

# Assessing a Biology-Math- English First-Year Learning Community:

Statistical Comparisons Between  
Learning Community and Regular  
First-Year Students

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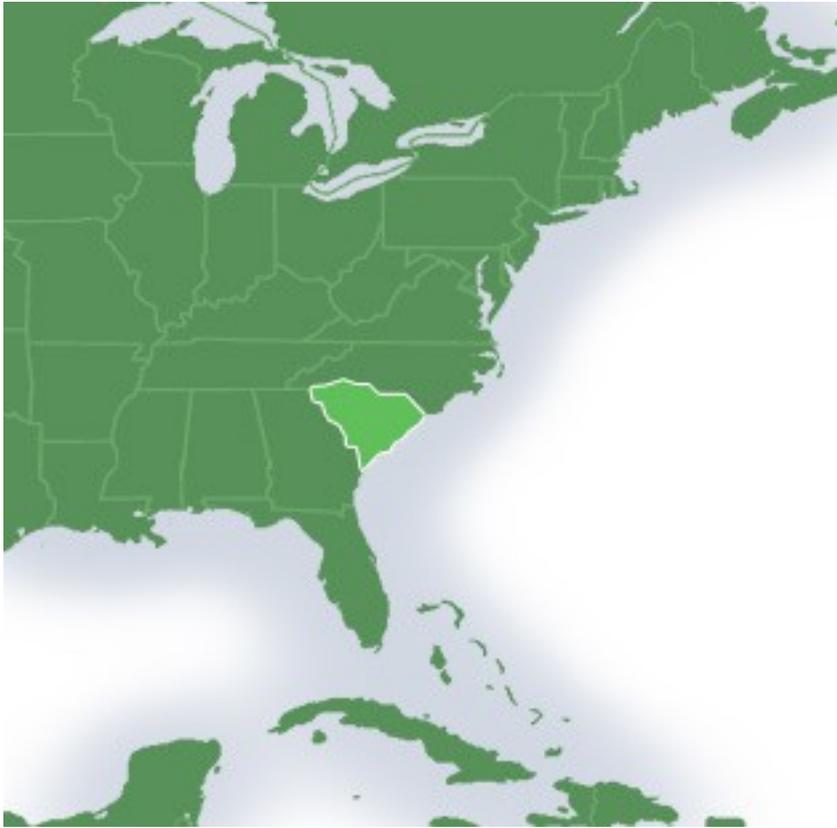
# Acknowledgements:

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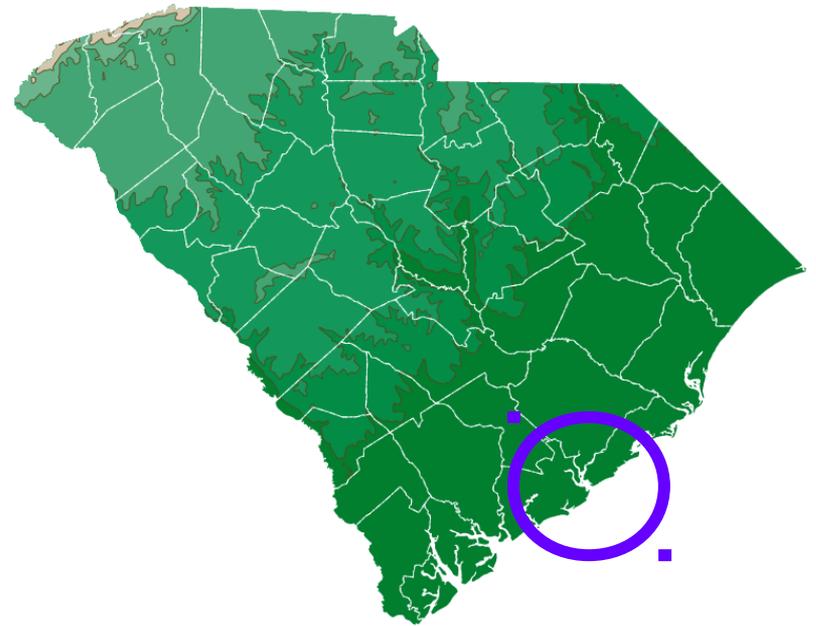


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## Charleston, South Carolina



# COLLEGE of CHARLESTON



Make the most of your first year at the College, enroll in a first-year seminar or a learning community.

# FYE benefits

**Through these courses you will:**

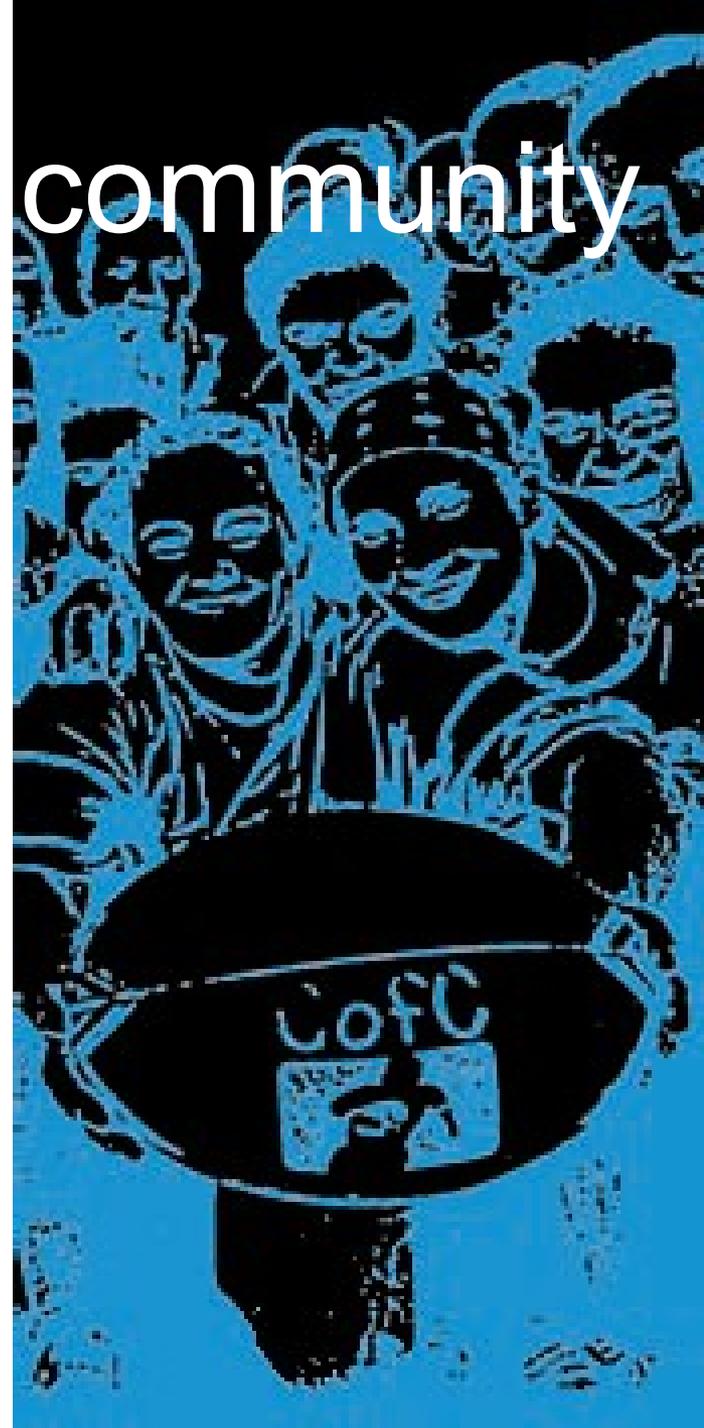
- Meet students with similar interests
- Develop academic success skills
- Work closely with faculty
- Discover the campus and the city
- Form strong peer support systems
- Utilize campus resources

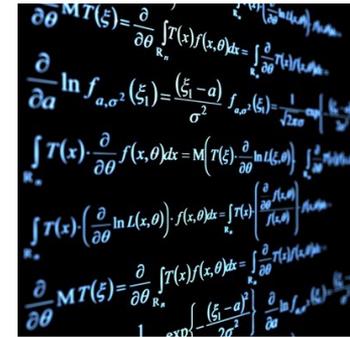


# learning community

A Learning Community links two or more courses.

Faculty teaching the courses work together to set the curriculum, schedule joint class activities and explore the ways in which the subjects are interrelated.





## Math & Science Freshman Learning Community

This learning community emphasizes the inherent connections between biology, mathematics, and composition, and puts these disciplines firmly in place as cornerstones of a scientific education.

# Supplemental Instruction



Tell me, and I forget.

Show me, and I remember.

Involve me, and I understand.

# Learning Community, year 1

**Supplemental  
Instruction in  
Math & Biology**



**Biology 111**

**Math 111:  
Pre Calculus**



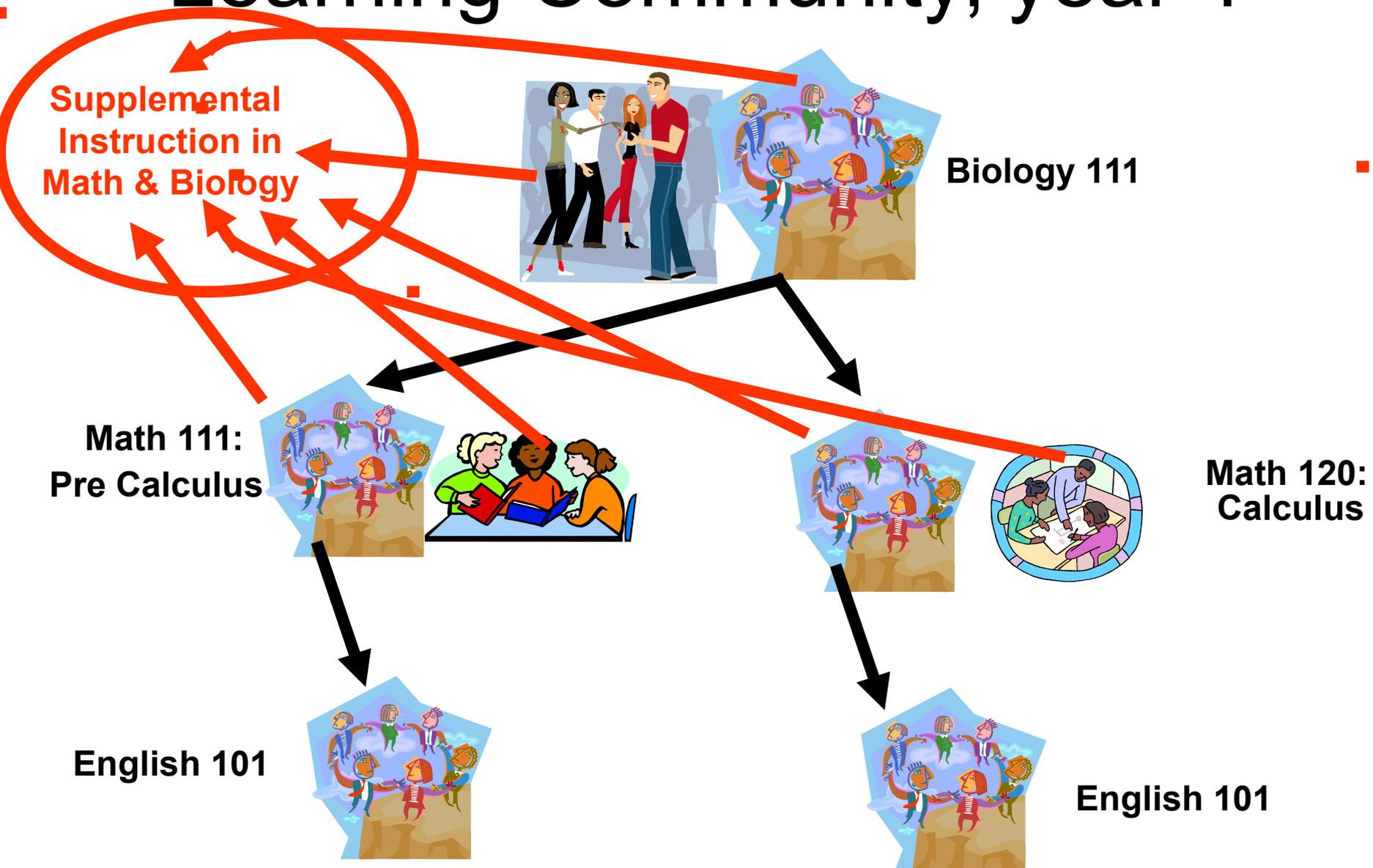
**Math 120:  
Calculus**



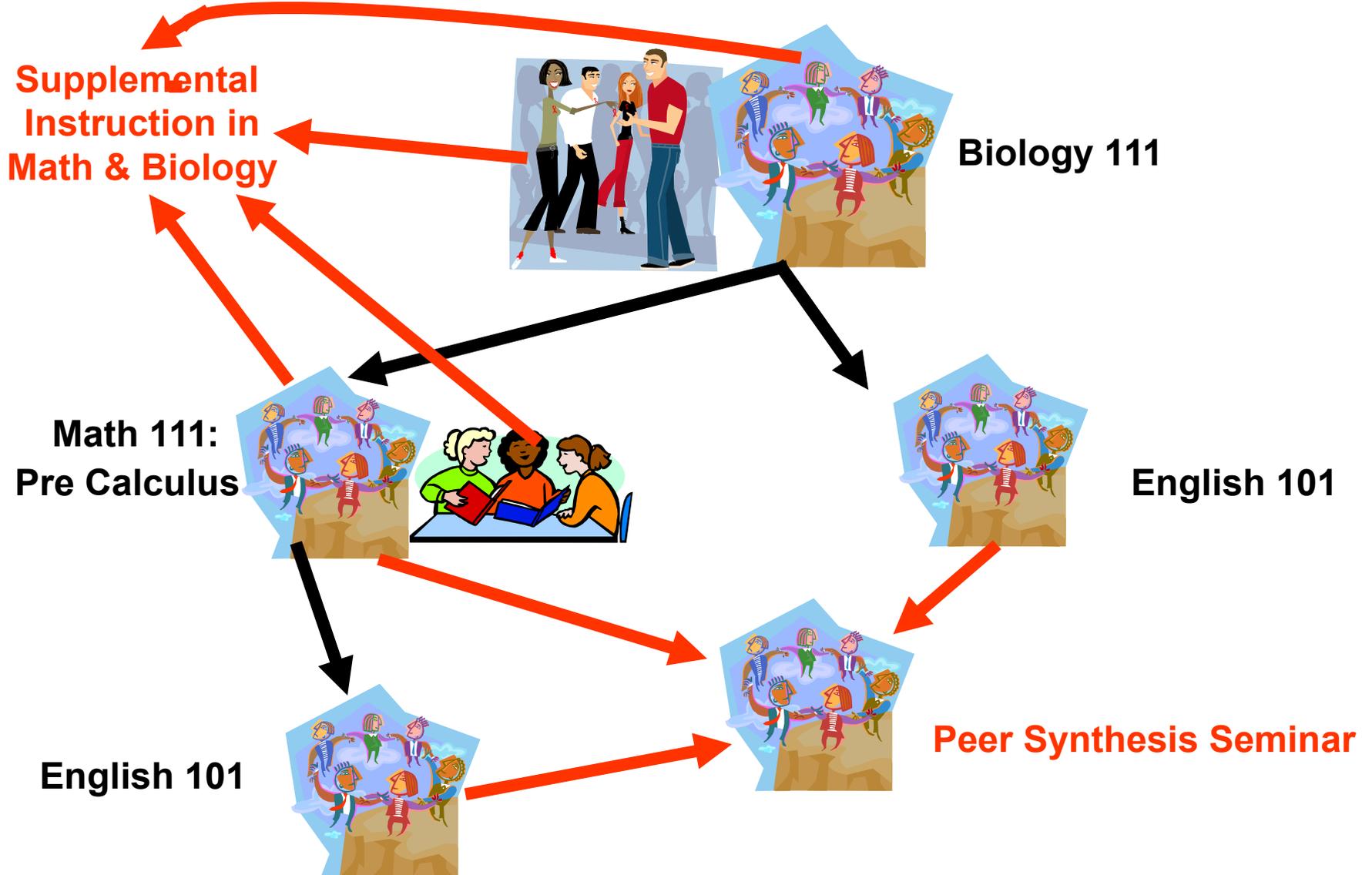
**English 101**



**English 101**



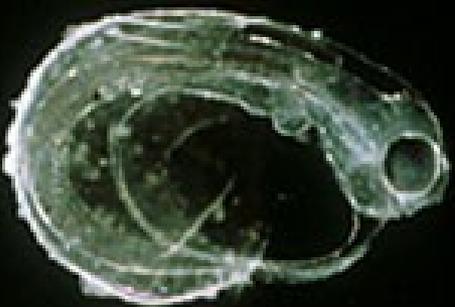
# Learning Community, year 2



# Peer Facilitation



# Perspective...



# Assessment

# Concern:

- Self selection of students.
  - Stronger students choose the learning community- creating a bias in the data?
- Statistical analyses of incoming regular and learning community student PGI show no significant differences between the groups in 2007 and 2008.

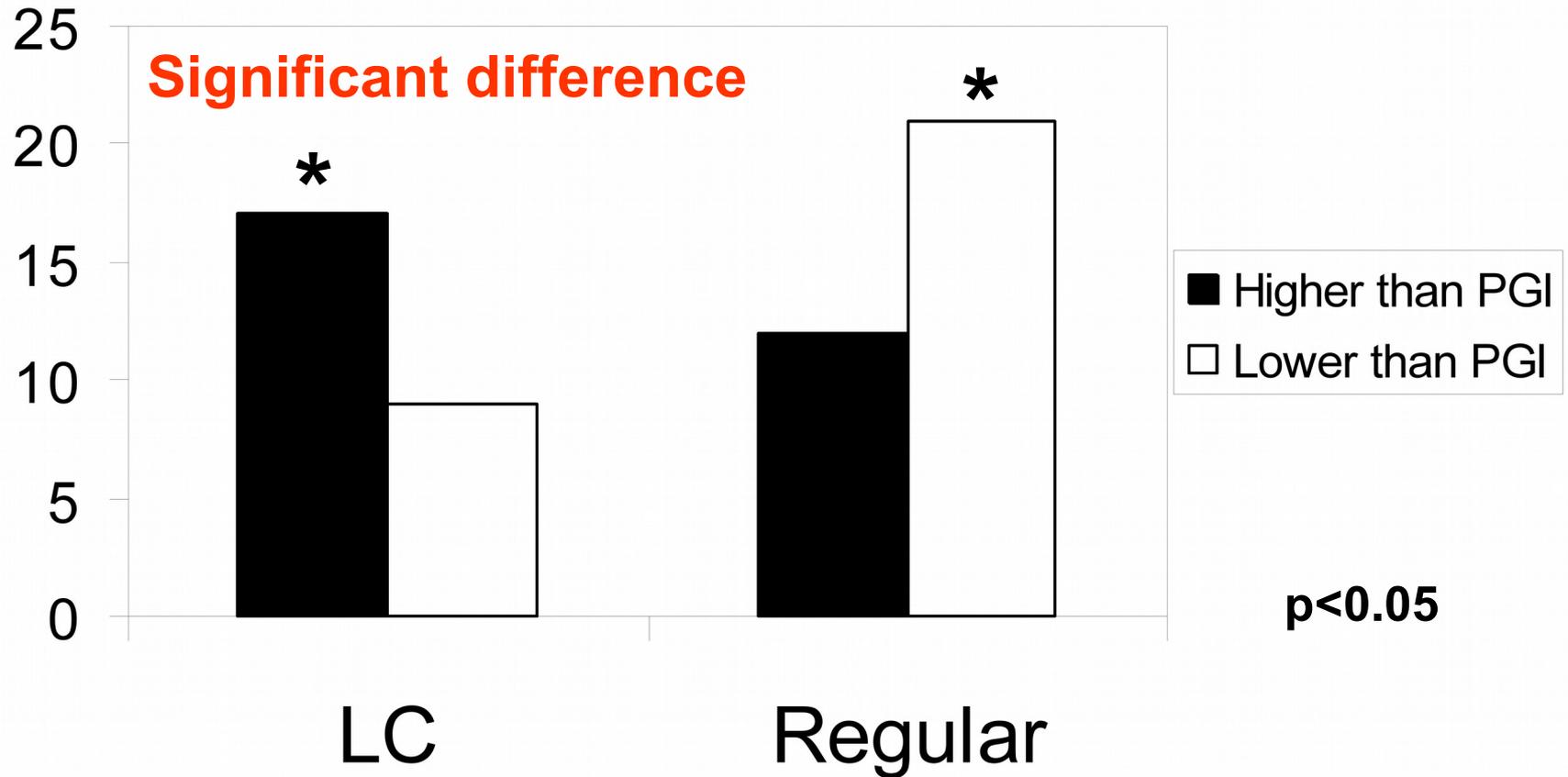
# Statistical assessment:

- Comparing LC versus Regular CofC students 2007 and 2008:
  - End semester GPA
  - End freshman year GPA
  - GPA versus PGI
  - Retention after freshman year
  - Exam scores in biology
  - Written assignment grades in biology

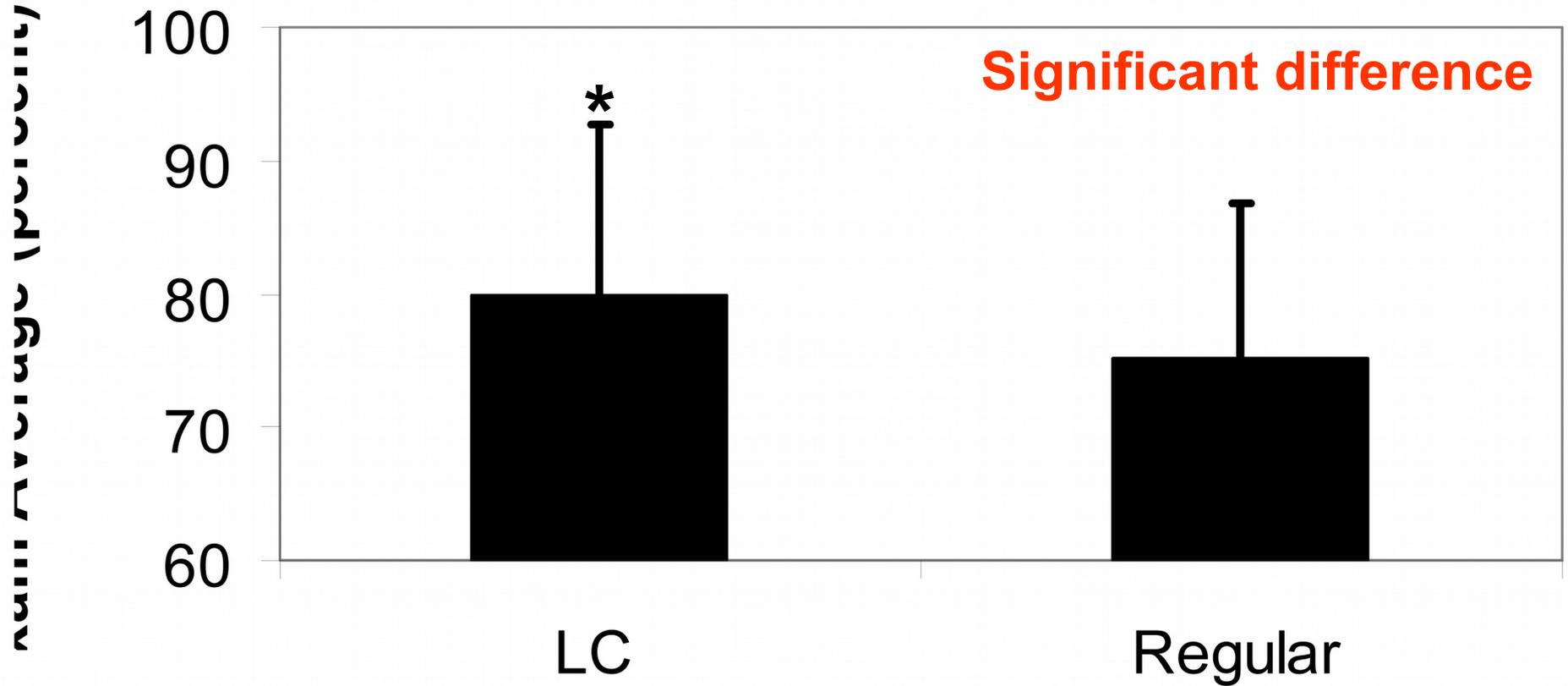
# Statistical assessment:

- Also considered:
  - In state versus out of state students
  - Regular CofC students who chose to attend SI versus those that did not.

# GPA versus PGI for LC versus Regular



# Biology Exam Scores LC versus Regular



$p = 0.0114$

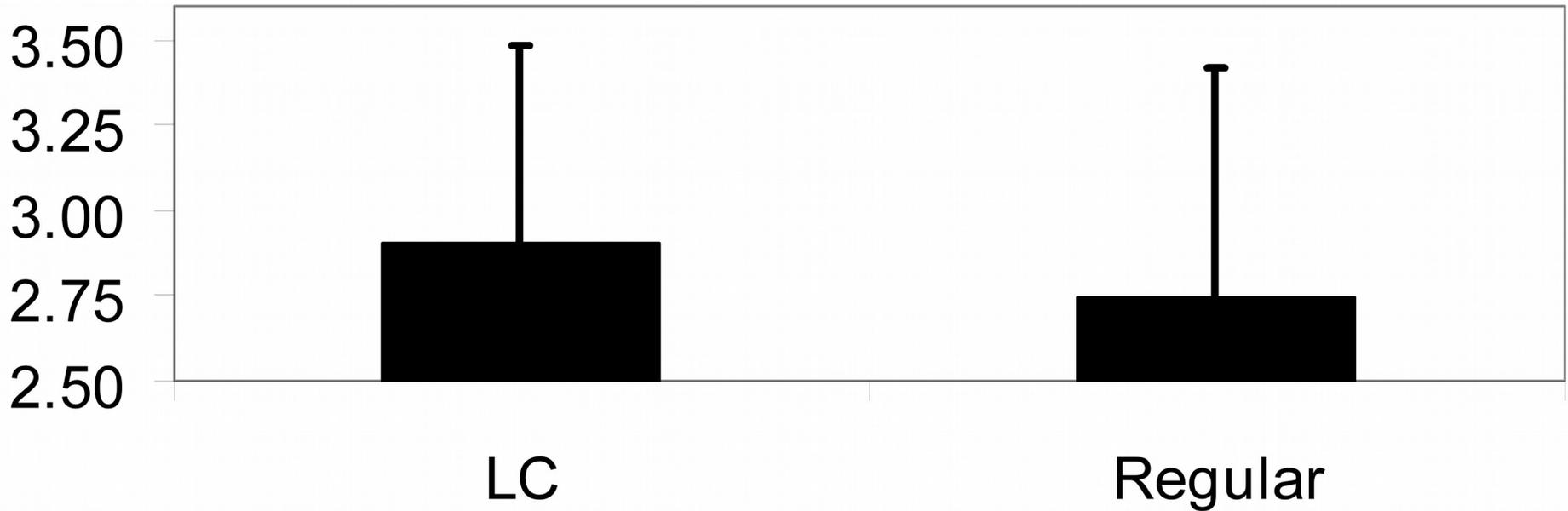
## First Semester GPA LC versus Regular



**No significant difference**

**GPA**

# Freshman Year GPA LC versus Regular



**No significant difference**

**GPA**

# Other Results:

- No significant differences in:
  - Retention!
  - Writing grades in biology
  - Instate versus out of state students

Why did the LC students  
outperform the regular students?

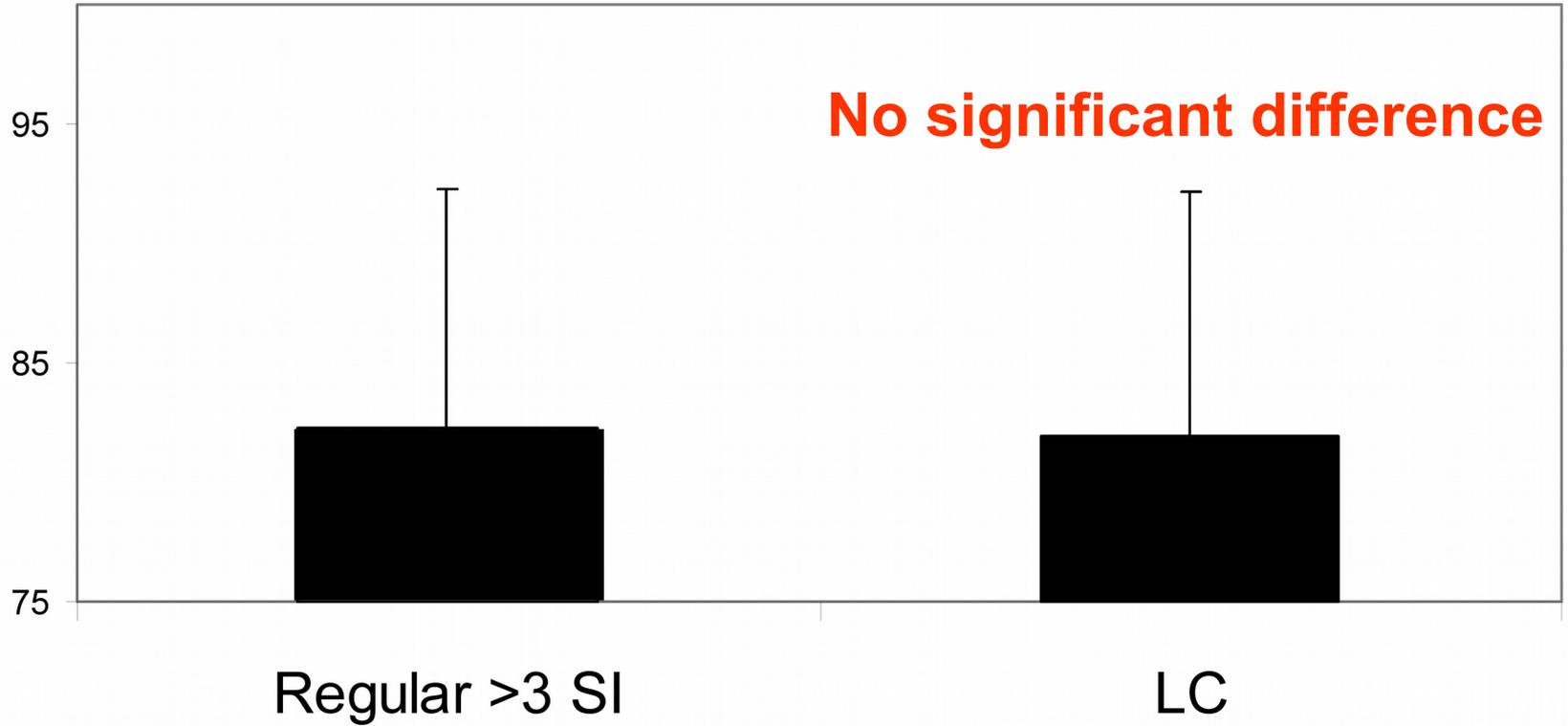
What may have made the LC successful?

- SI attendance?
- Friendships/bonding?
- Other possibilities?

2007

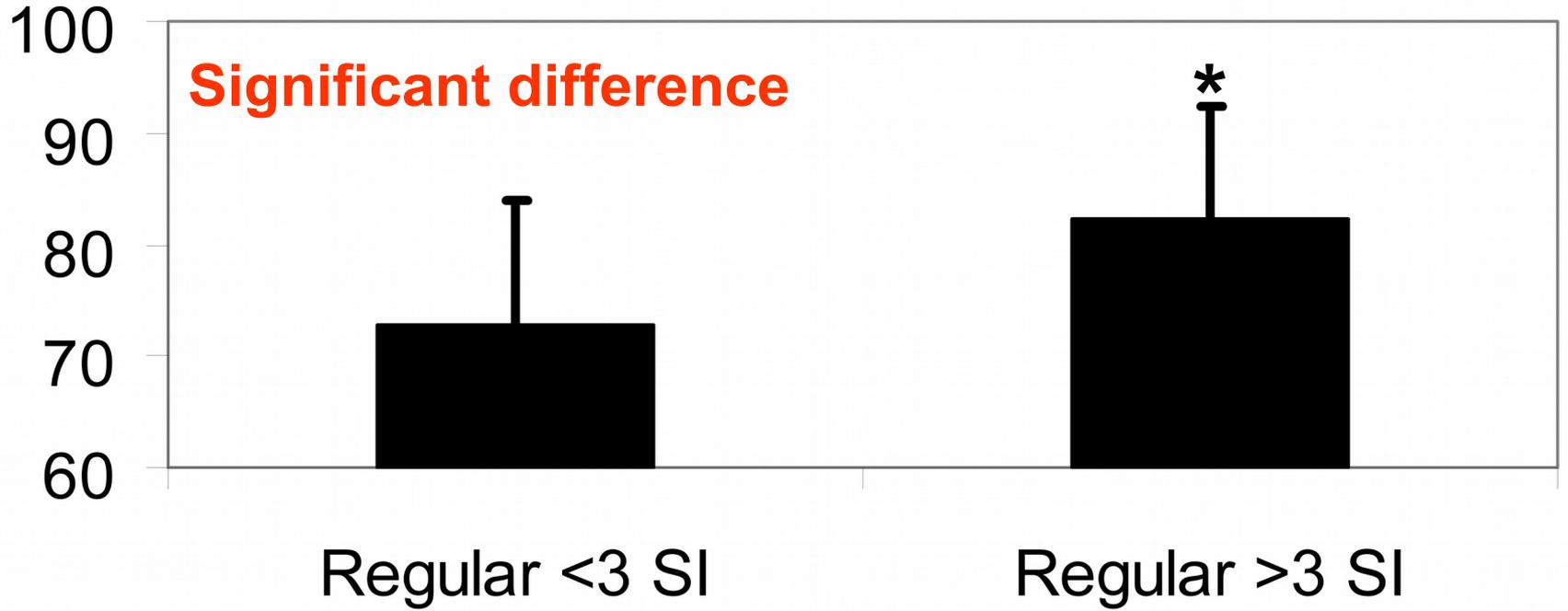
## Biology exam average LC versus Regular with >3 SI

exam average (percentage)



2007

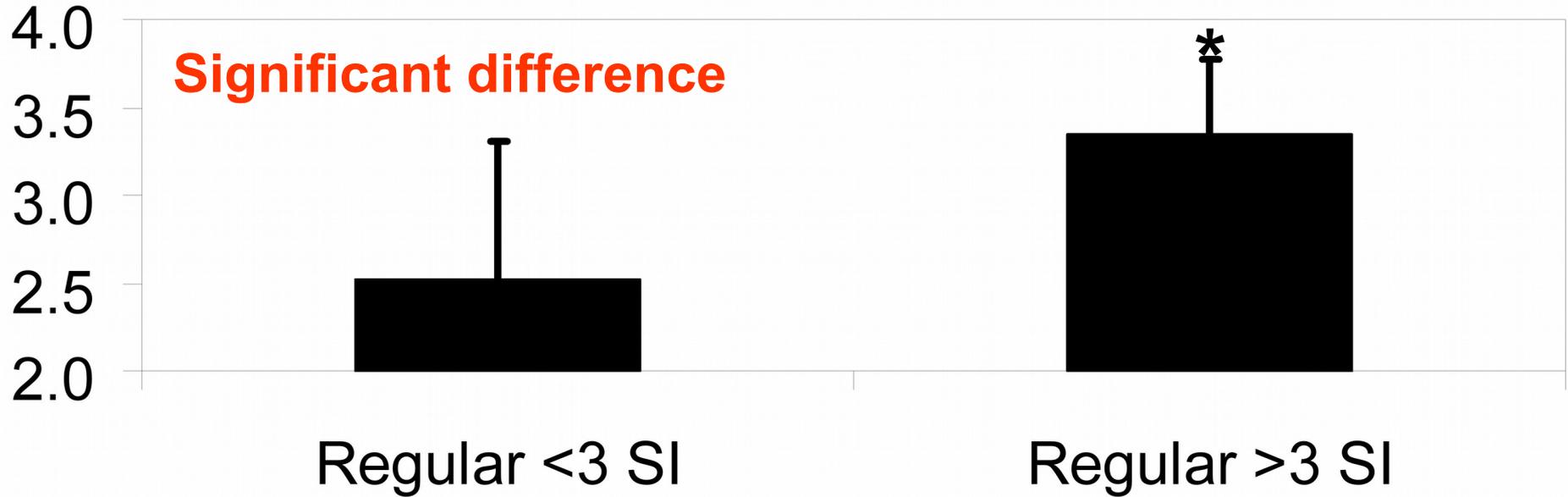
# Biology Exam Scores versus SI Attendance



$p = 0.0375$

2007

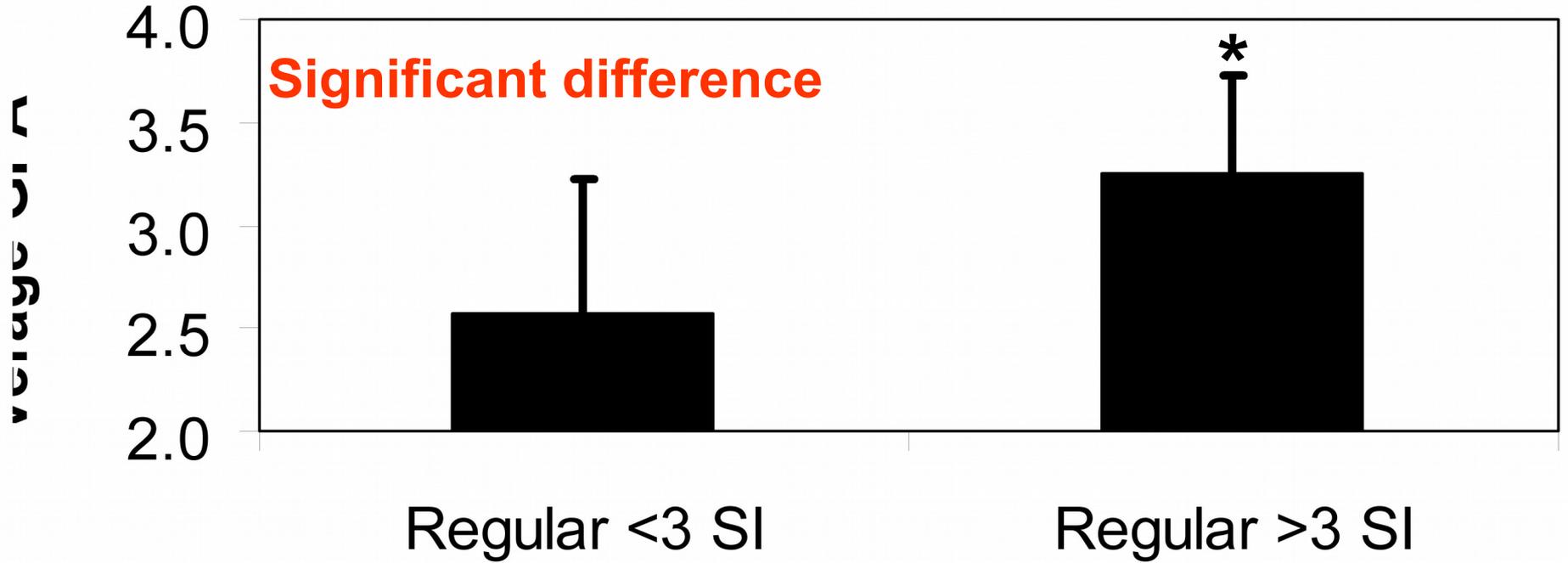
# First Semester GPA versus SI attendance



$p = 0.0013$

2007

# Freshman Year GPA versus SI Attendance



$p = 0.0047$

# Who went to SI?

- SI attendance >3 times for regular students was 26%, slightly above average.
- SI attendance >3 times for LC students was 97%.

# Summary 2007

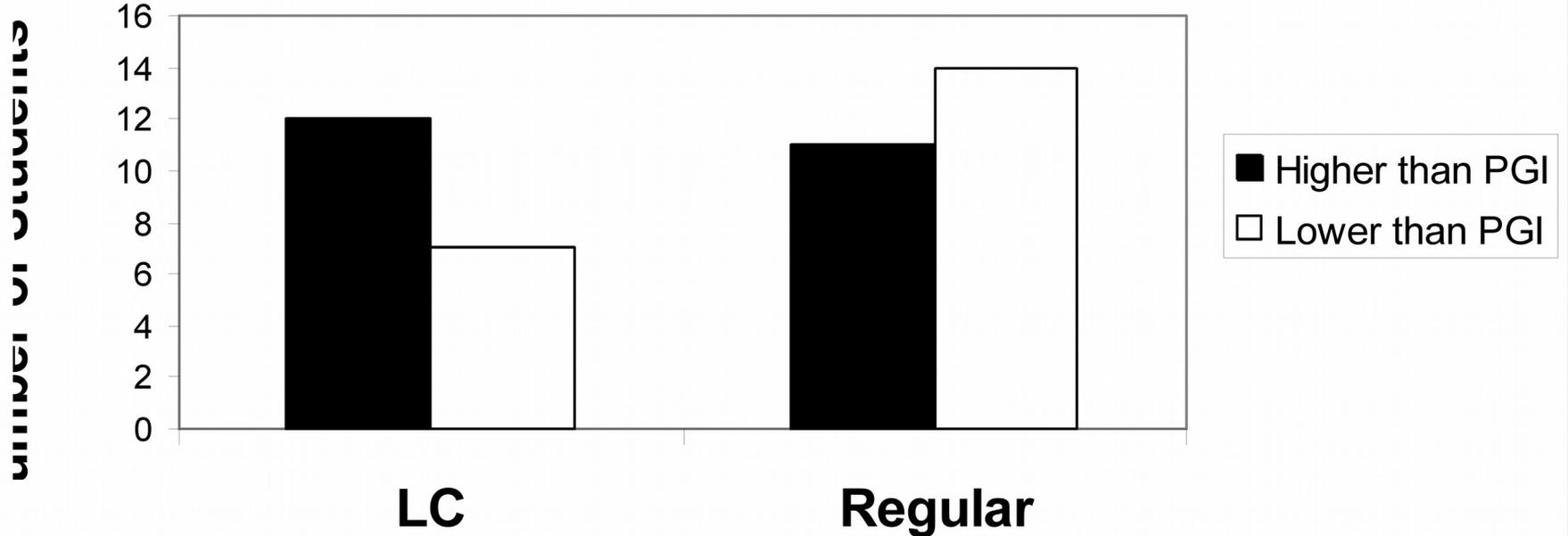
- LC students outperformed regular students in several areas
- Regular students that regularly attended SI performed as well as LC students

# Year two, 2008.

- Repeated the LC in 2008
- Added Peer facilitation for LC students
- Hoped for clarification of 2007 trends through assessment with 2 years of data

2008

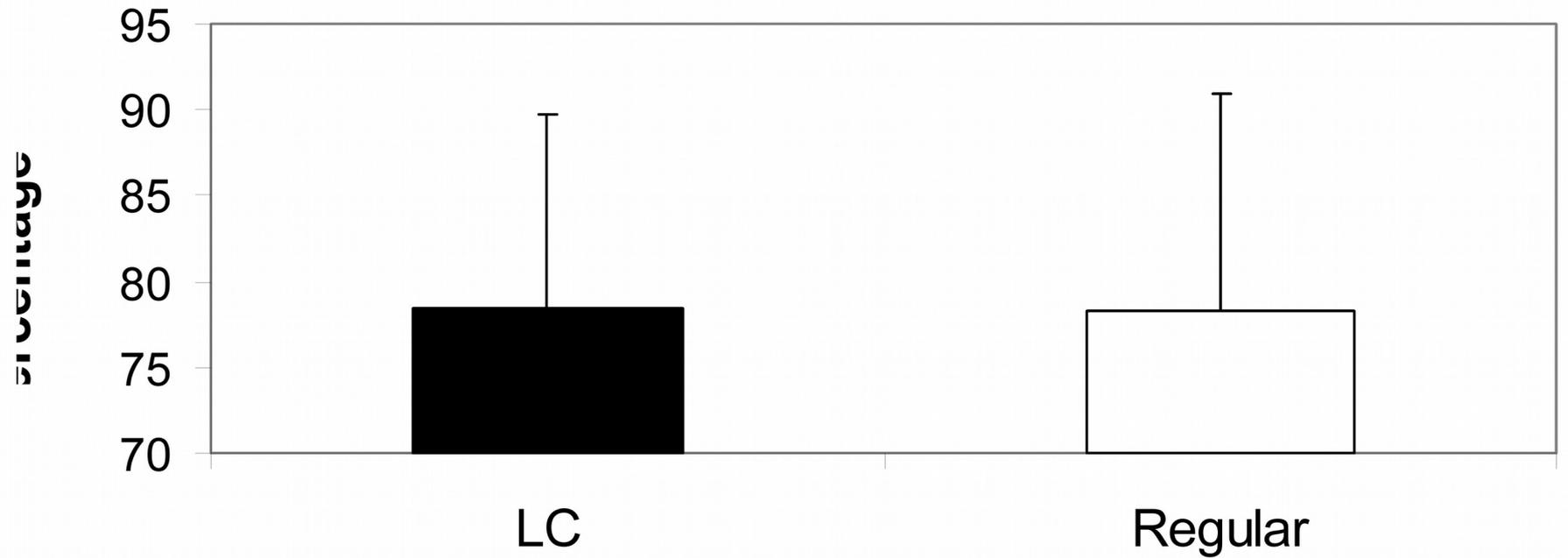
## GPA vs PGI for LC vs Regular



**No significant difference**

2008

### biology exam average LC vs Regular



**No significant difference**

# 2008 **Cutting to the chase:**

- No statistical differences between LC and regular students in any areas in 2008.
- Things got muddier instead of clearer.

# Why?

# Who went to SI?

- SI attendance >3 times for regular students was 30%, above average.
- SI attendance >3 times for LC students was only 55%.

# Discussion...

- People are less predictable than fish.
- Competition for students with other LC's?
  - New in 2008 “Pre Med” LC between biology and chemistry was very popular.
- Attitude and enthusiasm? A bum crop?
  - Some LC students were unaware they had signed up for the LC!
  - Many 2008 LC students refused to go to SI and skipped peer facilitation seminars.
  - Four LC members withdrew from the LC by mid semester for academic reasons (failing Math, English, or Biology).
- Adding PF in addition to SI → overkill?
- Regular students benefited from more SI, small group discussions, active teaching style and critical thinking pedagogy and made gains?
- Other possibilities?

# Overall Results 2007-2008

- LC students outperformed Regular students in several areas in 2007, but in no areas during 2008.
- SI is an effective tool for engaging freshman in active learning & may be an important component of our LC's success.

# Conclusions:

- Assessing learning is challenging!
- Statistics are somewhat inconclusive regarding the success of the learning community.
- There may be significant interaction between involvement with a learning community and SI attendance.
- The hunch is that this particular learning community has been successful on many levels that are difficult to evaluate statistically.
  - Student feedback suggests improvement in critical thinking skills, emotional intelligence, communication, bonding, friendships...

# Future Plans:

- Year three... fall 2009 will offer the same learning community
- More data
- Hoping for more clarity and less mud
- More formal qualitative assessment may also be useful
- No cohorts this year – separate sections

# Thank You!

