

Student Interest In Science

During the transition from K-12 to college and after taking a single science course.

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taking a single science course.

Methods

For the next two questions, please use a scale from 1 – 5 where 1 means you had no interest in or were not actively engaged at all with science, and 5 means you had total interest in or were very actively engaged with science.

Rate your interest in **science as a process** (doing experiments and lab work, being actively engaged with science) during...

Elementary	Middle School	Early High School	Late High School	College

Rate your interest in **science content** (facts and understanding, learning new things) during...

Elementary	Middle School	Early High School	Late High School	College

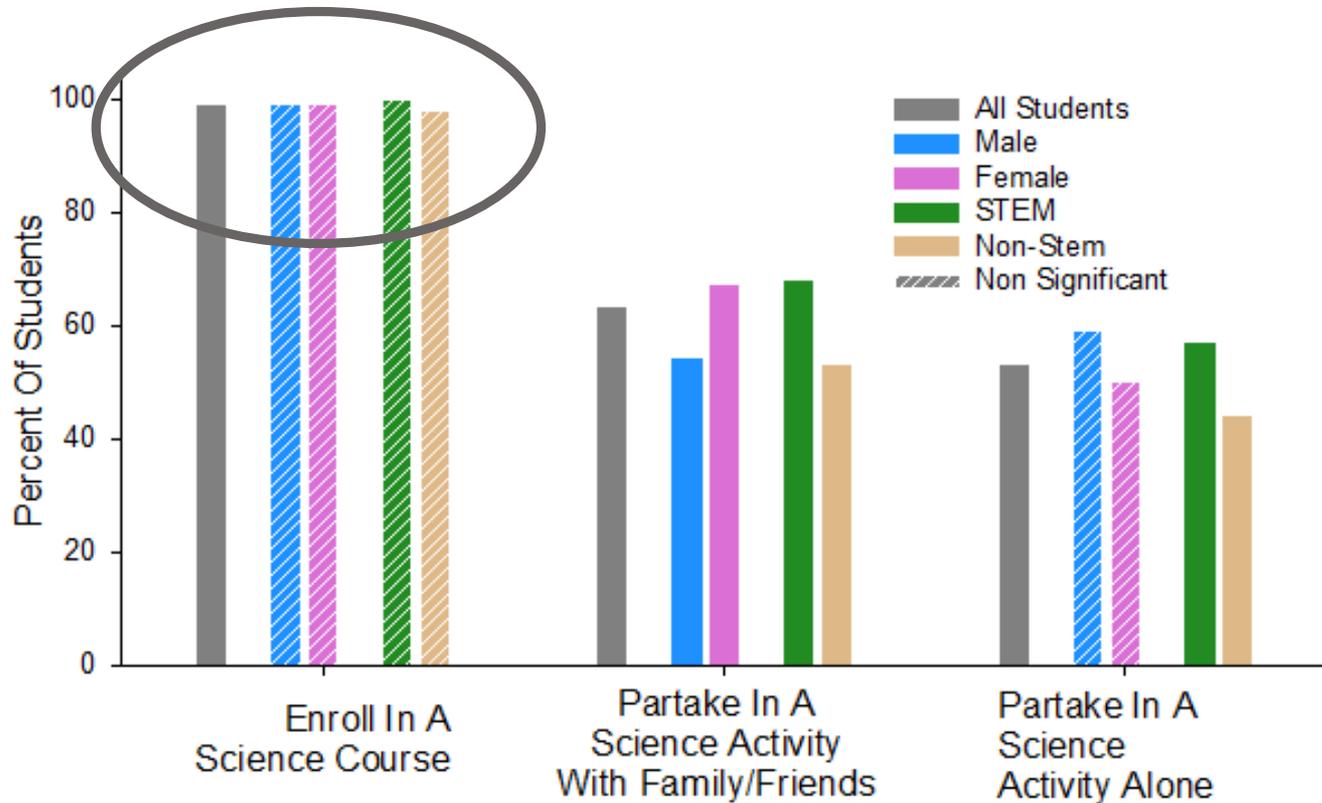
If you were interested in science in the past, but not currently interested in science now, please briefly explain what happened to cause the change.

- Student surveys administered to ~350 college students at three different schools in the Oklahoma City Metro Area
- Simple yes/no, ranking and Likert scale questions

Part One

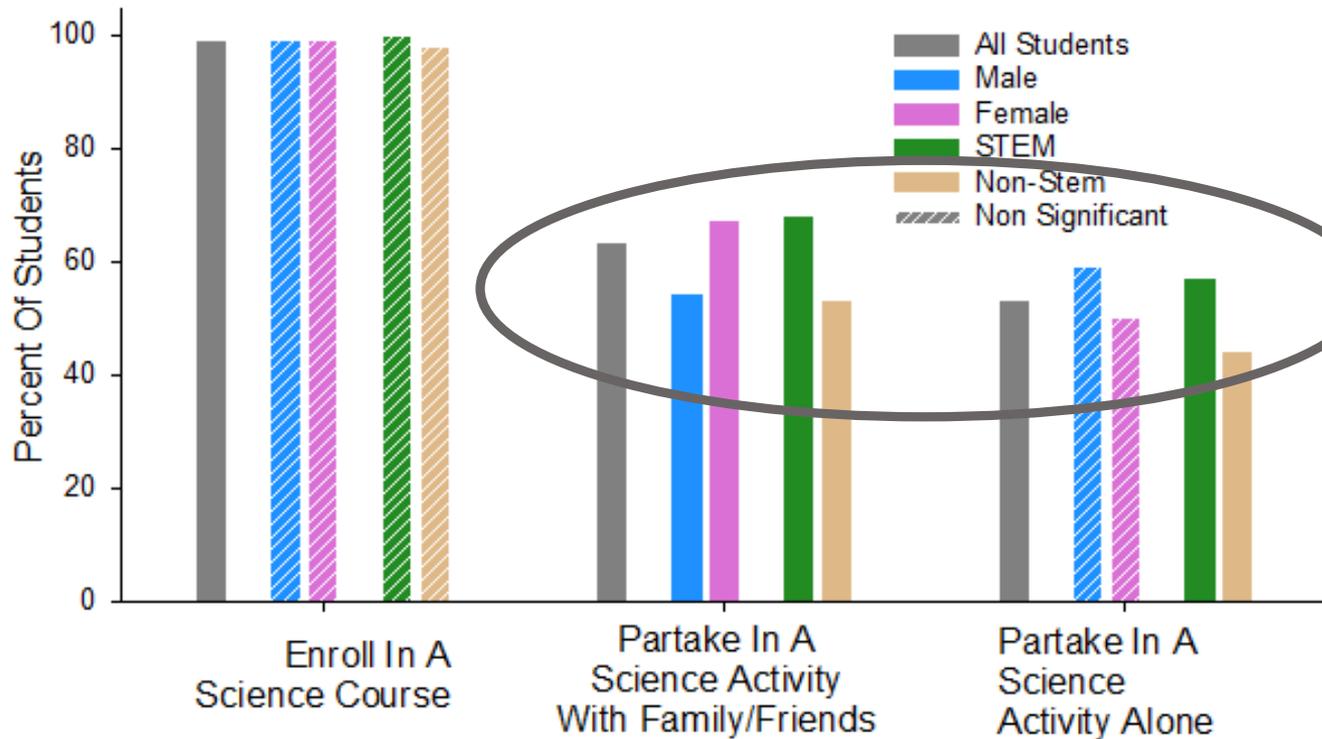
Before college, what are students like?

Before starting college, did you?



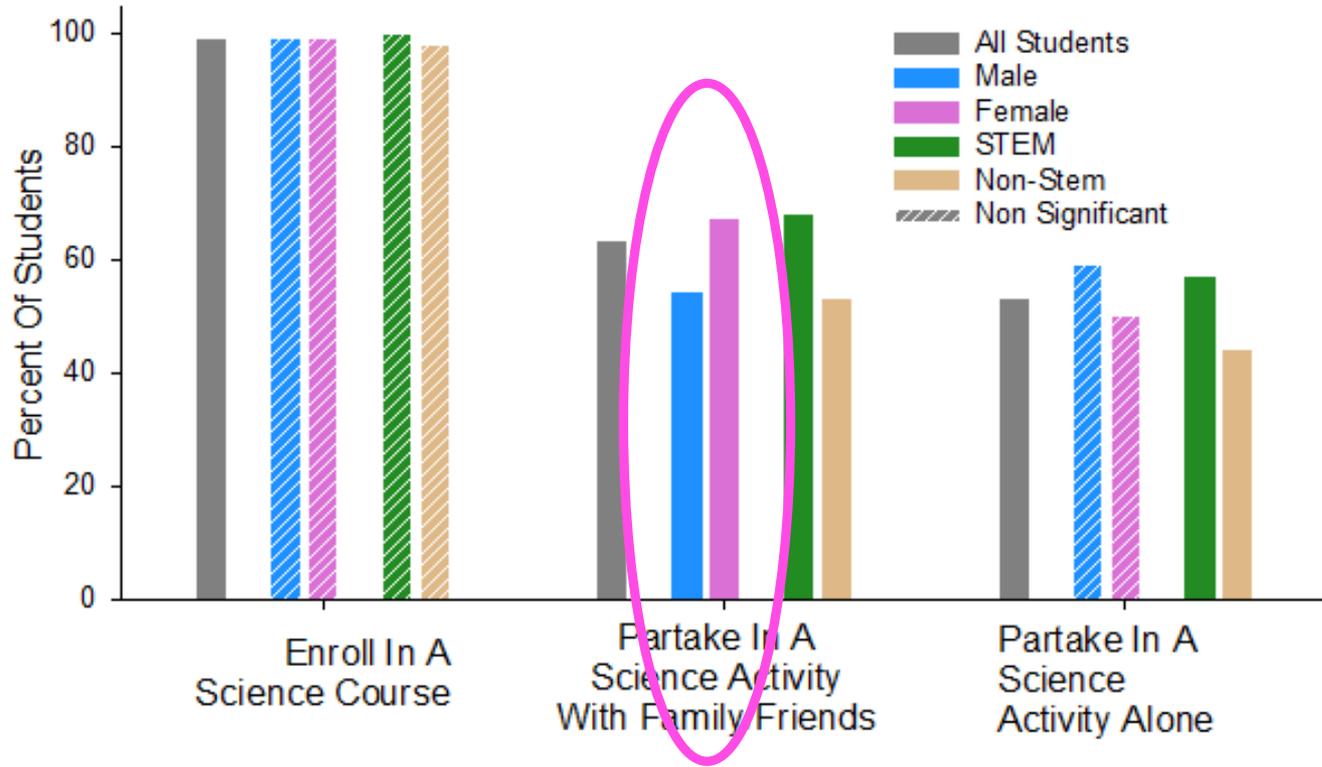
- Every student has taken a science course

Before starting college, did you?



- Every student has taken a science course
- Fewer students interact with science outside of the classroom

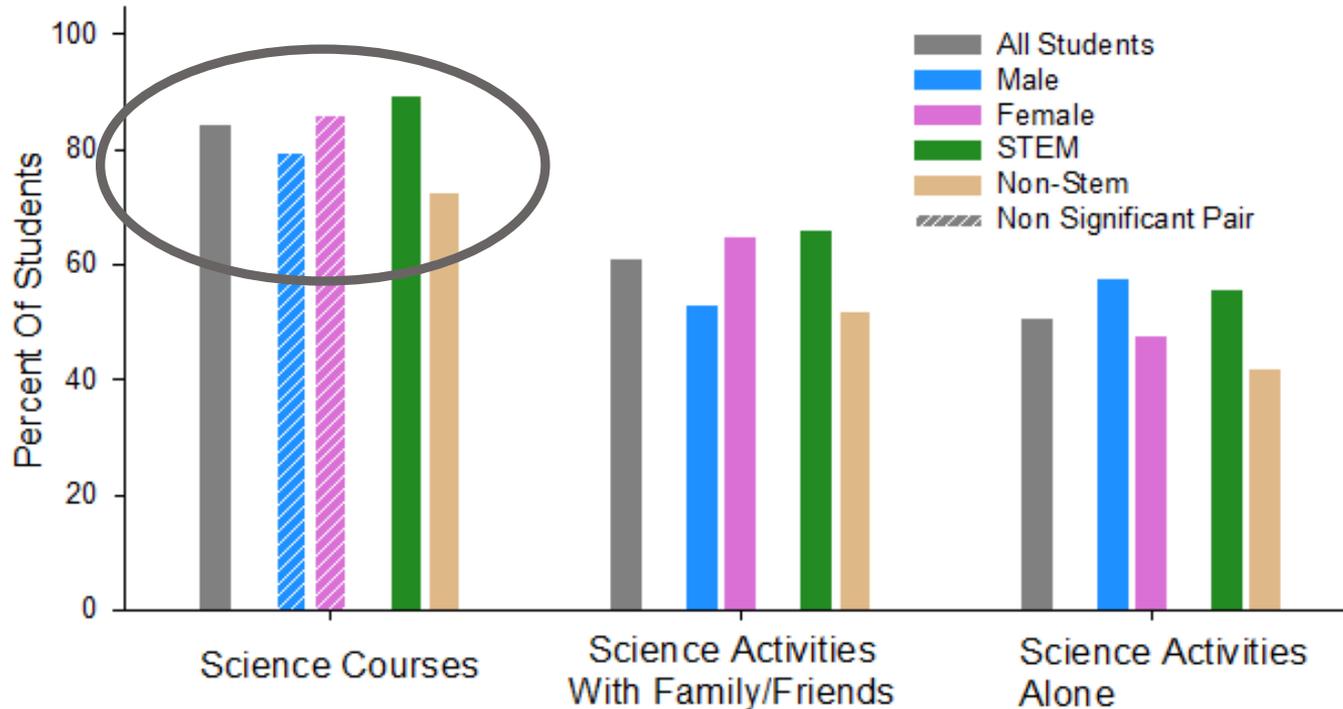
Before starting college, did you?



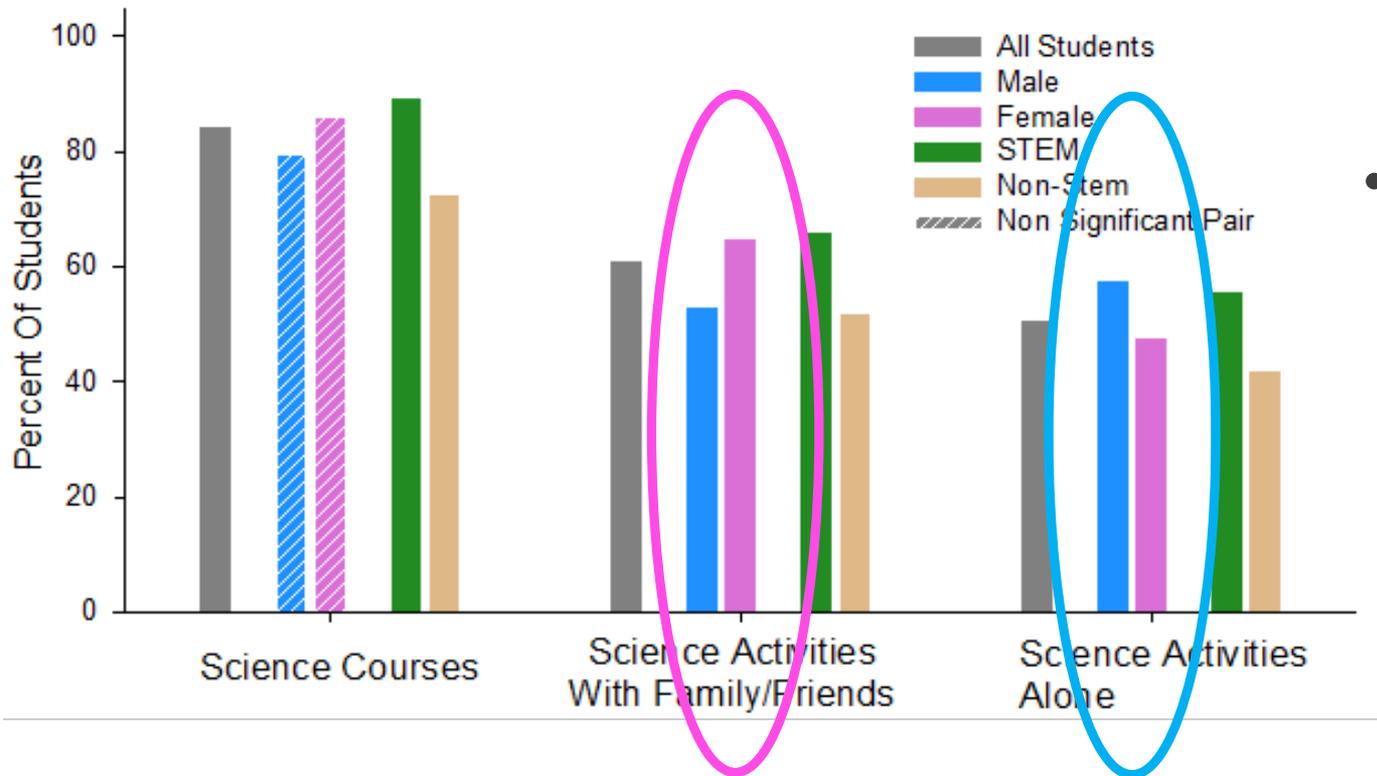
- Every student has taken a science course
- Fewer students interact with science outside of the classroom
- Females interact with science socially

Before starting college, did you enjoy?

- Overall, students enjoy science classes

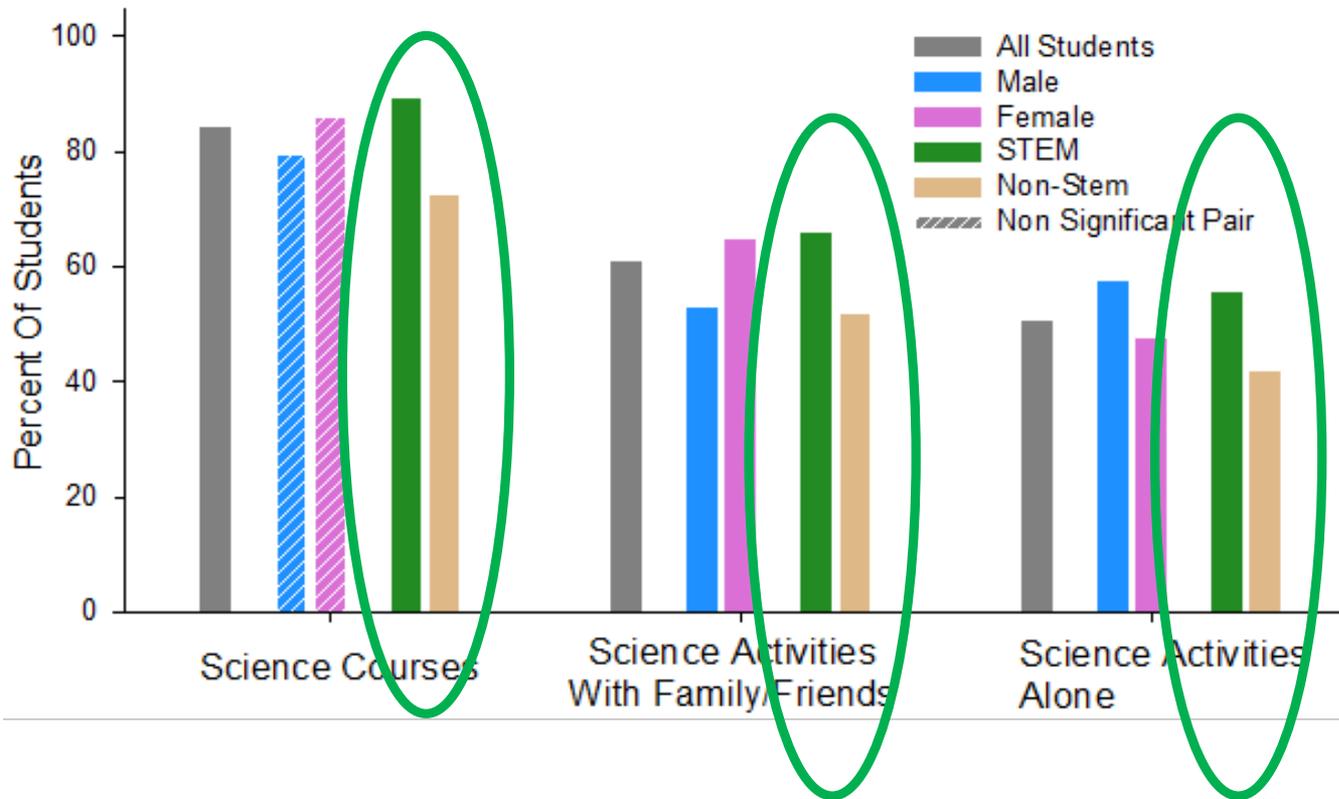


Before starting college, did you enjoy?



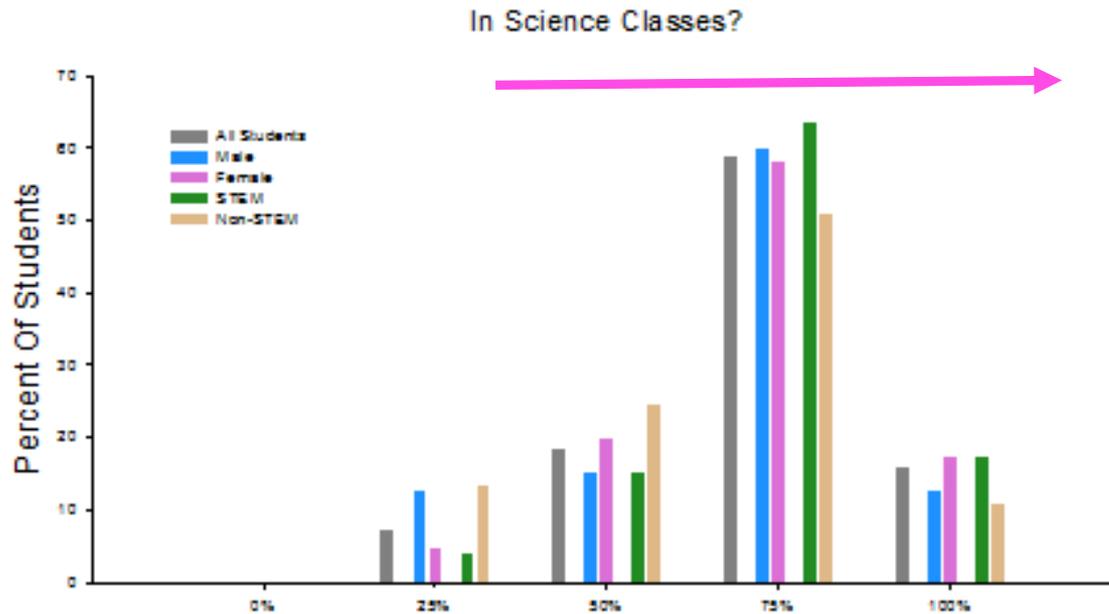
- Overall, students enjoy science classes
- Females enjoy science socially, males enjoy science alone

Before starting college, did you enjoy?



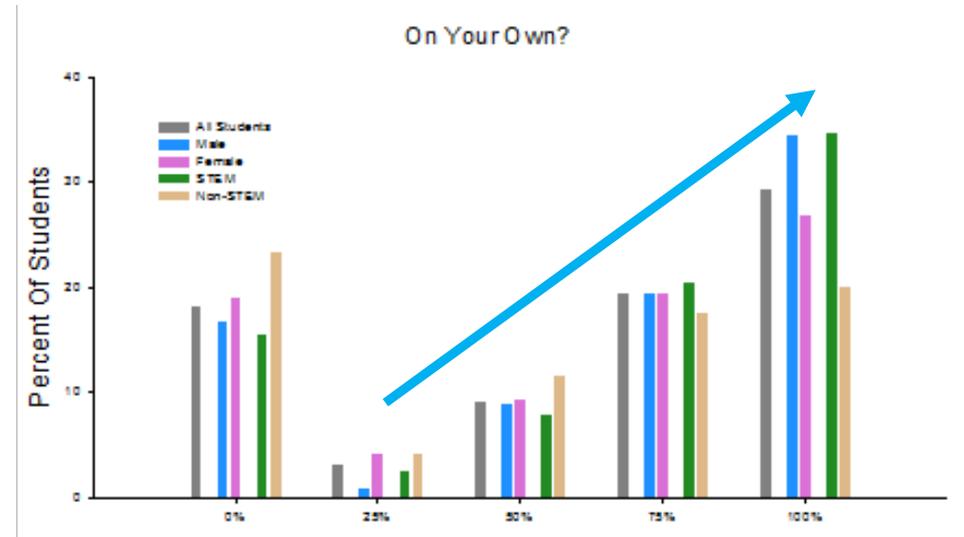
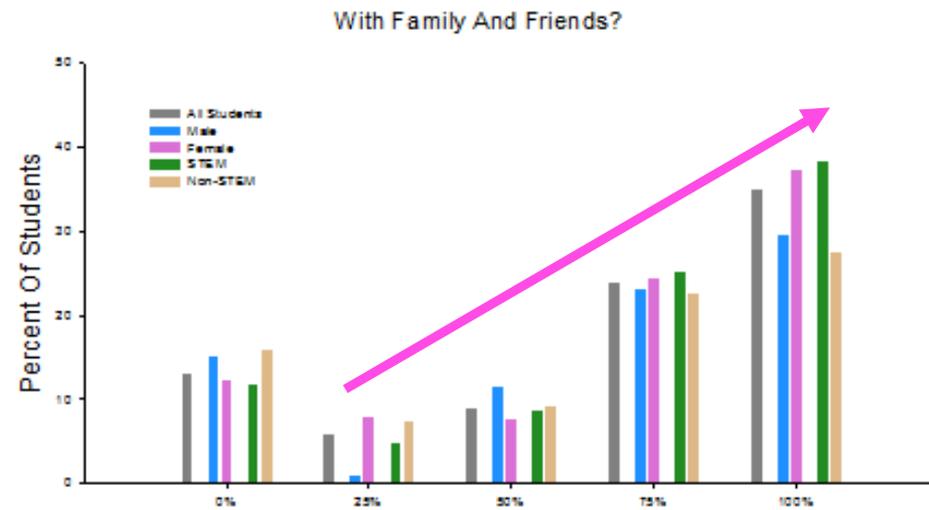
- Overall, students enjoy science classes
- Females enjoy science socially, males enjoy science alone
- Future STEM majors enjoy science more than future non-STEM majors

Before starting college, what percent of the time did you have positive experiences?



- Normal distribution of responses
- Females and STEM majors like science slightly more than Males and non-STEM majors

Before starting college, what percent of the time did you have positive experiences?



- Bi-modal responses when asked about liking science outside of the classroom
- Females like science more socially, males like science more alone

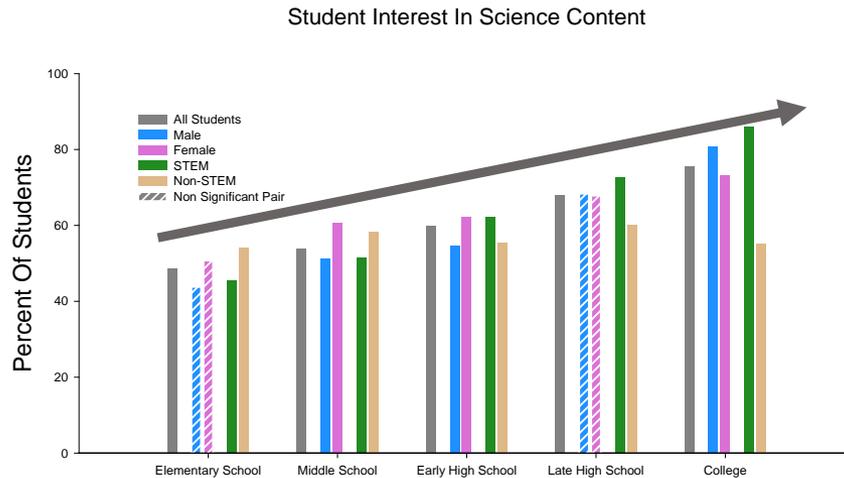
Part One

- Female students enjoy science socially more than males
- Male students enjoy science alone more than females
- Future STEM vs non-STEM students show divergent views early.

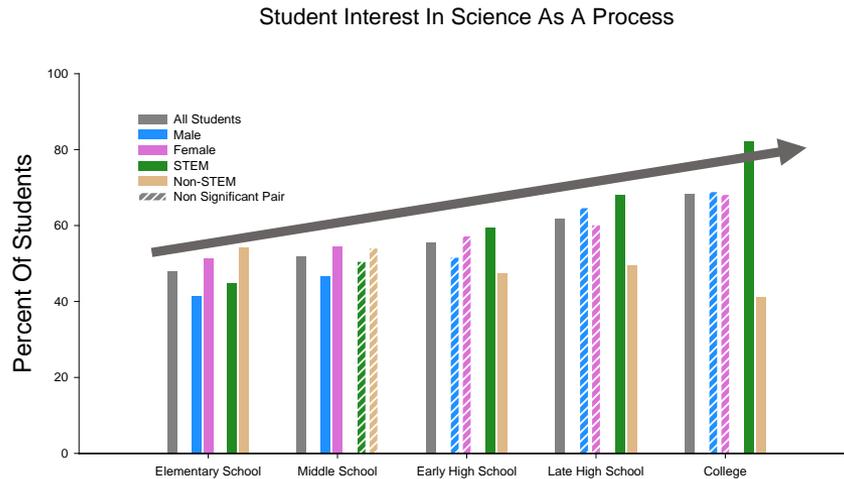
Part Two

During the K12-to-college transition, what are students like?

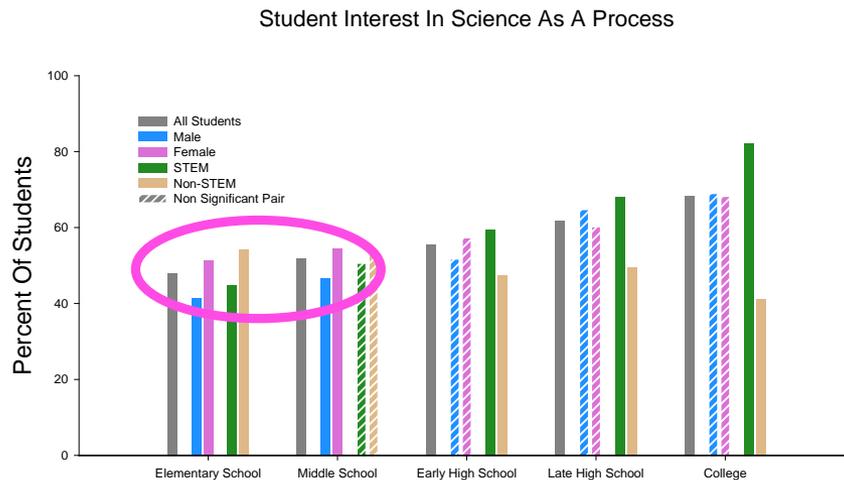
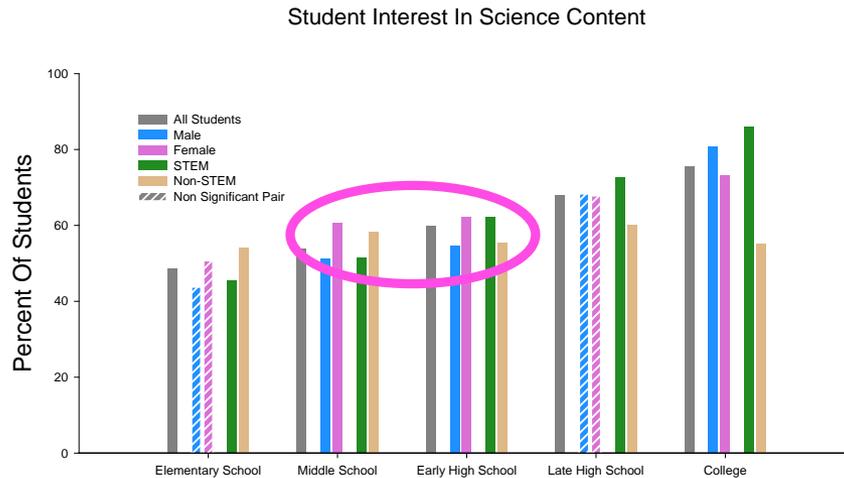
Before starting College, did you enjoy?



- Interest in science increases as students age



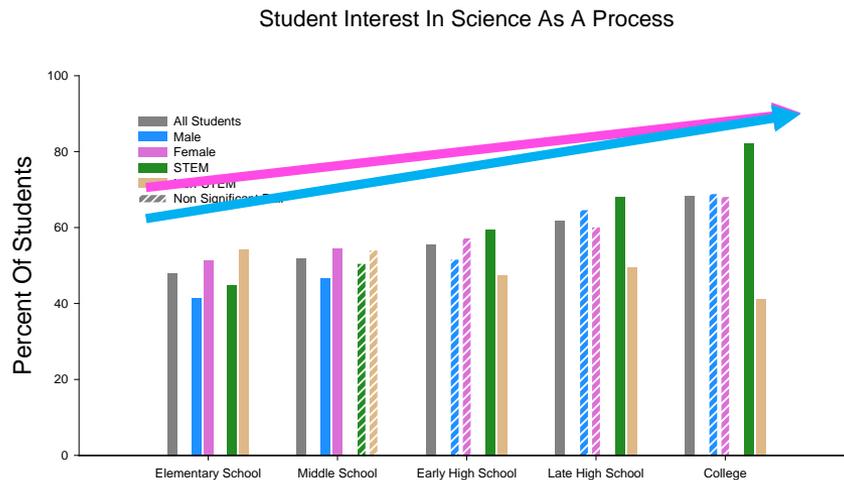
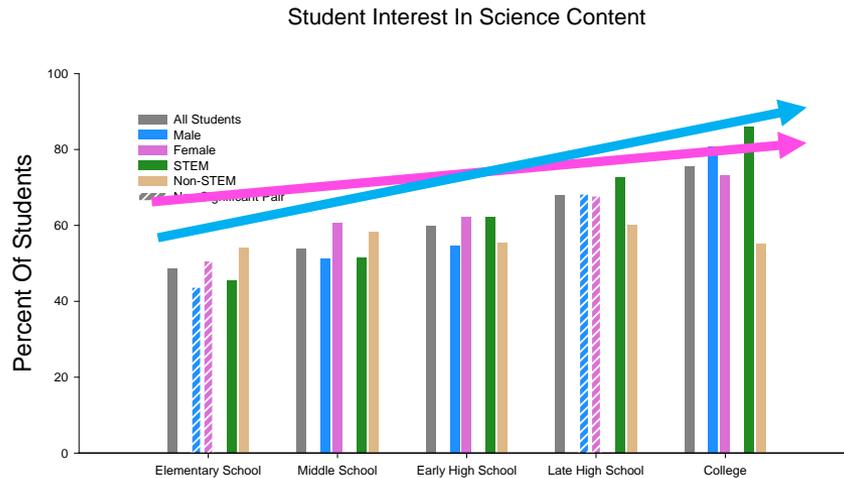
Before starting College, did you enjoy?



- Interest in science increases as students age

- Females are more interested in science at a younger age

Before starting College, did you enjoy?



- Interest in science increases as students age
- Females are more interested in science at a younger age
- Male interest in science increases at a faster rate

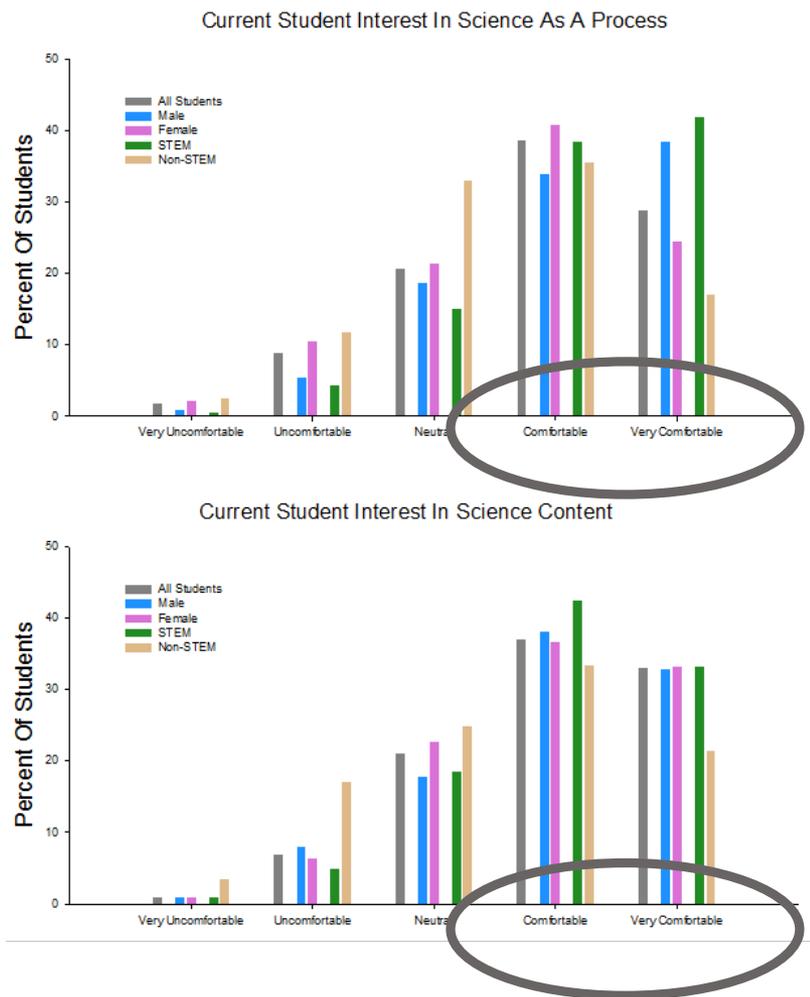
Part Two

- The traditional “gender gap” idea is reversed at young ages and at the same time, future non-STEM students have higher interest in science than future STEM students

Part Three

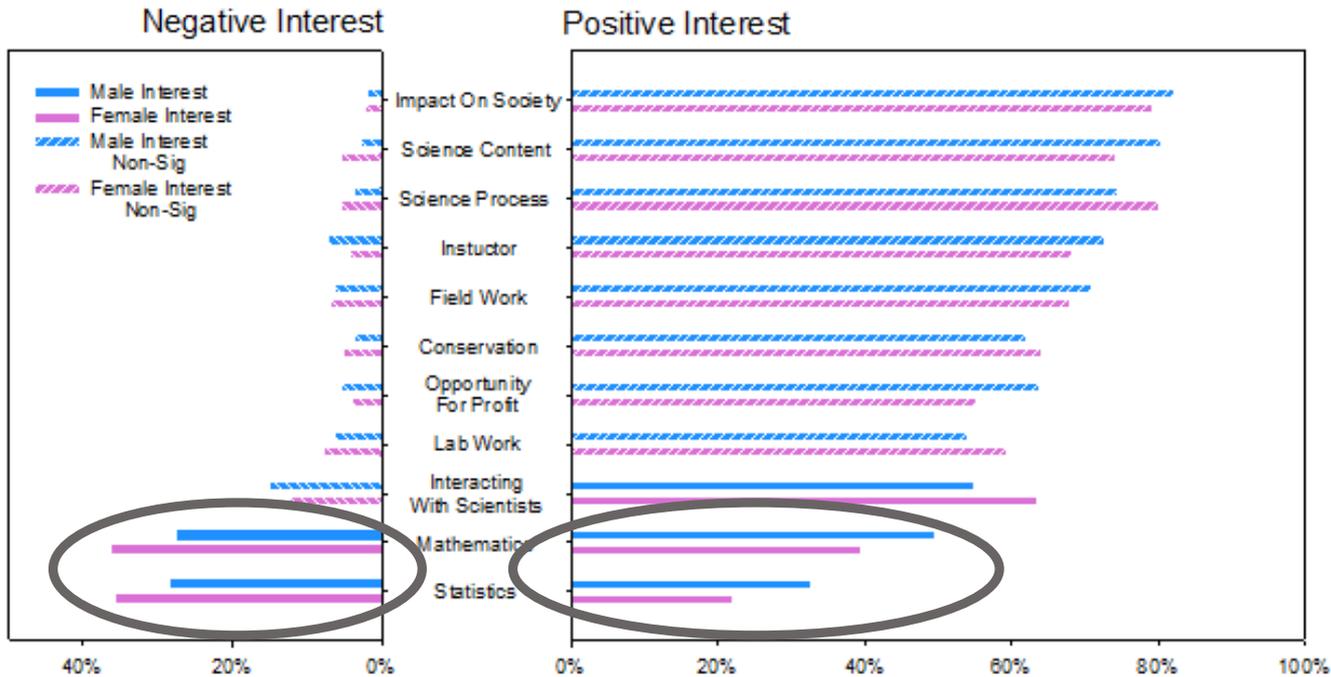
After taking science classes at college,
what are students like?

Current interest in science?



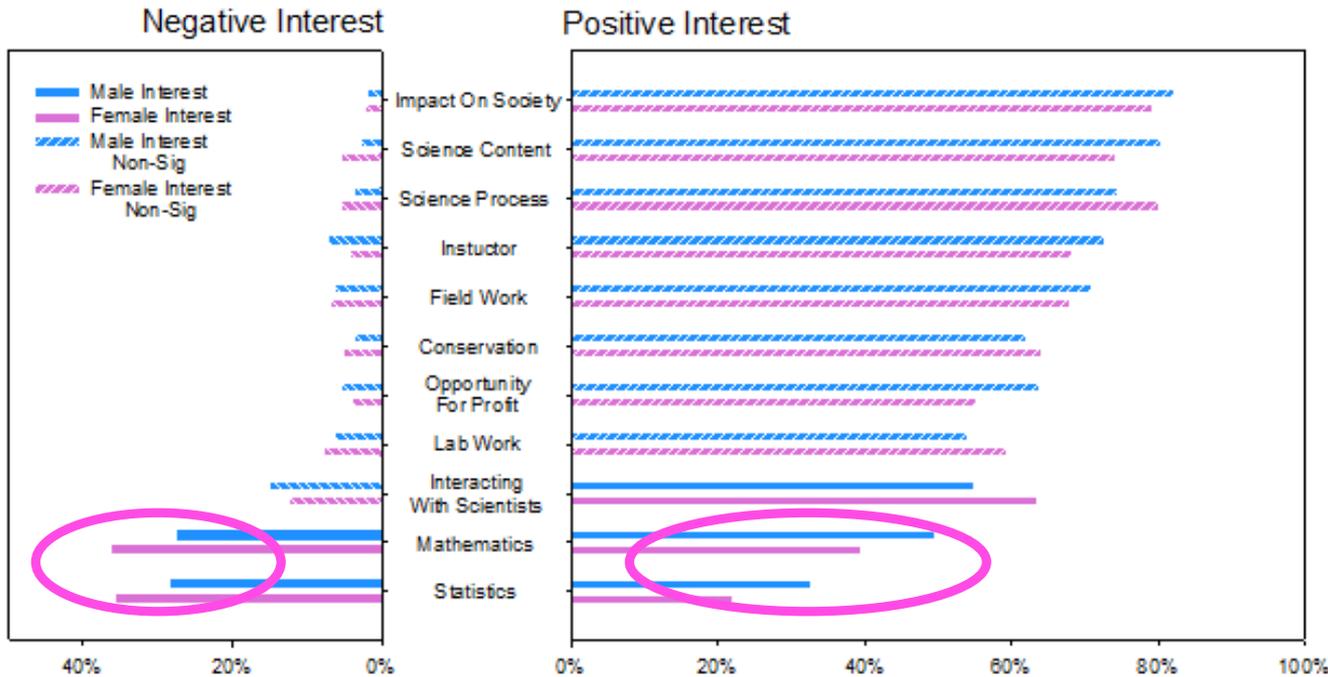
- Students are interested in science!

Current student interest in aspects of science



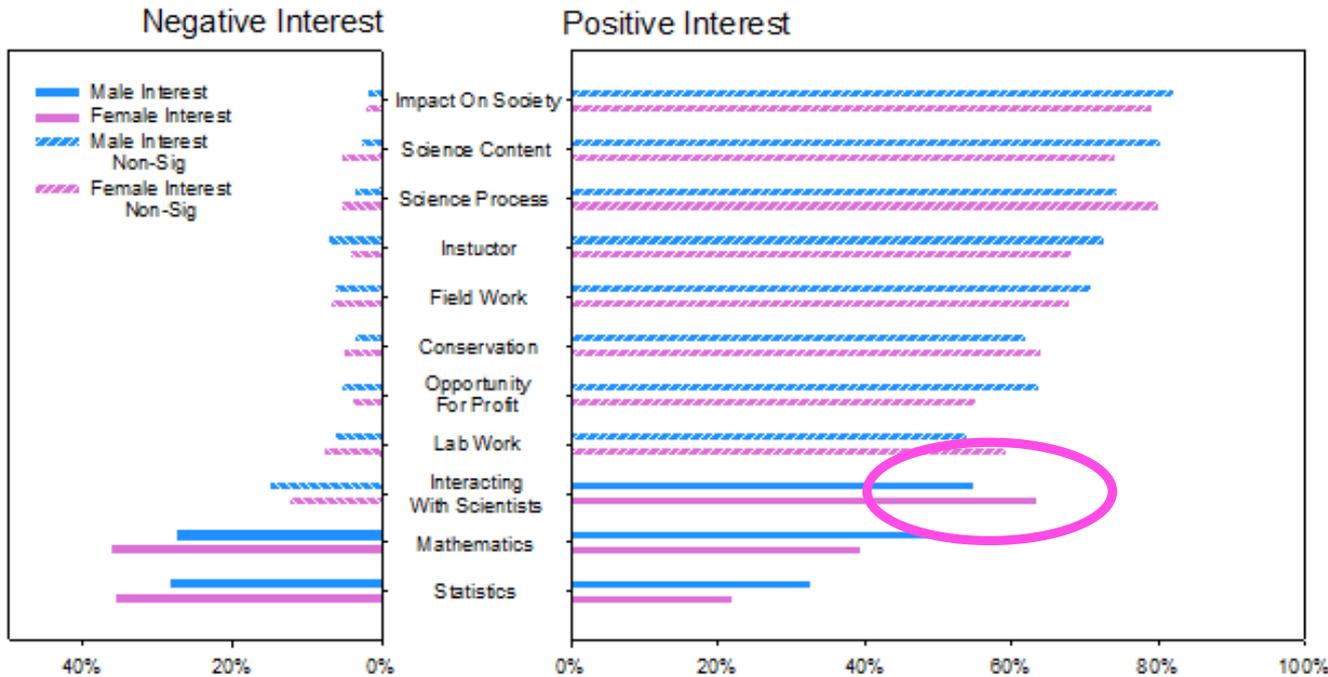
- Overall, large negative interest in quantifiable aspects of science (Math and Stats)

Current student interest in aspects of science



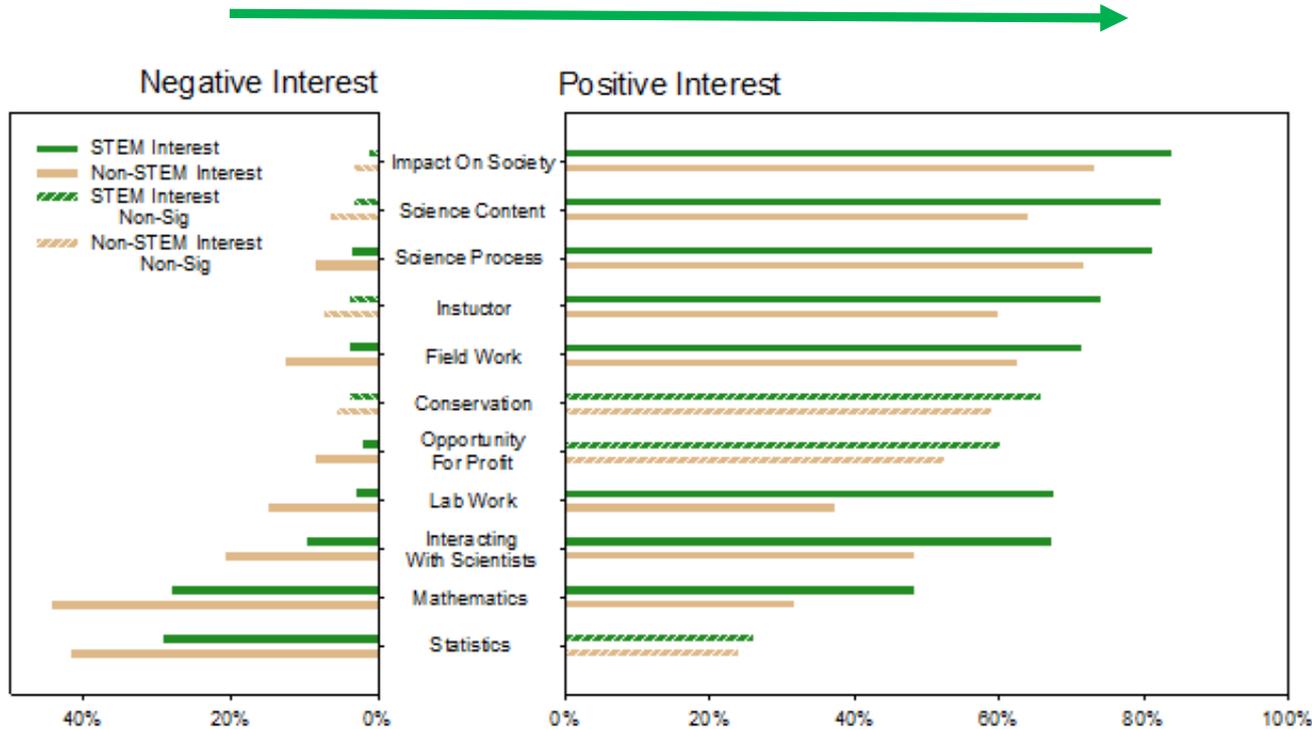
- Overall, large negative interest in quantifiable aspects of science (Math and Stats)
- Females are less interested in Math and Stats

Current student interest in aspects of science



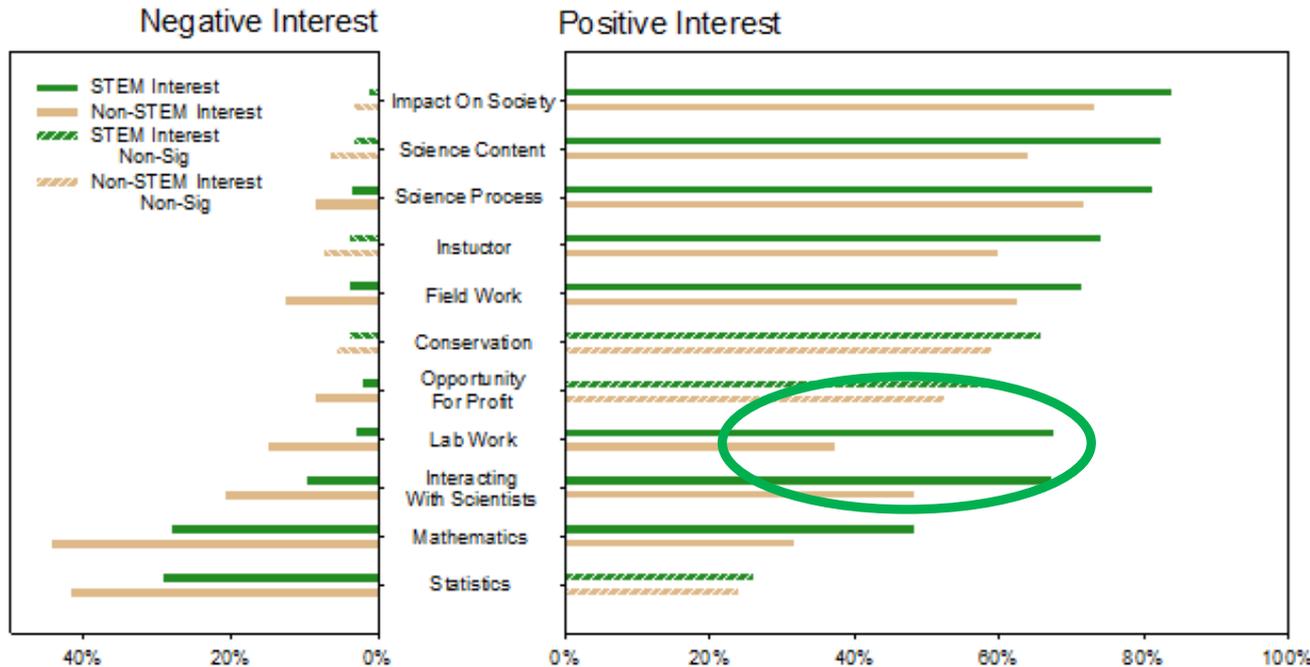
- Overall, large negative interest in quantifiable aspects of science (Math and Stats)
- Females are less interested in Math and Stats
- Females are more interested in interacting with scientists

Current student interest in aspects of science



- Nearly every aspect of science shows a difference between STEM and non-STEM majors

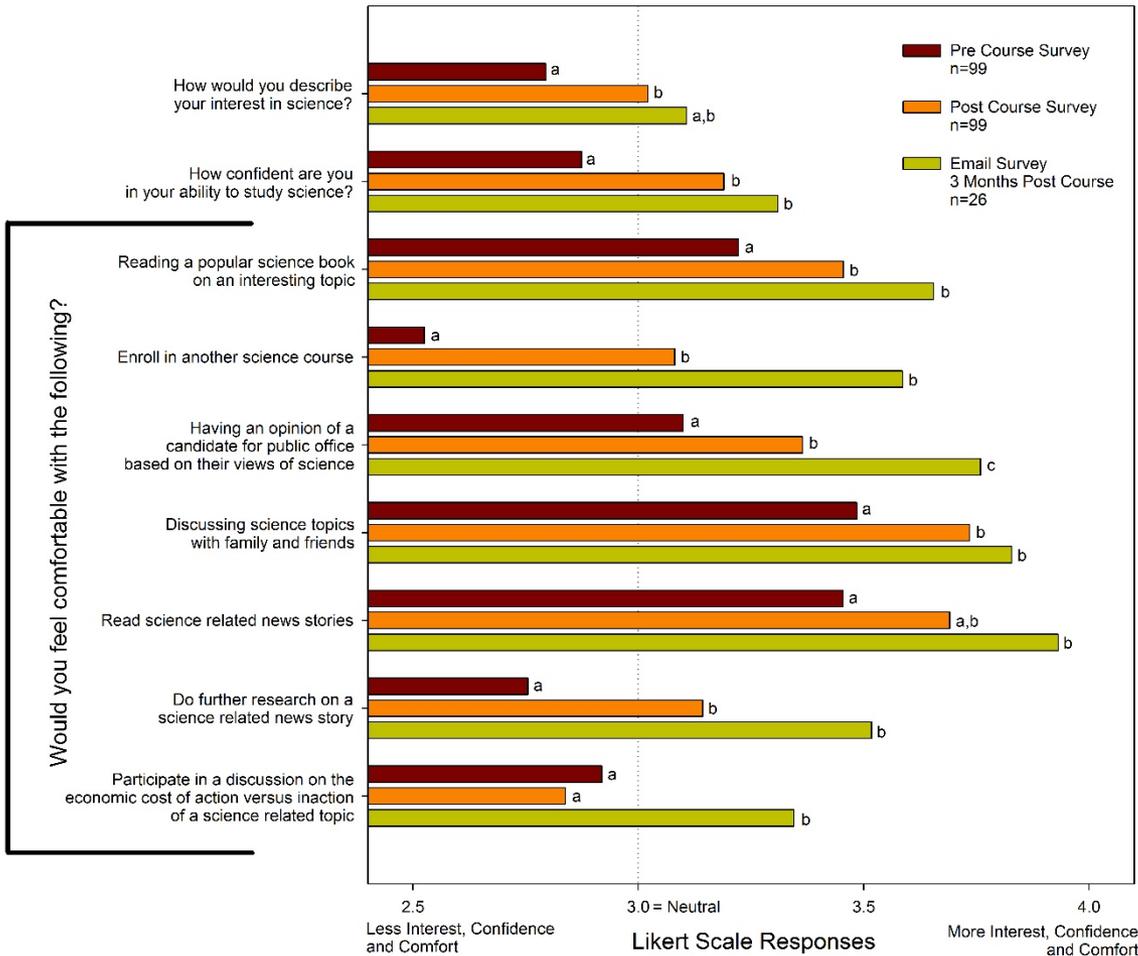
Current student interest in aspects of science



- Nearly every aspect of science shows a difference between STEM and non-STEM majors

- Particularly large difference in lab work

After taking one science course for non-majors:



Note: Results from a different study

- After taking just one science class, non-STEM majors show an increase in their interest in science

Science Courses for Nonscience Majors: How Much Impact Can One Class Make? David Reed and Mark Lyford, Bulletin of the American Meteorological Society 2014 95:8, 1209-1212

Part Three

- The math and science components of science are not enjoyable for students
- But, one science class makes a difference in their opinions of science

Take Home Points

- Science is collaborative in nature and teaching thusly would help keep females interested in science
- Everyone struggles with math and stats
- Our collective efforts in teaching non-STEM students is meaningful!