

Ecology and Evolutionary Biology Disciplinary Communication Grant Final Report

Title: Improving Undergraduate Scientific Writing Through Enhanced Training of Graduate Student and LSS Tutors in DC Courses in Ecology and Evolutionary Biology

Department: Ecology and Evolutionary Biology

Amount: \$16,000

Period: 2018-2019 Academic Year

Participants: Robin Dunkin, Assistant Teaching Professor, Laurel Fox, Professor, Mark Carr, Professor, Jody Greene, CITL, Lauren Reagan (LSS)

Summary

In the year prior to this award our department had elected to move from having our two upper division core courses (Ecology and Evolution) satisfy the DC requirement to have a large suite of our upper division lab courses satisfy our DC requirement. We believe that this model will better afford instructors and TAs the opportunity to provide meaningful feedback to students on their science writing during the writing intensive assignments associated with these courses. Our goals with this DC grant were to 1) Support instructors and TAs as we transitioned from the prior model to the new model when we had students in both sets of courses seeking to satisfy the DC requirement, 2) offer enhanced training in writing feedback for graduate students as well as enhanced training and support from LSS tutors for these courses, and 3) develop a common writing rubric that we can use across courses.

We were successful in transitioning from our large enrollment Ecology and Evolutionary core courses to the upper division, smaller courses to fulfill the DC course requirement. We provided multiple workshops per quarter for all graduate students and LSS tutors that supported these DC courses during the year of this transition. We also leveraged our CITL fellow, Regina Spranger, to develop a series of writing activities that DC graduate students can use for their DC courses. While we had originally envisioned developing a rubric that covered all DC courses, it became clear as we collected the various writing assignments across the courses, that a better strategy was to provide graduate students an in-depth training on using rubrics to provide feedback on student writing. This has continued to be a useful strategy and the curriculum developed for the workshops and the section materials to support TAs in DC courses continue to be very useful resources.

Specific Activities

1) Support instructors and TAs as we transitioned from the prior model to the new model when we had students in both sets of courses seeking to use those courses to satisfy the DC requirement and 2) Offer enhanced training in writing feedback for graduate students as well as enhanced training and support from LSS tutors for these courses.

During the year of the transition, we worked with LSS support staff and writing tutor expert, Lauren Reagan, to develop [curriculum](#) for two workshops offered during each quarter of the transition year. A total of 63 graduate students and 6 LSS tutors (some repeated the course in multiple quarters) participated in the workshops during the quarter that they supported a DC course. In the first workshop, participants reviewed the writing intensive assignments from the courses that they were supporting, the rubrics for these assignments if supplied, participated in discussion and activities to understand the *Top Down Approach* to providing feedback on writing, and learned strategies to support multilanguage learners with scientific writing. In the second workshop, participants went through the specific assignments they had been reviewing and were offered individualized support around common challenges they may have been experiencing in supporting students. In each quarter that these workshops were offered, the curriculum was improved or tailored to support the individual graduate students and LSS tutors that were attending. Based on exit ticket feedback in these workshops, graduate students appreciated having support around teaching writing and felt it was very useful to have a formalized set of best practices to give this feedback. Grads expressed that not having previously had formal instruction in providing feedback for students has been one of the more challenging aspects of TAing for these courses.

One area that proved more challenging than expected during this process was in getting students to utilize the LSS tutoring sessions we had set up to support students. We found that students were much more likely to engage with their TA rather than a peer tutor. There were certainly multiple reasons for this such as the recent transition of our department to the coastal science campus and the challenge with offering LSS sessions for students at this off-campus location. However, based on discussions with students it also seemed that the relationship with their TA and the fact that the feedback they were getting was coming from their TA made students much more likely to reach out to the grad than to a tutor. In the future we believe putting the resources into our graduate students is the most fruitful strategy to support undergraduates while having the added benefit of supporting graduate students as future faculty and instructors. As a result of this challenge, we did not end up transferring funds as expected to LSS who utilized their normal funding level to support the EEB courses. Instead we shifted the funds (with permission) to pay our grad TAs for completing the workshops above and beyond their normal TA duties.

3) Develop a common writing rubric that we can use across courses.

In our original proposal we had intended to develop a common rubric that could be used across all DC courses. As we began to work on the development of this rubric, our discussions with faculty and our examination of the assignments in the 20 DC courses, we offered made it clear that this was going to be a very challenging endeavor and it was not clear that all faculty would use this new rubric. We therefore took an alternate strategy of developing a new part of the writing workshop for graduate students on developing effective rubrics for an assignment. Best practices and examples of previously published writing rubrics were used as a starting point for graduate students to develop rubrics if the instructor had not provided one. Ultimately this strategy supported graduate students with the skills to offer students feedback in a timely, efficient, and standardized manner across the many DC courses that we are offering.

Additional Work

During the year of this project we had a CITL grad pedagogy fellow, Regina Spranger, who we leveraged to develop a [DC Course support curriculum](#) for graduate students. While not strictly supported by this DC grant, Regina facilitated many of the workshops during the transition year (especially when Robin Dunkin was on maternity leave) and simultaneously developed this robust set of activities for grads to use in their DC sections. These materials are supported with paired power point presentations that have active learning activities that are tailored for ecology and evolutionary biology, and which can be used by any grad to help support their DC course. These activities were highly complementary and resulted in a series of high-quality resources for grads to use well into the future.

Moving Forward

The fall after we completed our transition year and held the series of workshops we had planned (Fall 19), the graduate student TA strikes, wildfires in Santa Cruz County (round 1), and then COVID disrupted our plans to continue these workshops with ongoing TA professional development. However, as we learn to live with COVID and slowly are returning to in person instruction, we have planned to use the curriculum developed from this project to continue supporting graduate students working in DC courses. We intend to reinstate the brown bag lunch series that we had previously been offering for graduate students around pedagogy and other related topics and we intend to offer several workshops on how to support students in their development as scientific writers.

Assessment of the Project

The core team supporting this project met after the first quarter of workshops we offered and discussed the exit ticket feedback from graduate students as well as how the workshops had gone overall. We made revisions based on this feedback and took this approach after each quarter that the workshops were offered. We also monitored the utilization of the LSS tutors during each quarter which led us to determine that investing in the LSS tutors was not the best use of our funds given the low utilization rate. Informal discussions with instructors that taught the DC courses during the transition period expressed gratitude for the extra support for their teaching teams during the challenging transition year.

The curriculum developed for this project with the help of Lauren Reagan is well beyond any formal writing instruction that has been used in our department before. The curriculum that Lauren and our teaching professor, Robin Dunkin, developed helped a large number of our graduate students develop as scientific writing instructors and they in turn supported more than 100 undergraduate students through these DC courses. The writing curriculum that we developed with these funds will be incorporated into our fall TA training that we require of all graduate students each year. While we were not able to do this during the remote instruction period of covid, it is our intention to utilize this workshop going forward in fall 2022.