

# TRANSITIONING FACE-TO-FACE (F2F) INQUIRY BIOLOGY LABORATORY MODULES TO FULLY ONLINE PLATFORMS

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# Background

- UGA Online Learning Initiative – 2013
- BIOL 1103e

Identified Problem: How can we have inquiry in an online lab environment?

- [Late Nite Labs](#) partnership

# Study

## UGA Office of STEM Education: STEM Initiative Mini Grants Program

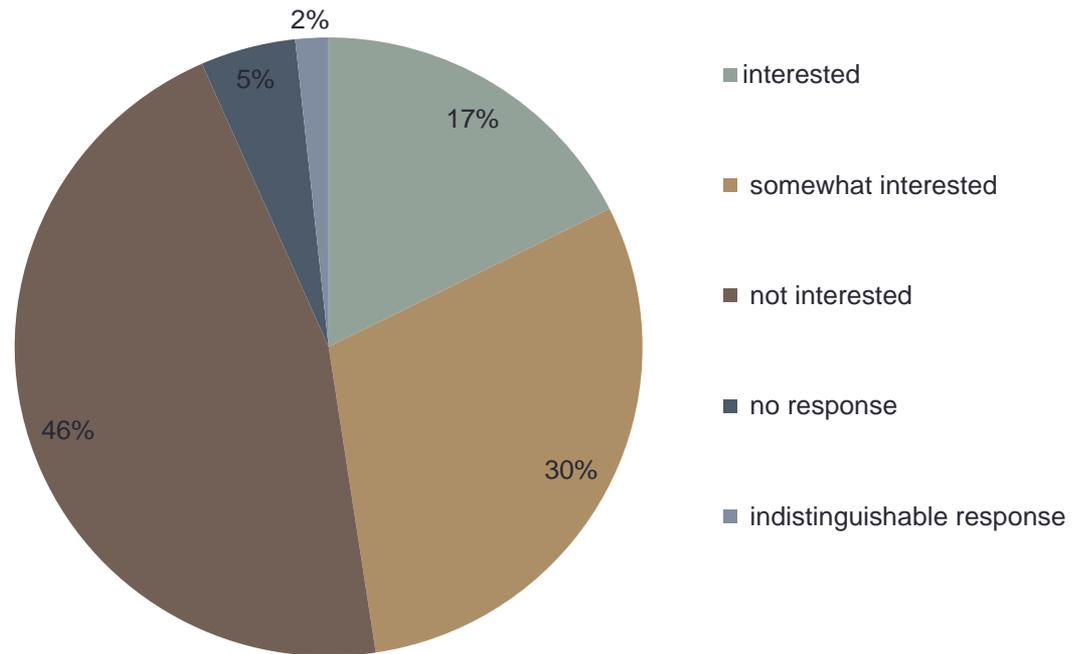
- Goal 1 - Ascertain student interest in enrolling in an online biology laboratory course. ✓
- Goal 2 - Develop and field test one online module in selected spring 2015 BIOL 1103L laboratory sections. ✓
- Goal 3 - Begin developing a course proposal and syllabus to offer online BIOL 1103L in summer 2016.

## Goal 1 - Ascertain student interest in enrolling in an online biology laboratory course.

- Online survey in two sections of BIOL 1103 lecture
- Extra points for answering
- 407 respondents

2. If The University of Georgia offered a fully online version of BIOL 1103L in summer thru session (all of June and July), how interested would you be in taking this course?

**BIOL 1103 student interest in enrolling in online lab course at UGA**



## Goal 2 - Develop and field test one online module in selected spring 2015 BIOL 1103L laboratory sections.

- Antibiotic Resistance two-week F2F module
- Development and run through with online instructors and PIs: 4 ½ months
- Implemented: Feb. 17 – Mar. 5

### Study Participants

#### Instructors

- 2 Online: 98 students
- 2 F2F: 85 students

**Students:** 199 (183 complete data sets)

# Antibiotic Resistance 2-week Module

## F2F

- Written Pre-labs 1 and 2
- Experimental Design and Data Analysis
  - Both written/drawn with verbal feedback from instructor, discussion with lab partner and class
- Experiment: hands-on
- Written post-lab, normally completed in class after class discussion

## Online: [Late Nite Labs](#)

- Typed Pre-labs 1 and 2
- Experimental Design and Data Analysis
  - Both written with typed feedback from instructor, discussion boards with prompts available for class discussion; instructor email for help
- Experiment: simulation
- Typed post-lab, completed after class data table generated. Discussion board available for class discussion.

# Data Collection

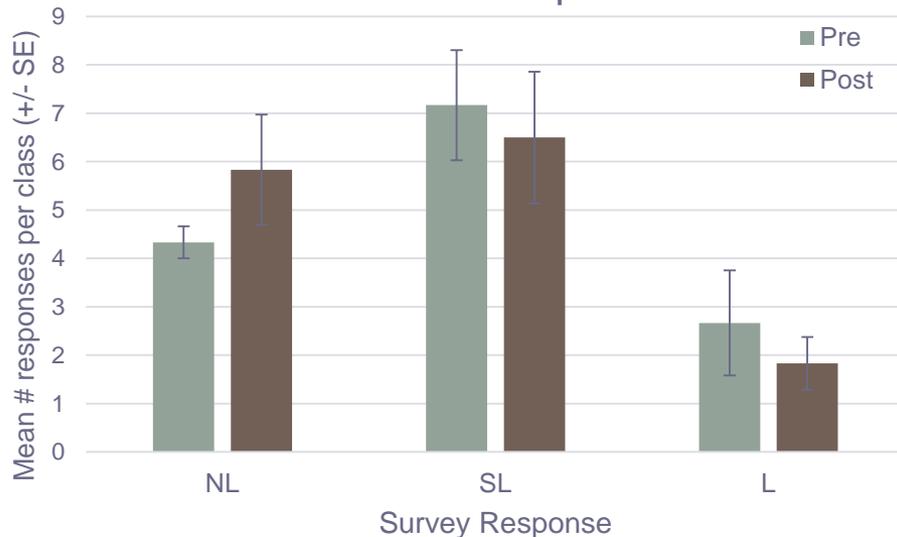
- BIOL 1103 lecture students ✓
- F2F lab students
  - Pre & post likelihood of taking online lab course at UGA ✓
  - Pre-post expectations of online lab course
- Online lab students
  - Pre & post likelihood of taking online lab course at UGA ✓
  - Pre: expectations of online lab course
  - Post: were expectations met
- F2F and Online students
  - Summative post lab assignments – double blind grading
- Online instructors
  - Advantages and disadvantages for instructors and students in an online vs F2F lab module

# Findings

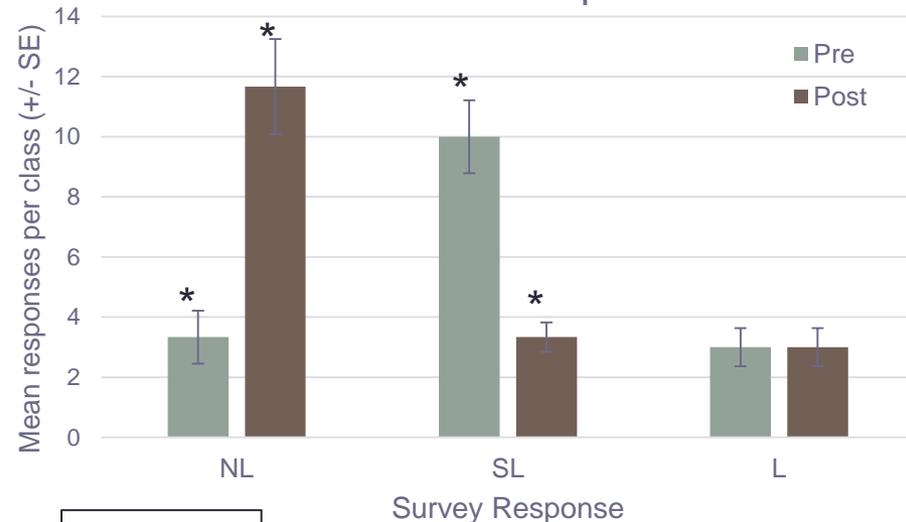
- Survey question: If it were offered, how likely would you be to enroll in a completely online introductory biology laboratory course (such as BIOL 1103L or BIOL 1104L) at The University of Georgia?

NL = not likely, SL = slightly likely, L = likely

F2F Student Responses



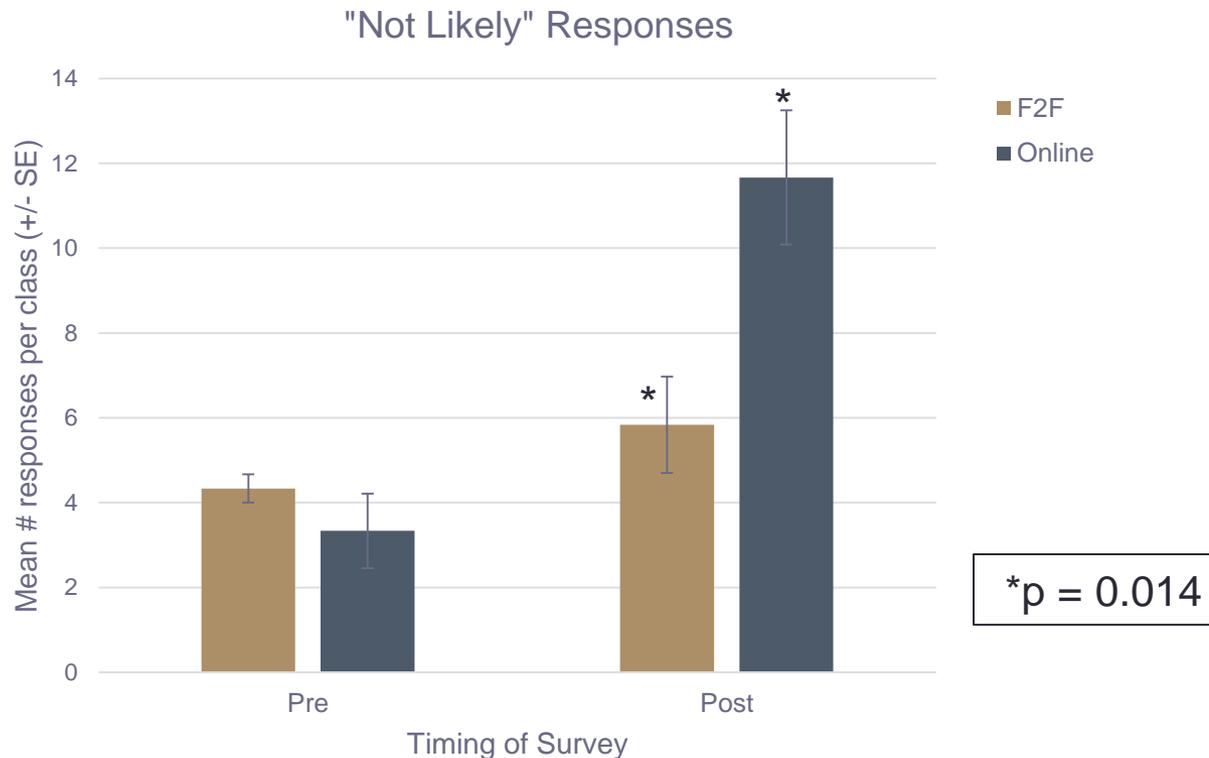
Online Student Responses



\*p < 0.001

# Findings

- Survey question: If it were offered, how likely would you be to enroll in a completely online introductory biology laboratory course (such as BIOL 1103L or BIOL 1104L) at The University of Georgia?



# Challenges

- Integration of pedagogy – bringing inquiry into online environment
    - Simulation
  - Instructor – student interaction
  - Student – student interaction: working partners and groups
- \*Discussion posts, peer reviews, formative assignments, virtual office hours, live chat

# Next Steps

- Continued Data Analysis
- Re-vamp module
- Begin to transition other modules
- Propose fully online lab class – fall 2016?

# Final Thoughts

- Hybrid class
- Instructor training needed
- Students vested in online classes would likely be the ones to sign up for the course

Acknowledgements: UGA Office of STEM Education: STEM Initiative Mini Grants Program