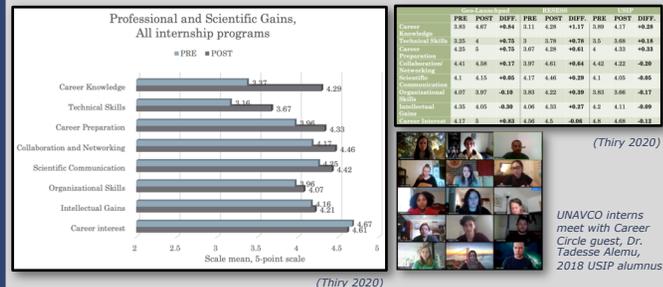
Weekly Program Manager-Intern Check-Ins

Semi-Weekly Online Survey Check-Ins for Interns

Remote Platform Outcomes

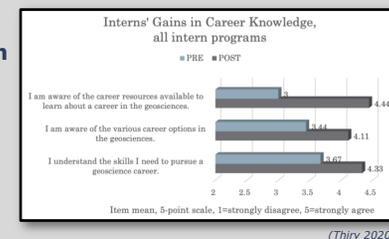
Professional & Scientific Gains

Interns in 2020 in all programs reported the strongest gains in **'knowledge about careers'** & **'technical skills'**.



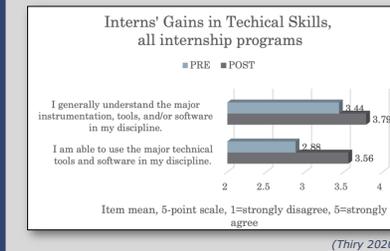
Career Knowledge Gains

- Interns' awareness of career resources in geoscience **rose from 50% to 100%**.
- Career Circles** were most effective in **building interns' knowledge** about geoscience career options.



Technical Skills Gains

In previous **in-person** internships, **'technical skills'** & **'ability to use major instrumentation'** in the geosciences were the **most prominent gains**.



However, in the **online** internship, **'technical skills'** was the **2nd most significant gain**.



ACKNOWLEDGEMENTS:

The success of the 2020 UNAVCO internship programs was largely a product of each of our intern's **dedication, perseverance, and passion** for supporting their own education in the geosciences. Without each student showing up fully with a great attitude to every meeting during our 11-week program despite various hardships, UNAVCO's 2020 internships would have been impossible. Additionally, we had the support of 75+ volunteers to make this summer successful from **Project Mentors to Career Circle guests to informational interview volunteers to resume reviewers to poster evaluators**. **THANK YOU. YOU** made the difference and helped propel these students' careers and their engagement this summer.

This material is based upon work supported by the National Science Foundation under Grant No. 1724794 and Grant No. 1540524. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.