

Professional development in quantitative biology and its relationship to promoting scholarly teaching



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Goals of the QUBES project

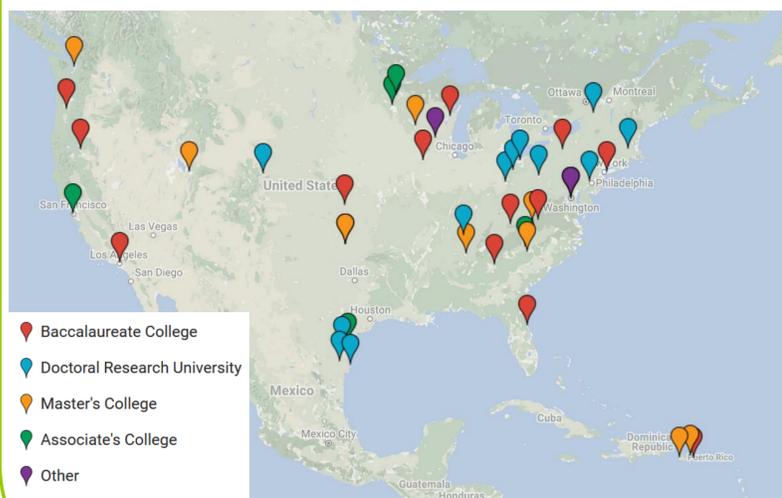
The Quantitative Undergraduate Biology Education and Synthesis (QUBES) project aims to develop and support a community of math and biology educators as they train students to tackle real, complex, biological problems.

QUBES has developed a long-term, low-intensity professional development (PD) model called Faculty Mentoring Networks (FMNs). A goal of the FMNs is to increase the level of teaching scholarship among the community. We use the sharing of educational materials as an indicator of teaching scholarship.

We address the following with this research:

- How does participation in the QUBES FMN PD model affect attitudes and practices of sharing of curricular materials.
- Does participation in a QUBES FMN alter the barriers and/or incentives related to the sharing of curriculum materials online.

The QUBES Community



Participants in a 2016 Faculty Mentoring Network. Map by Hayley Orndorf.

Faculty Mentoring Networks (FMNs)

Faculty Mentoring Networks are:

- Online groups, typically 10-15 faculty members
- Focused on a specific topic or material
- Typically meet every two weeks over a period of several months
- Led by teams of expert content and pedagogy mentors

What are the benefits of participating in a Faculty Mentoring Network?

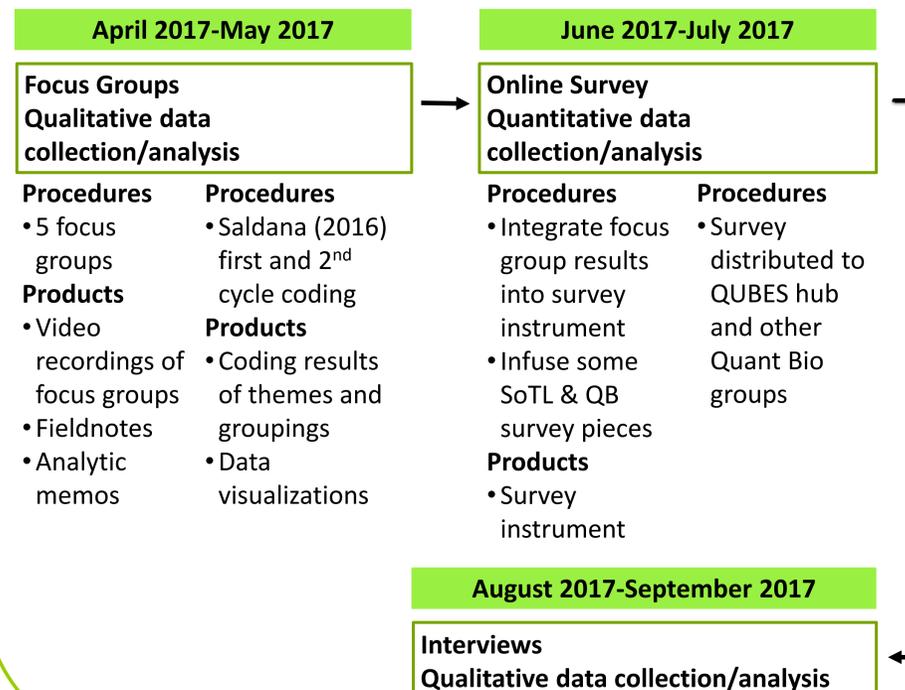
- Interact with a community of colleagues
- Discover new teaching materials and pedagogical techniques
- Increase your confidence and comfort with quantitative content

Participation in an FMN "helped me understand how students in the natural sciences really need quantitative skills"

—FMN Participant

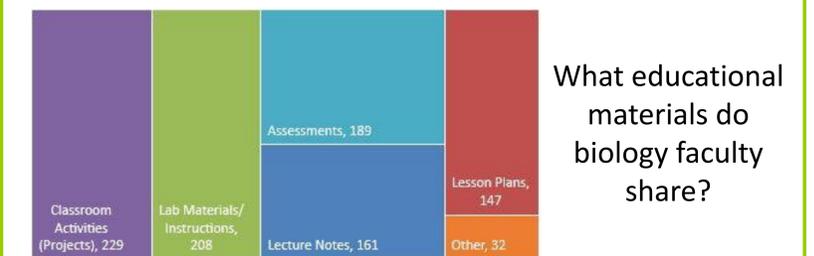
The FMN experience resulted in "renewed and increased excitement about trying new things. I always love changing things up and finding new ways to teach, but now I am even more enthusiastic." —FMN Participant

Mixed Methods Approach

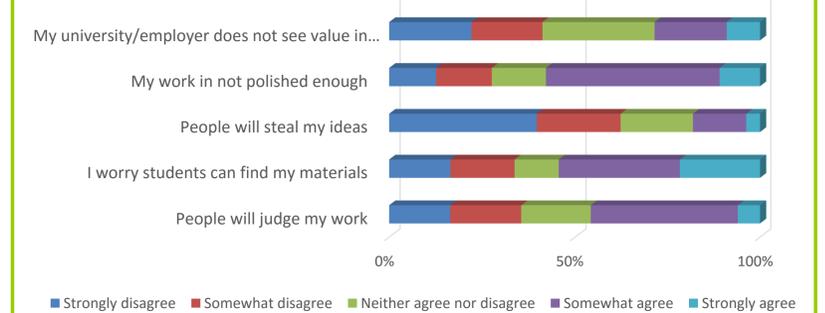


Preliminary Data

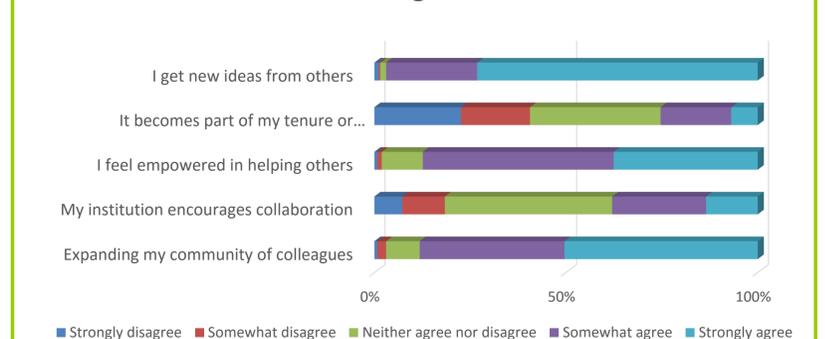
Our community survey was distributed broadly to biology educators. We received 262 complete responses, 35% of whom were QUBES Hub members.



Perceived barriers to sharing educational materials online



Perceived incentives to sharing educational materials online



Identifying mechanisms to increase teaching scholarship through professional development (PD) will improve the implementation of PD for college biology faculty. It will also inform Open Education Resource best practices for increasing teaching scholarship in the digital age

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