

# Faculty Mentoring Networks:

## A model for promoting teaching scholarship in quantitative biology education

QUBES Team: Alison N. Hale, Hayley Orndorf, Sam Donovan, Carrie Diaz-Eaton, Arietta Fleming-Davies, Stith Gower, Gabriela Hamerlinck, Kristin Jenkins, M. Drew LaMar, DorothyBelle Poli, Bob Sheehy, Jeremy Wojdak

### 1. Completing a project through implementation and reflection

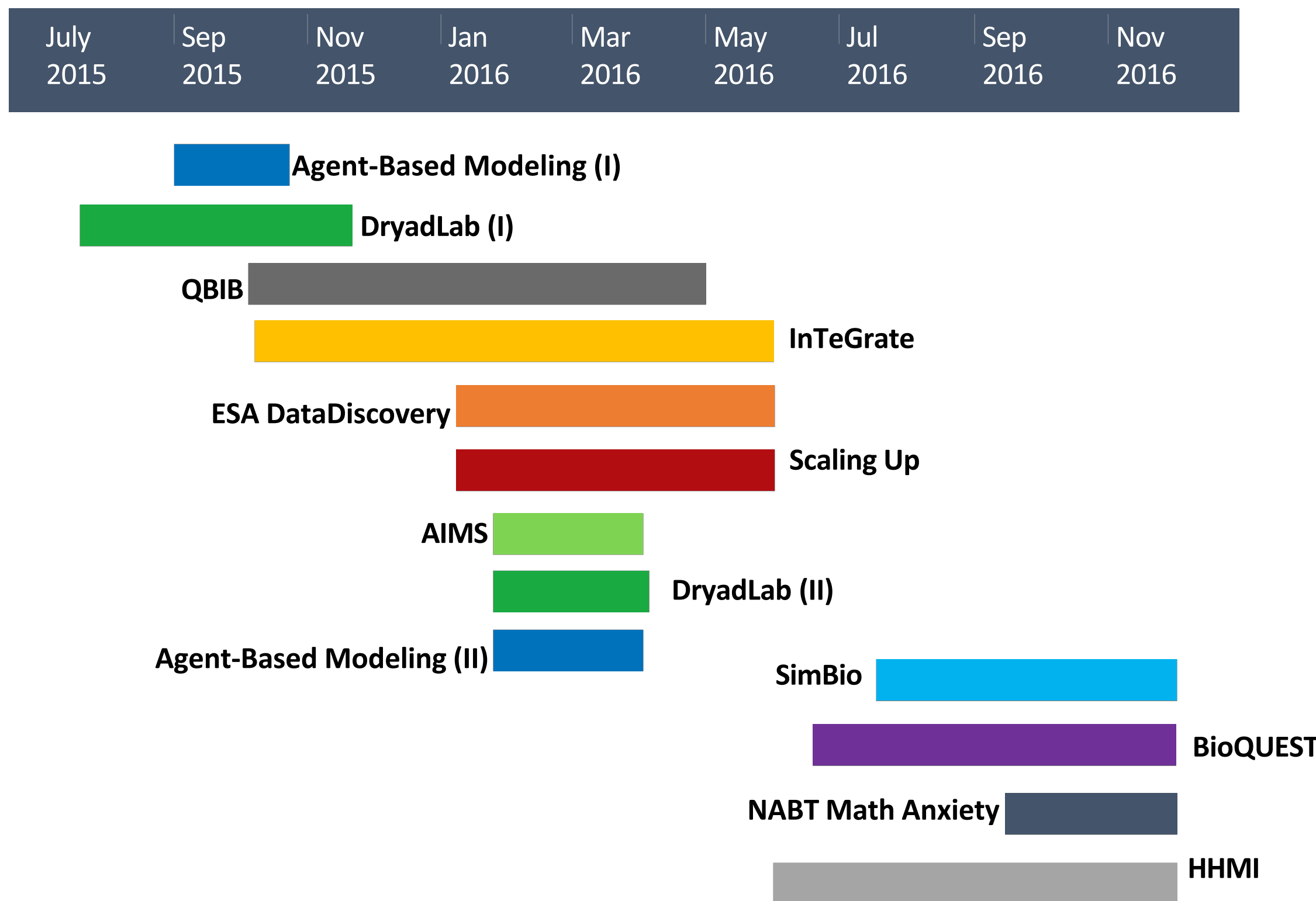


Figure 1. Timeline of QUBES FMNs and their iterations.

### 2. Working from a rich collection of content and pedagogical resources

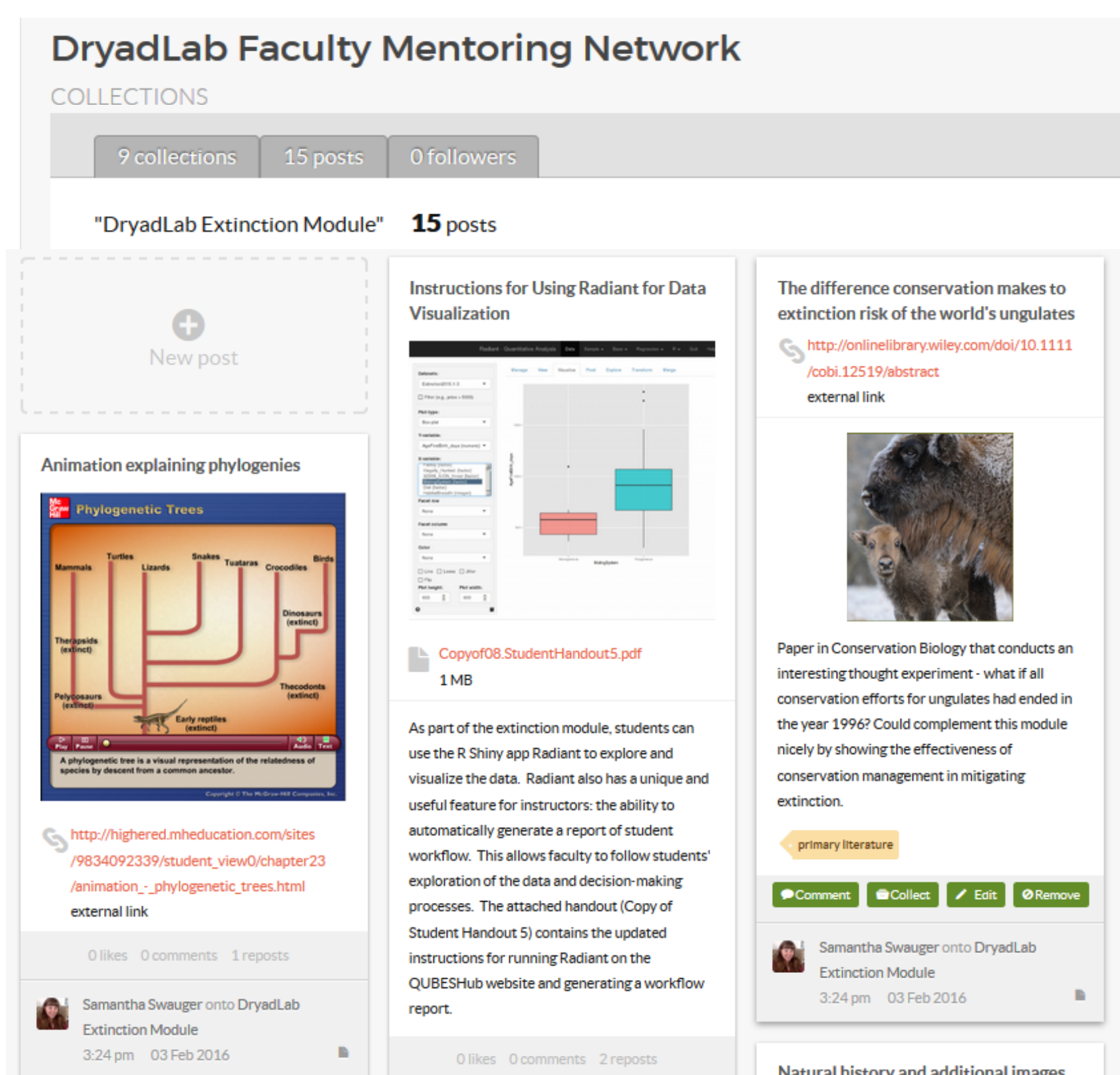


Figure 2. A collection of materials related to the DryadLab modules.

**Hypothesis:** Participation in Faculty Mentoring Networks (FMNs) supports the development of teaching scholarship by influencing faculty identity, self-efficacy, and experience with reform.

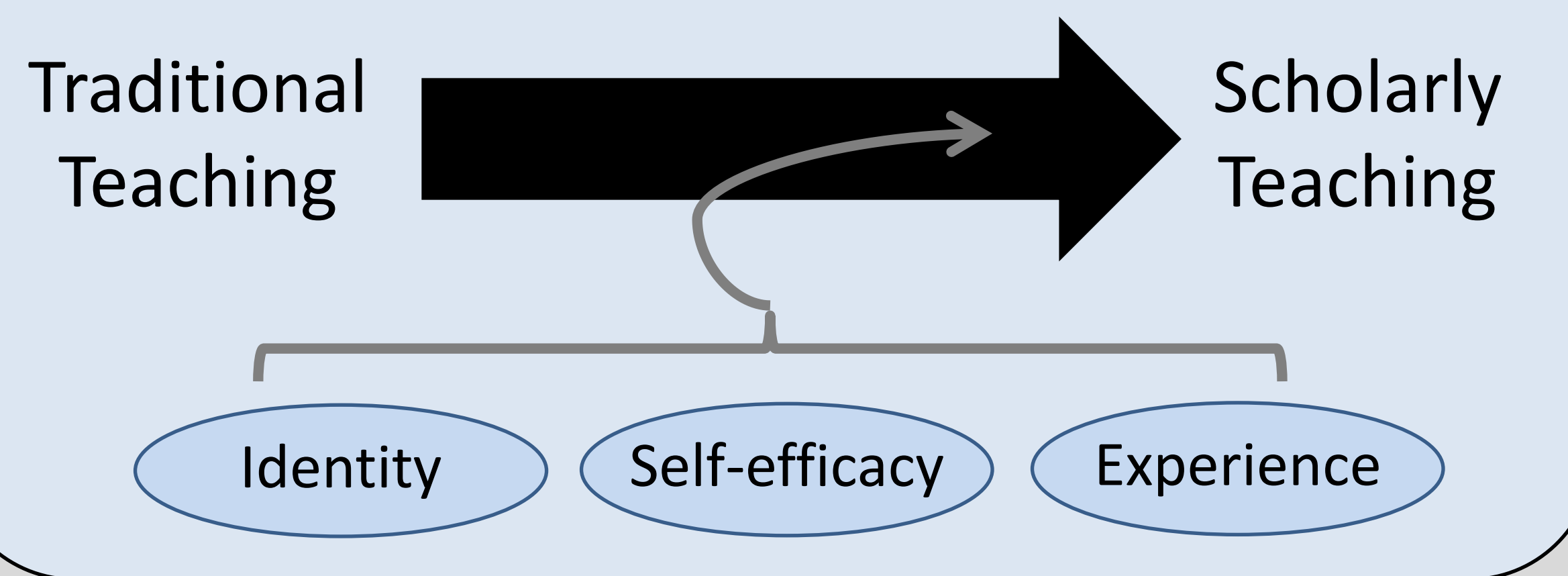
There are many barriers to participation and persistence in biology education reform efforts. Promoting a scholarly approach to teaching can help faculty move beyond some constraints by changing expectations about the norms of professional practice.

FMNs incorporate four core design features to promote faculty teaching scholarship. The core features are:

1. completing a project through implementation and reflection
2. working from a rich collection of content and pedagogical resources
3. a supportive peer community
4. public sharing of teaching materials and credit

### Our model for how teaching practices change

Faculty Mentoring Networks promote a scholarly approach to teaching in quantitative biology education through changes in 3 faculty characteristics



**Identity** – how faculty define themselves professionally and describe their practice (Brownell and Tanner 2012).

**Self-efficacy** – the level of confidence faculty have to change their teaching practice (adapted from Bandura 1997).

**Knowledge/Experience** – the amount of first-hand experience developed from pursuing teaching scholarship.

### 3. Collaborating with a diverse community of peers

Participants and mentors are often geographically widespread, forming a large community of support that lives online. Faculty mentoring networks can range in size from 8 to 24 members, and often include a variety of institution types.

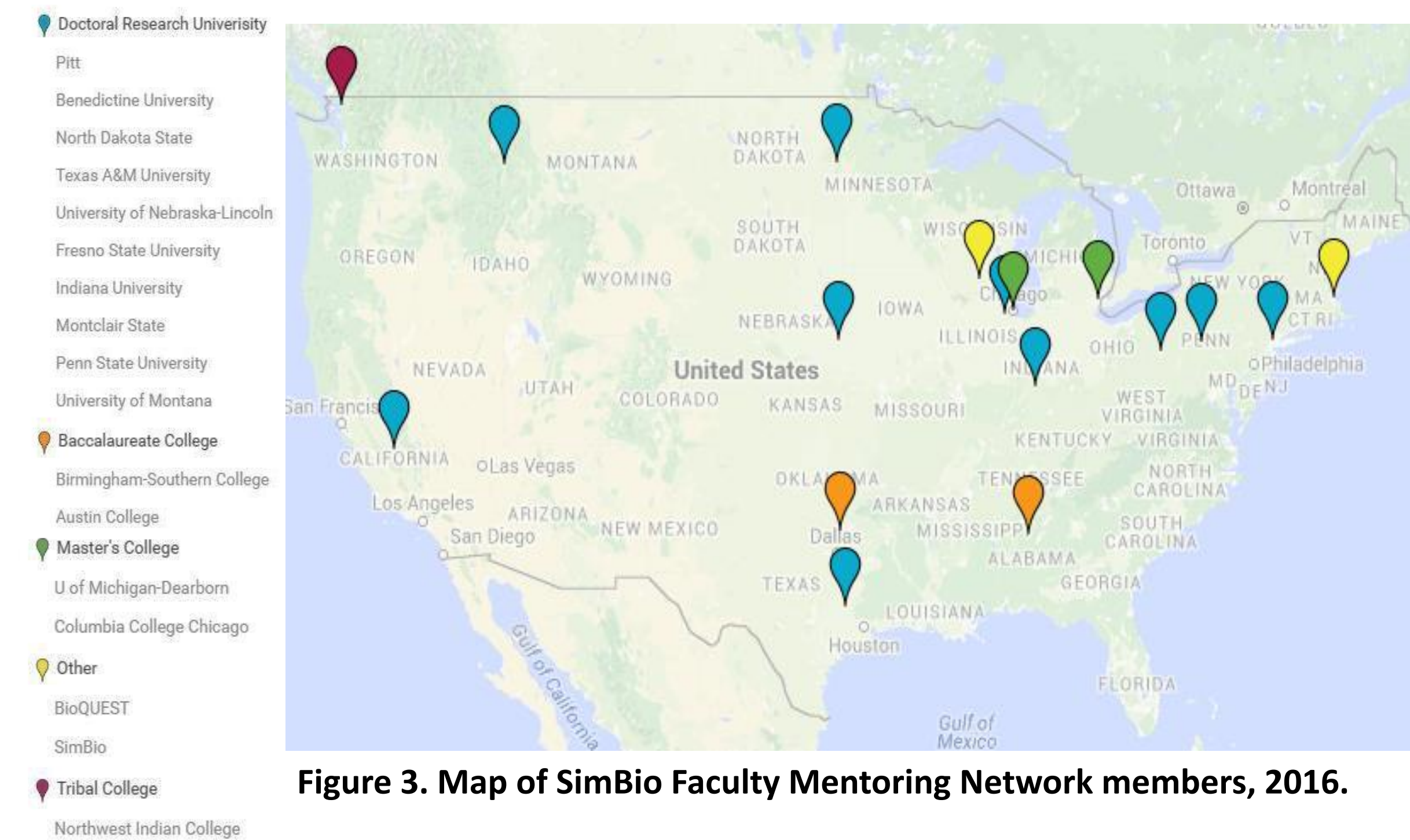


Figure 3. Map of SimBio Faculty Mentoring Network members, 2016.

### 4. Public sharing of teaching materials and credit

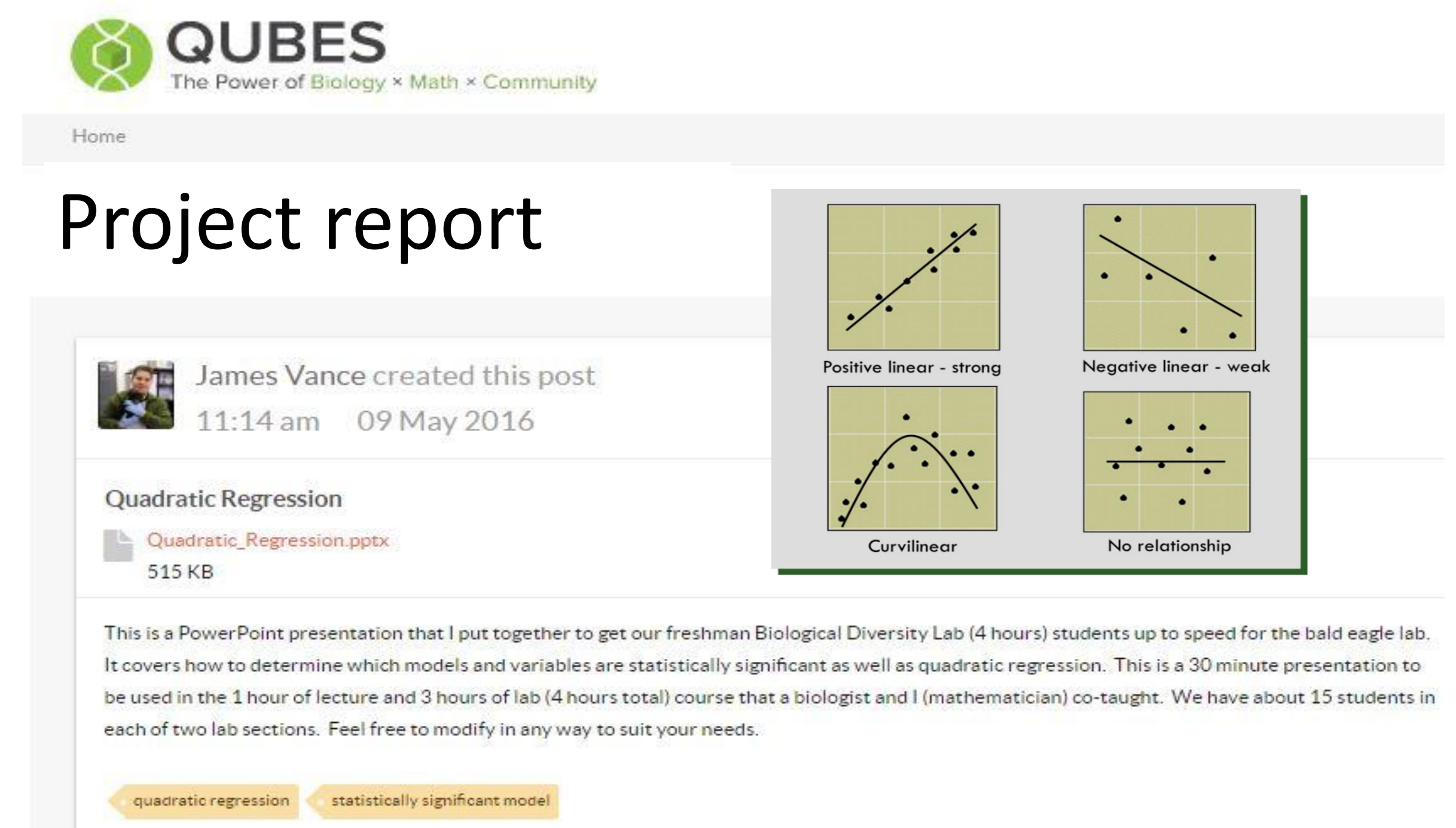


Figure 4. James Vance's product from the Data Discovery FMN, now public on QUBES at <https://qubeshub.org/collections/posts/1454>



Learn how to get involved at [qubeshub.org](http://qubeshub.org)



### References

1. Brownell and Tanner. 2012. CBE-Life Sciences 11: 339-346.
2. Bandura. 1997. *Self-efficacy: The exercise of control*. New York: Freeman.



### Acknowledgements

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