

Impacts on College and Graduate Student Mentors from Guiding Secondary Students in a Community-based Climate Change Outreach Program

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Abstract

Mentorship experience can be transformational for college and graduate students as they learn how to talk about their science field, articulate their work, learn how to listen, and step away from the focus on their own work. The Lens on Climate Change (LOCC) program engaged secondary students in place-based, environmental science in an informal learning environment. Small groups of students worked together, with the guidance of graduate student science and community college film mentors, to produce a film about climate change, as they perceived it to be relevant to their local communities. The majority of student participants came from historically underserved communities, and the program aimed to provide students with opportunities to engage with science and technology in ways that differ from opportunities available in traditional schooling. The graduate student science mentors and community college film mentors played a critical role in supporting students in their exploration of the topic and learning about local climate change. This presentation explores the impacts on mentors and how the LOCC program influenced their experiences and interests in science education and outreach. Using a qualitative case study approach we examine mentor responses to questions about their mentorship experiences. These responses were collected before and after their experiences in the program, as well as through follow up interviews after the program had ended. Mentors fell into several categories based on how the LOCC program influenced them. Some mentors experienced a transformational impact, where the LOCC program played an influential role in their future career goals. Others felt the program helped them cement their career interests and plans. Several mentors did not experience as much impact on their career trajectory. We examine these relationships in the context of the project to consider how their experiences prior to and through LOCC may have influenced these outcomes.

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Lens on Climate Change



Middle and High School kids making films to tell how climate change impacts their community

Coyote and the Drought



University of Colorado
Boulder



Lens on Climate Change

Science and Film Mentors
Inspire, teach and support



Students research
topics, conduct
interviews and are in
control of filmmaking



University of Colorado
Boulder



Study Motivation

Previous research has focused on student impacts not mentors

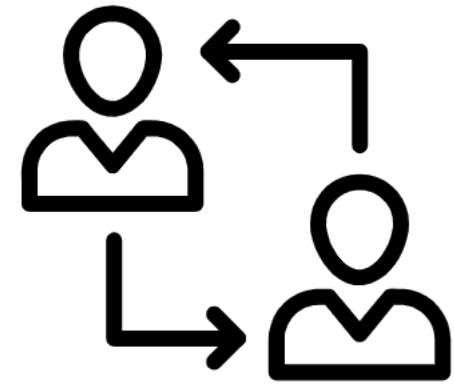
Program evaluation showed benefits to mentors

Explore mentor impacts of being a mentor



Mentor Case Study

What are the impacts of mentoring LOCC students on mentors?



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Research Design – Mentor Case Study

Surveys – all mentors (N=59) invited and asked about

- Motivations and experiences in LOCC program
- Professional journeys since program ended
- How LOCC impacted their career goals

Interviews – asked mentors from each impact level

- Interviews focused on expanding survey responses on career impact

Analysis

- Survey responses categorized by level of program impact
- Mentor benefits coded using code book developed from emerging themes



Mentor Outcomes

High Impact

“ Yes, I now want to pursue a career in Education & Outreach. ”

Moderate Impact

“ I seeked [sic] more outreach opportunities that looked to teach young generations about climate change in innovative ways. ”

Low Impact

“ No, I am still on the same career path as before. However, the experience cemented my commitment to meaningful community outreach as part of my research program. ”

Mentor Outcomes

Did your professional interests, activities, or goals change as a result of your participation as an LOCC mentor? Please explain

Impact Level	Total Number	Science Mentors	Film Mentors	Description of Code
High impact	4	2	2	These mentors described a significant change to their career path or goals
Moderate impact	8	6	2	These mentors described seeking out more similar teaching/outreach opportunities than they had previously, or wanting to incorporate teaching/outreach into their career trajectory
Low impact	11	6	5	These mentors described that the program did not alter their career goals, but that it did help them solidify their interests as they were already in line with the program
Not enough information	11	6	5	These mentors did not indicate any change in their professional interests/goals, and often did not elaborate on why
Other/Personal impact	2	1	1	These mentors mentioned developing a certain skill but not how that influenced career trajectory or that described non-career focused impacts.

Change to career path

Incorporate education into trajectory

Solidified previous interests

No change and no info

Other

*No significant differences found across variables (e.g. number of times participated, year participated, film vs. science mentor, gender, ethnicity, etc.)

Focus on Education

Mentors most often described improved skills as a benefit of LOCC (37% of codes)

- 81% of those mentors described mentoring, teaching, or communication skills for outreach as their main benefit

Other benefits were most frequently coded:

- 'Personal satisfaction' (e.g. fun, rewarding, etc.)
- 'Relationships' (e.g. either personal friendships or professional networking)



What personal or professional benefits, if any, did you gain from being an LOCC mentor?

Preliminary Conclusions

Some mentors experience **high impacts**

Mentoring can help **solidify career interest** even when categorized as low impact

Most impacts are **small** but can be **important for career**

- Benefits described by mentors were focused around **educational skills**



Implications

For mentors:

- Benefits for mentors at all impact levels
- Impacts on mentors participating in outreach despite small sample size in this study

For research:

- Importance of looking at mentors in addition to students for persistence and skill development

For outreach programs:

- Intentional training for mentors
- Mentor teams
- Interdisciplinary aspect of program



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Lens on Climate Change

<http://cires.colorado.edu/outreach/LOCC>



Links

Lens on Climate Change page:

<http://cires.colorado.edu/outreach/LOCC>

Script for this presentation:

https://bit.ly/LOCCAGU2020_Script

Script for this presentation:

https://bit.ly/LOCCAGU2020_Slides

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