CURE TAPESTRy Resource Talk

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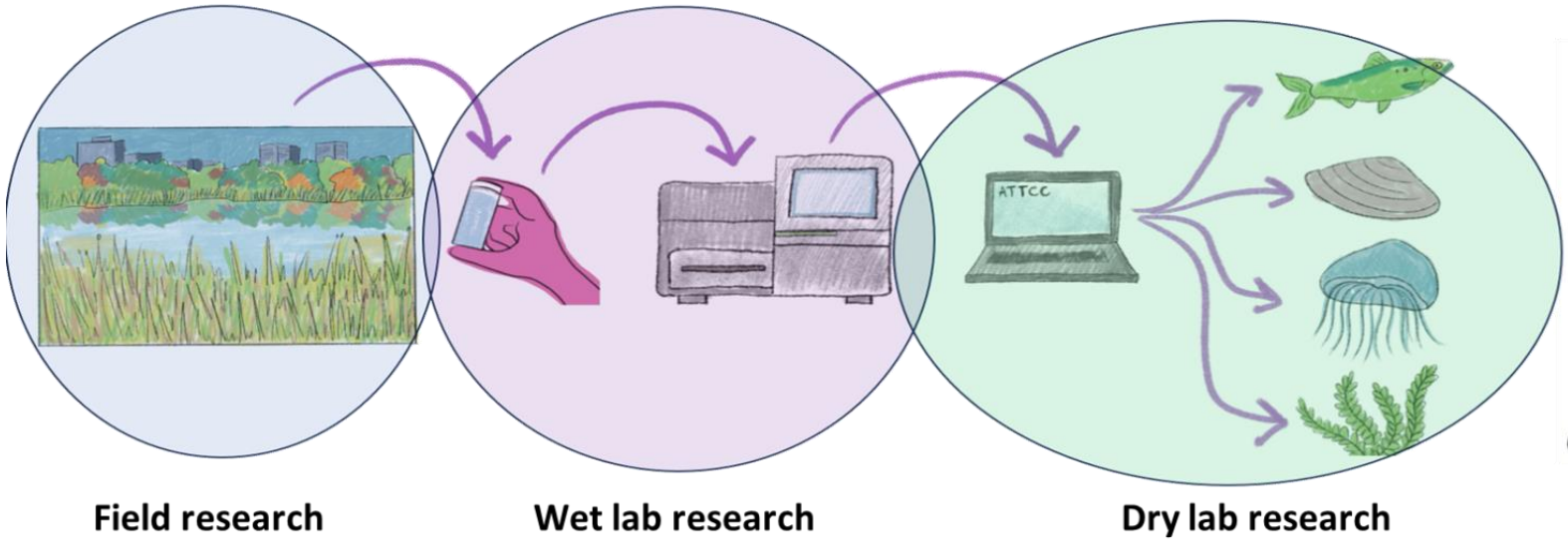
Course Description

Students learn about field, wet lab, and bioinformatic research as they collect and analyze environmental DNA data from a local ecosystem

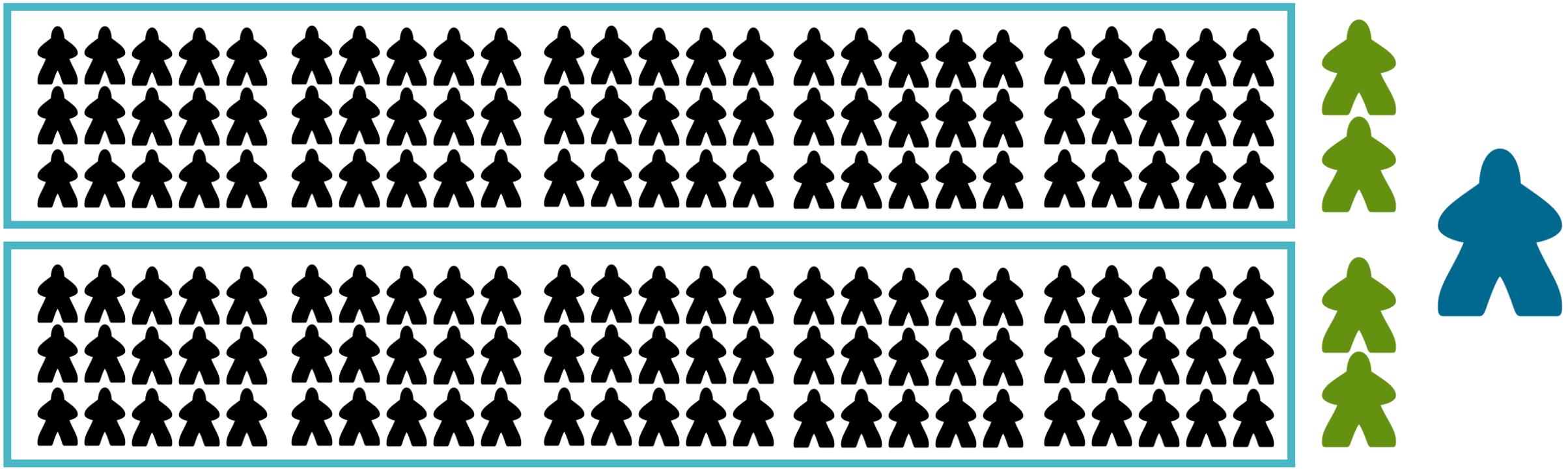


Field research | Wet lab research | Dry lab research

Research skills

- Enrollment: ~2000 students (27 sections with 75 students each)
- First year, 2/5 bio majors, 2/5 bio-adjacent, 1/5 non-majors
- Instructional team: 15 teaching assistants and 40+ undergraduate learning assistants

Thinking about scale...

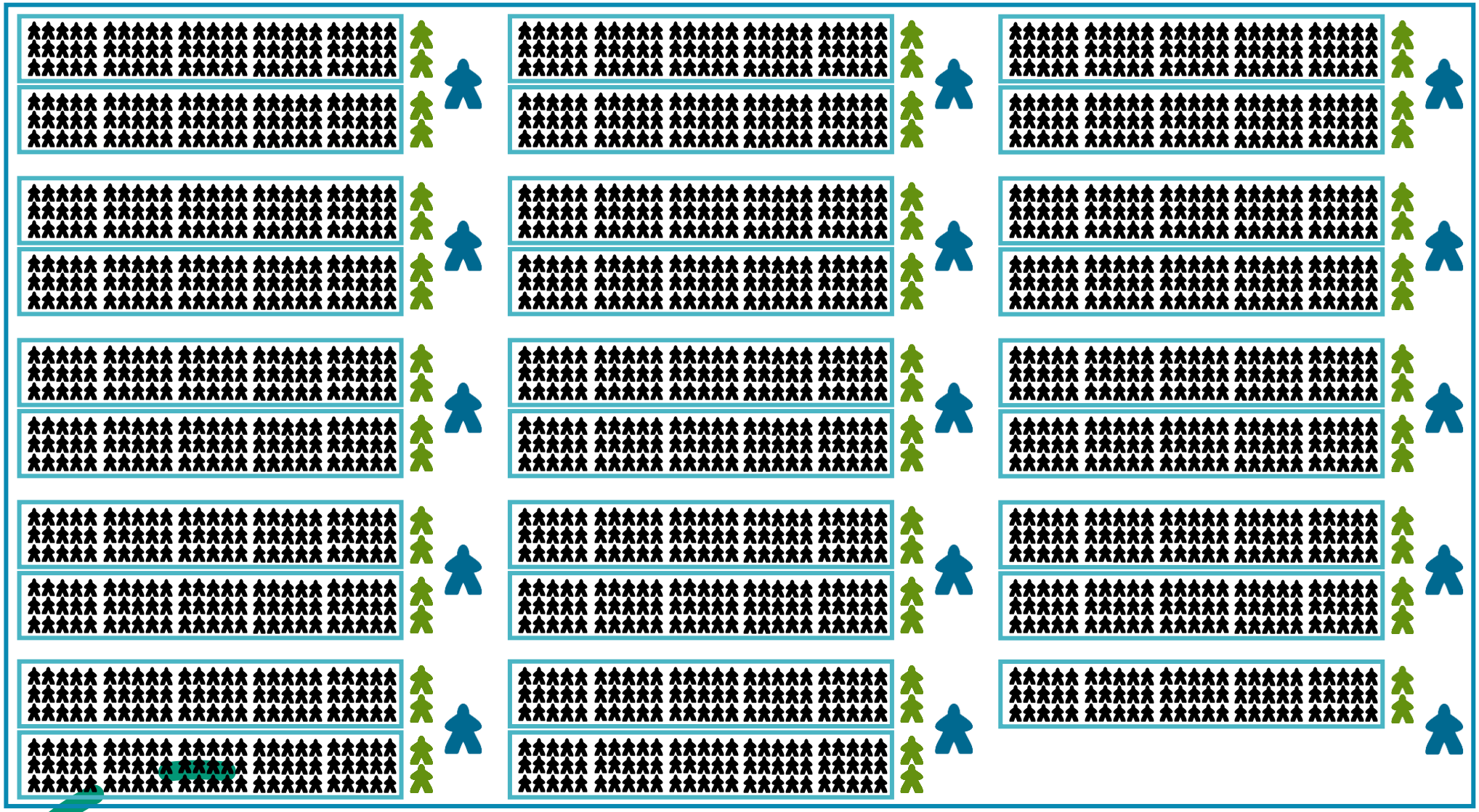


150 students

4 learning assistants

1 TAs

How to create an experience that benefits all students?



>2000 students

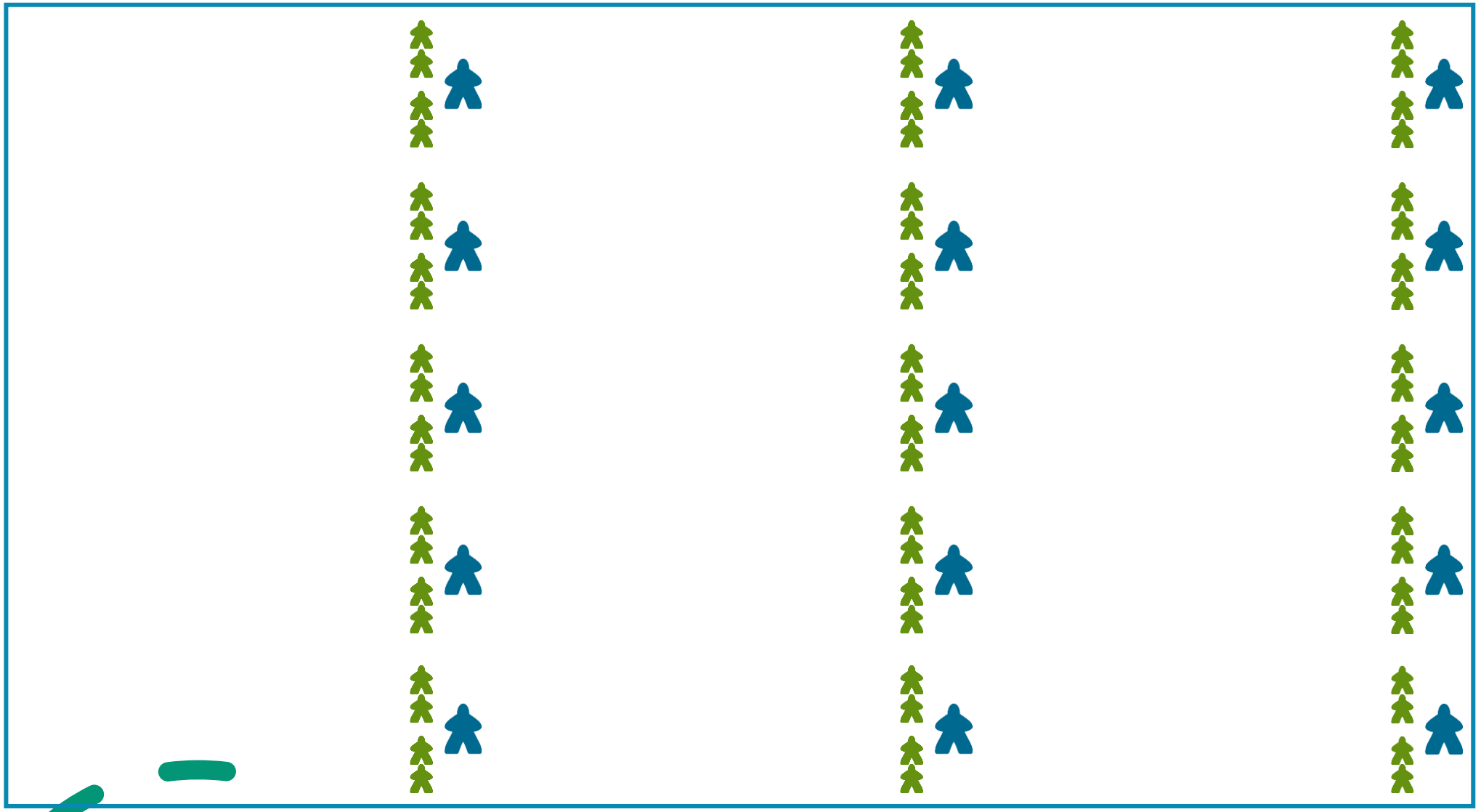
~40 learning assistants

14 TAs

1.5 Head TAs

1 Ana

Diverse instructional team



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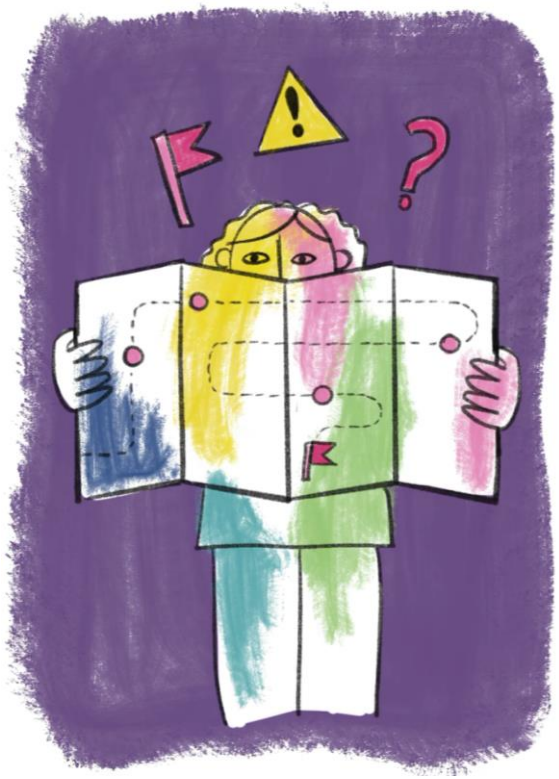
Resource Focus and Objectives

The professional development goals I have for my TAs and LAs are centered around 5 topics:

Topic	Goals (As a TA you will be able to…)
Collaboration	• Collaborate effectively on an instructional team • Create environments for students to engage in cooperative learning
Course format	• Distinguish a course-based undergraduate research experience (CURE) course from other lab courses and articulate its benefits • Explain the benefits of alternative grading formats to enhance student equity
Mentorship	• Develop effective mentorship strategies to support students based on best practices • Collaborate with students in developing their scholarly identities, emphasizing inquiry and critical thinking over finding right or wrong answers.
Logistics/ Course Management	• Use Canvas and external tools to facilitate course management • Effectively manage time and implement strategies to maintain pedagogical wellness, ensuring a balanced and productive teaching environment.
TA professional development	• Identify aspects of the teaching experience that are beneficial to your intended career path

Evaluation Strategies

Topic	Evaluation strategy
Collaboration	• TA/LA meeting dynamics • Post-survey
Course format	• Weekly feedback on activities • Post- survey
Mentorship	• Weekly feedback on activities • Post- survey
Logistics/ Course Management	• Weekly feedback on activities • Canvas gradebook • Post-survey
TA professional development	• Week 8 PD activity • Post-survey



Activities

15 min: Previous lab debrief
- Suggestions for improvement

75 min: Lab walk-through
- Instructor models active learning and inclusive teaching strategies
- GTAs and ULAs complete week activity
- Resources are made available to instructional team:
  - Slides with presenter notes and recommended timing of the various activities
  - Recording of instructional meeting
  - Instructor guide with links to resources, recommended times and helpful notes
  - Open communication via Slack

30 min: Professional development training

Select topics are presented and discussed as they become relevant to course:

- Course overview and introduction to group work, alternative grading formats, CUREs, Canvas
- Class code of conduct; getting to know students through their responses to intro questionnaire
- Constructive and destructive group behaviors, dealing with difficult team dynamics, creating permanent teams
- Field training
- Providing effective feedback; time management while grading
- Dealing with student evaluations; teaching in difficult times
- Supporting students as they develop independent projects
- How to incorporate your teaching experience to your job applications
- Final reflections and constructive feedback for future offerings

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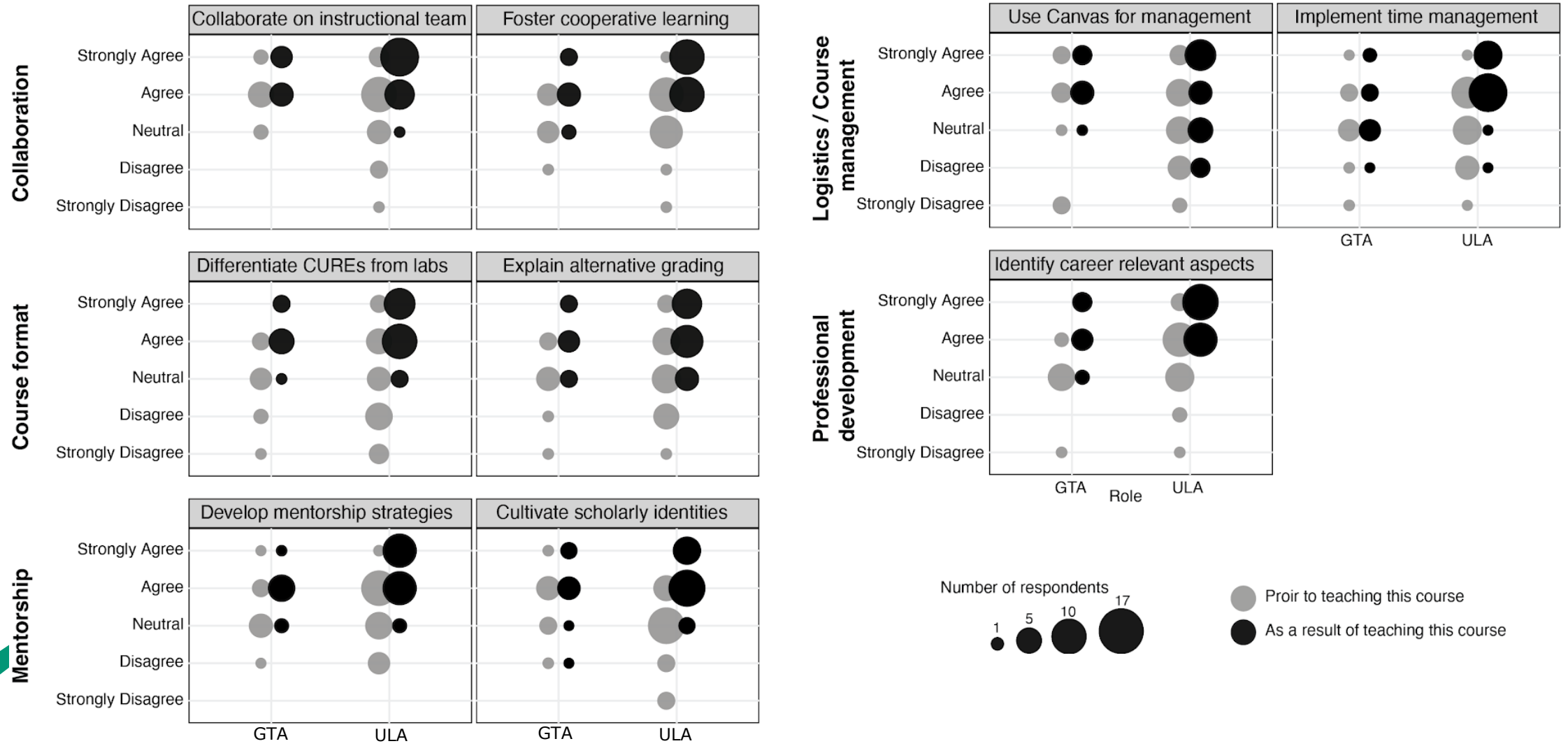
Outcomes:

GTAs and ULAs rated their perceived self-efficacy



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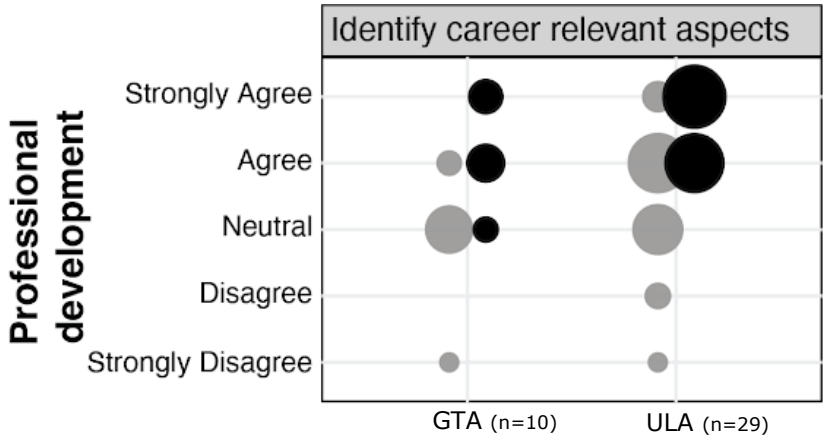
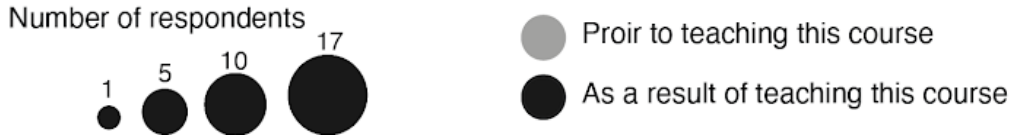
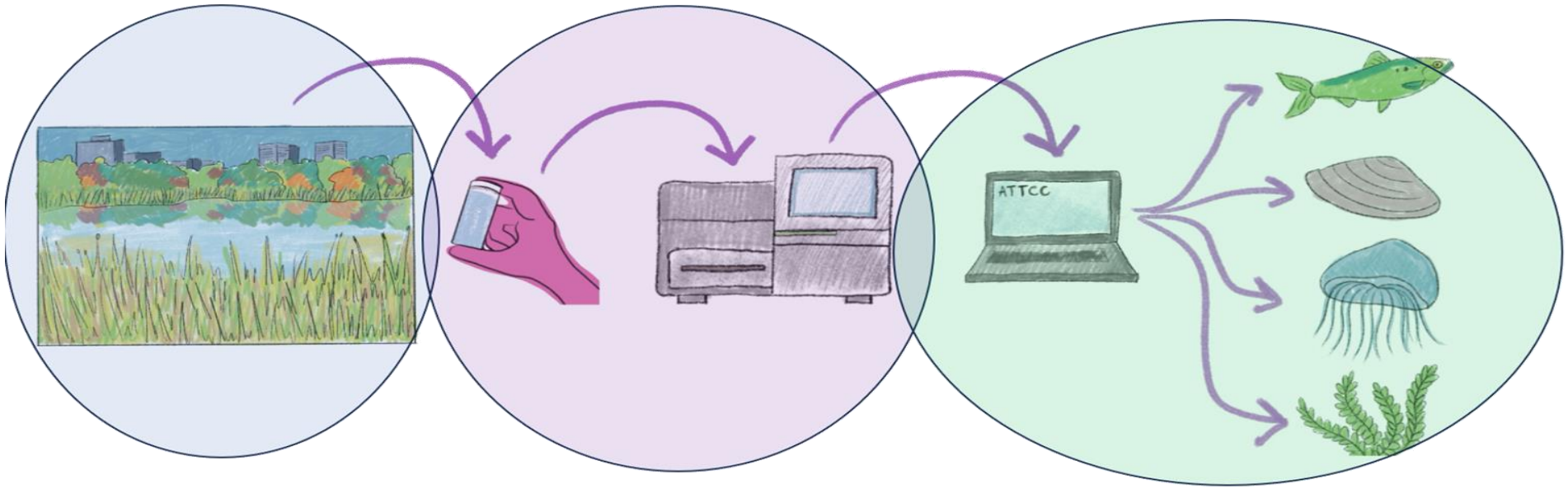




Professional development:
To design a CURE for 2000+ students to complete a research project in two quarters is a huge challenge and by the end of the quarter I could see how much my students progressed and learned about the scientific process. Having to figure out how to get groups to speak with each other, collaborate, and manage all of the moving parts of the course was really **challenging but also rewarding** as a teacher when I was able to figure out solutions to those problems. This course was also the first CURE that I have participated in as an instructor and having this experience definitely helped me write about my unique teaching experiences for **fellowship applications** and **informed my opinion** about traditional vs non-traditional grading. Overall, this course really **pushed me out of my comfort zone as a TA but also helped me develop my leadership, communication, and classroom management skills** more than any other TAing experience so far.

Students learn about field, wet lab, and bioinformatic research as they collect and analyze eDNA data from a local ecosystem



TAs and LAs learn about evidence-based teaching and inclusive mentoring practices as they facilitate the course and foster a collaborative, inquiry-driven research experience for students

The structured learning provides a framework for a diverse instructional team to effectively facilitate the CURE