Guiding Undergraduate Scientific Writing: Teaching Strategies for Mentors

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Introduction

In the sciences, graduate students and postdoctoral scholars frequently mentor undergraduates seeking research experience. As mentors, we are asked to guide these students as they write abstracts for research conferences, honors theses, or fellowship applications. However, young academics may struggle to provide written feedback on their mentees’ rough drafts, without making the pages bleed with red correction ink.

The goal of my project was to support mentors that are guiding scientific writing projects and to provide formal training in writing instruction.

Three-Part Workshop Series

I was able to successfully draw expertise from across the UC Davis campus to provide training opportunities for 28 graduate and postdoctoral mentors.

I. How to Give Effective, Time-Efficient Feedback on Writing

Professor Chris Thaiss
Clark Kerr Presidential Chair
University Writing Program

Dr. Cara Harwood Theisen
Educational Specialist
Center for Educational Effectiveness

Lauren Fink
PhD student, Graduate Writing Fellow
Neuroscience Graduate Group

II. The First Abstract: Teaching Undergraduates to Summarize their Research

Dr. Brenda Rinard
Lecturer, Asst. Director WAC Program
University Writing Program

Kelly Crosby
Lecturer
University Writing Program

Lauren Fink
PhD student, Graduate Writing Fellow
Neuroscience Graduate Group

III. Roundtable Discussion: Teaching Students to Write Hypotheses and Predictions

Dr. Pat Randolph
BIS 2B Academic Coordinator, Lecturer
Evolution and Ecology Department

New Online Resource

I developed a website with advice and teaching materials organized into the following categories:

I. Managing Writing Projects
II. Materials for Specific Writing Projects
III. Techniques for Providing Feedback
IV. Writing Resources at UC Davis

Now hosted on the GradPathways website on the “Teaching & Mentoring” page.

Want to visit the site? Try this QR code! Or this link: https://goo.gl/SAF8nO

Assessing Current & Future Training Priorities for STEM Mentors

I created a survey and obtained responses from graduate students (n = 55) and postdoctoral scholars (n = 14), collecting a total of 69 responses from representatives in 12 different programs.

80% of my respondents reported that they had not received formal training in writing instruction at UC Davis, and 76% reported that they would be interested in professional development opportunities in this area.

The results of my survey will be used by to design future training opportunities for STEM mentors.

Acknowledgments

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• My workshop panelists for donating their time, and providing advice and resources, including: Kelly Crosby, Lauren Fink, Dr. Pat Randolph, Dr. Brenda Rinard, Dr. Chris Thaiss, and Dr. Cara Harwood Theisen.

• My academic advisor: Dr. Gail Patricelli.

• The students that kindly allowed me to include their photographs on my website, including: Patricelli Lab members Allison Injaian and Lauren Poon, as well as Nicky Creux, Nickey An Kwa, and Marcus Gainer.
Professors for the Future, 2015-2016

PFTF Fellow: Anna Caroline Perry
Program: Animal Behavior
Major Professor: Gail Patricelli

Project Title: "Guiding Undergraduate Scientific Writing: Teaching Strategies for Mentors."

Project Summary:
In the sciences, graduate students and postdoctoral scholars frequently mentor undergraduates seeking research experience. As mentors, we are asked to guide these students as they write abstracts for research conferences, honors theses, or fellowship applications. However, the art of scientific writing can often entangle these mentor-mentee partnerships in a minefield of theories and jargon, with subtle nuances difficult both for undergraduate researchers to master and for graduate or postdoctoral scholars to articulate to their mentees. Due to students’ diverse backgrounds and variation in writing proficiency, mentors may also need to develop different strategies to help individual students. Although many graduate students and postdocs excel at writing, few receive formal training for teaching writing skills to others. Thus, young academics may struggle to provide feedback on rough drafts, without making the pages bleed with red correction ink. Mentors that donate their time may also not have contact with a broader teaching community or receive institutional support beyond their own lab groups. Without formal training and support for mentors, neither mentors nor their mentees fully benefit from their interactions.

To train graduate student and postdoctoral mentors to give effective feedback on undergraduate scientific writing, I conducted a series of interactive workshops. These workshops focused on the following topics: (1) How to Give Effective, Time-Efficient Feedback on Scientific Writing; (2) How to Teach Undergraduates to Write Well-defined Hypotheses and Predictions; and (3) The First Abstract – Helping Undergraduates Summarize Their Research. This workshop series gave 28 mentors an opportunity to receive formal training in writing instruction from expert panelists representing several different programs on the UC Davis campus, including the University Writing Program, the Center for Educational Effectiveness, and the College of Biological Sciences.

I also created a new website with advice and teaching materials designed for mentors working with undergraduate researchers on scientific writing projects (now hosted on the “Teaching and Mentoring” page of the GradPathways website: https://goo.gl/saF8nO). This site includes a concise guide to existing campus resources, where mentors can seek support or recommend additional writing services to their undergraduates. Finally, I collected data from 55 graduate students and 14 postdoctoral scholars to help guide future professional development opportunities for mentors providing guidance on scientific writing projects.

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