Project for Inclusive Undergraduate STEM Success

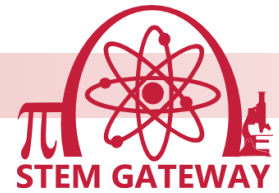## Principle Investigators:

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Professor, Earth & Planetary Sciences

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Associate Vice President
Student Services

Project Director: Tim Schroeder

STEM GATEWAY

INNOVATION IS NOW GLOBAL AND STEM JOBS ARE FOLLOWING

WAGES FOR STEM WORKERS ARE HIGH AT ALL LEVELS OF EDUCATIONAL ATTAINMENT
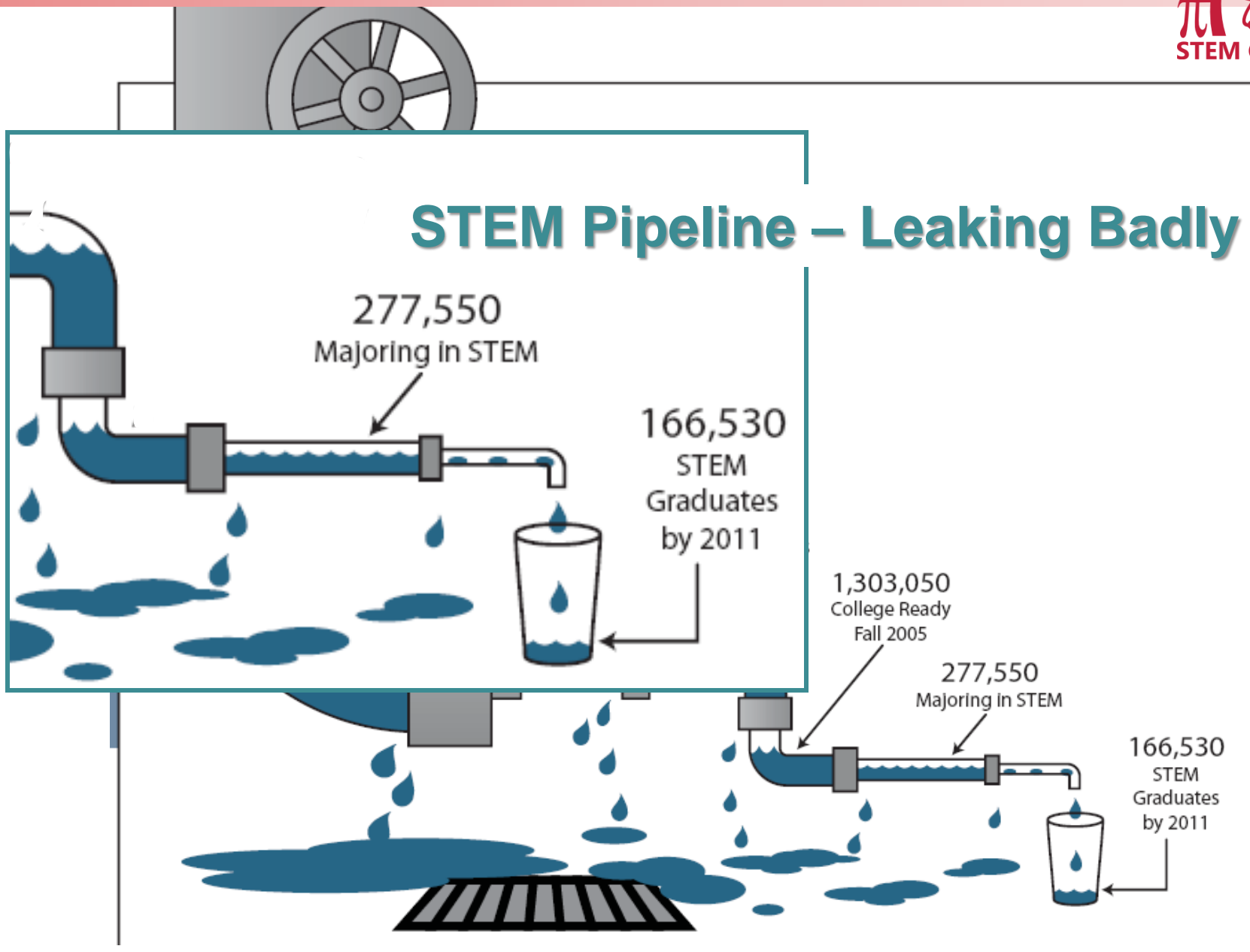
THERE IS ADDED PRESSURE TO FIND MORE STEM WORKERS DUE TO BABY BOOMER RETIREMENTS

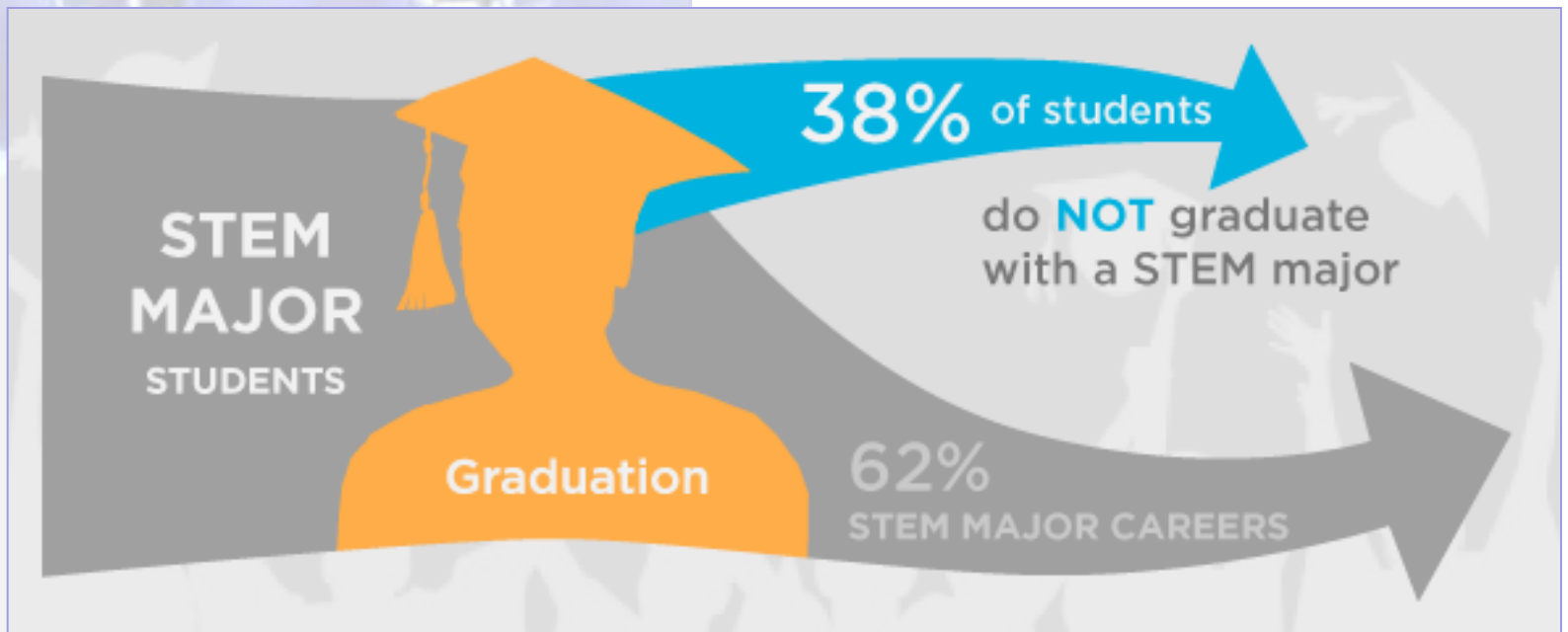STEM IS PROJECTED TO GROW AT 17 PERCENT THROUGH 2018.

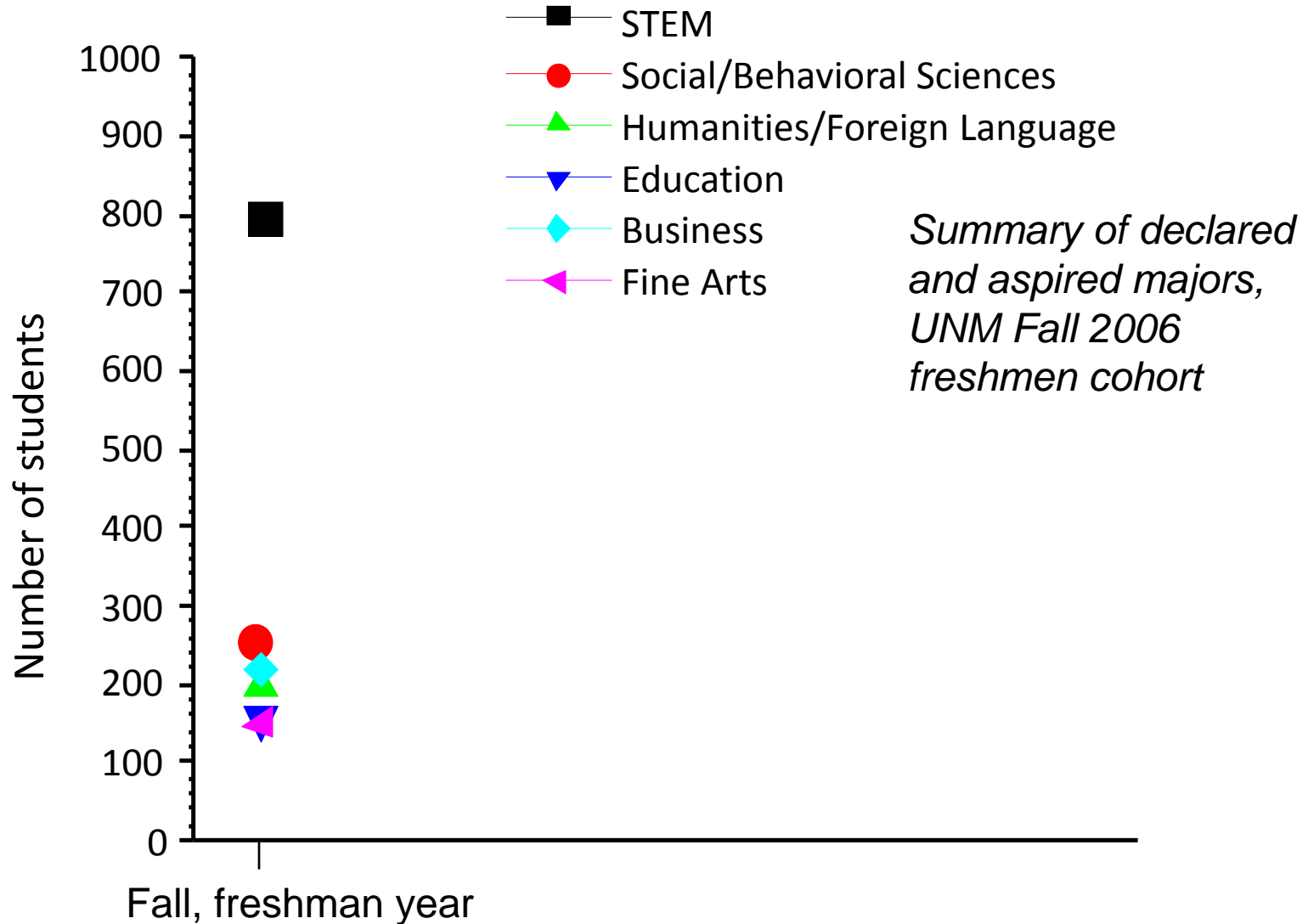THE NATION NEEDS MORE WOMEN AND MINORITIES IN STEM JOBS FOR MANY REASONS

WE ARE CURRENTLY RELYING ON FOREIGN-BORN WORKERS TO PLUG THE GAPS IN OUR STEM WORKFORCE

STEM GATEWAY

STEM Pipeline – Leaking Badly

277,550
Majoring in STEM

166,530
STEM
Graduates
by 2011

1,303,050
College Ready
Fall 2005

277,550
Majoring in STEM

166,530
STEM
Graduates
by 2011

(Data: NCES; Graphic: Bill & Melinda Gates Foundation

National Science and Math Initiative

STEM fields top the list of aspired-to majors among UNM freshmen

Legend:
- ■ STEM
- ● Social/Behavioral Sciences
- ▲ Humanities/Foreign Language
- ▼ Education
- ◆ Business
- ◀ Fine Arts

Summary of declared and aspired majors, UNM Fall 2006 freshmen cohort

Y-axis: Number of students
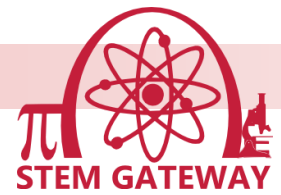
X-axis: Fall, freshman year

STEM disciplines suffer the greatest undergraduate student attrition at UNM
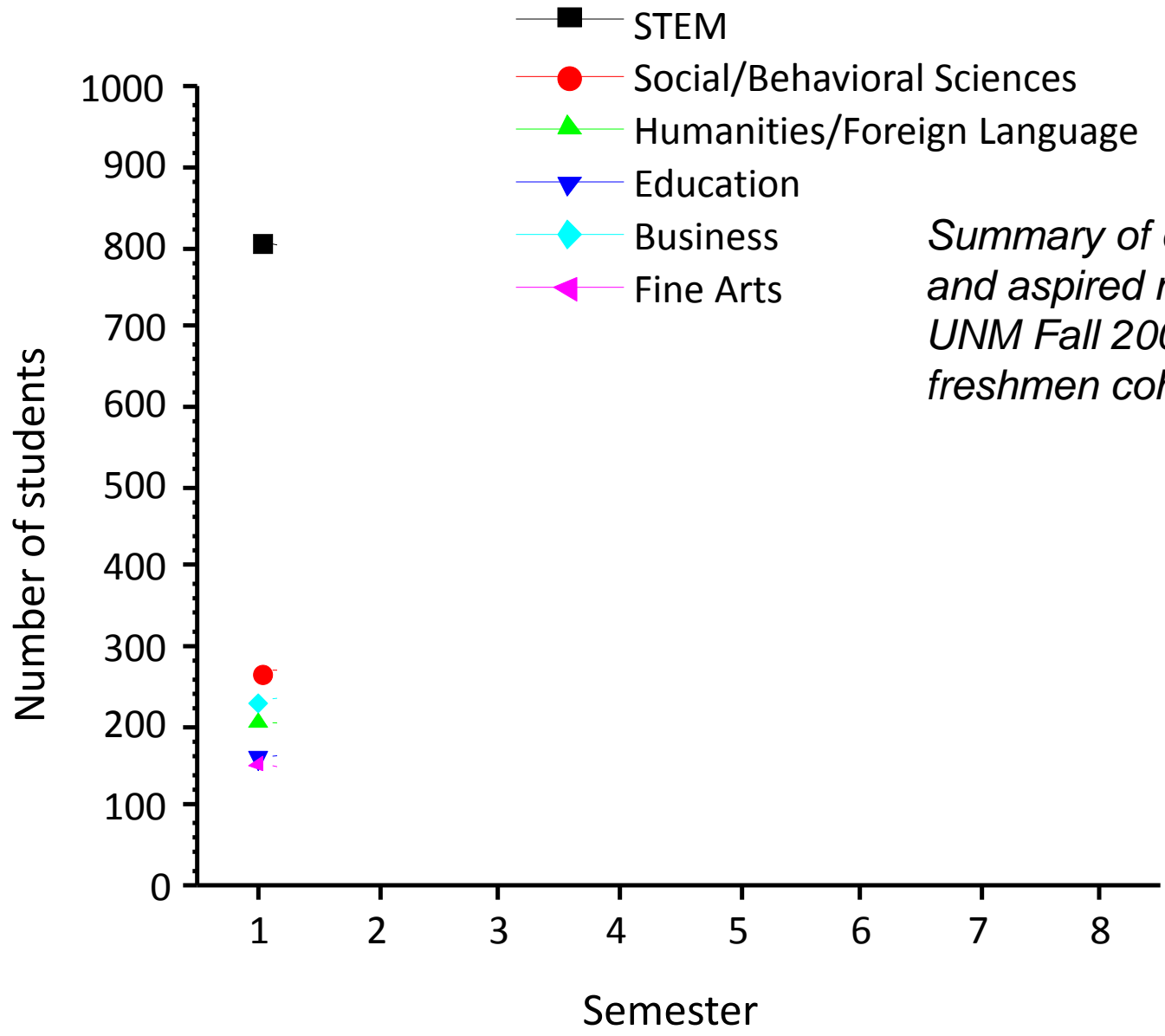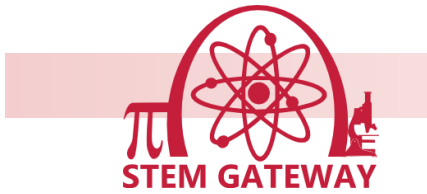
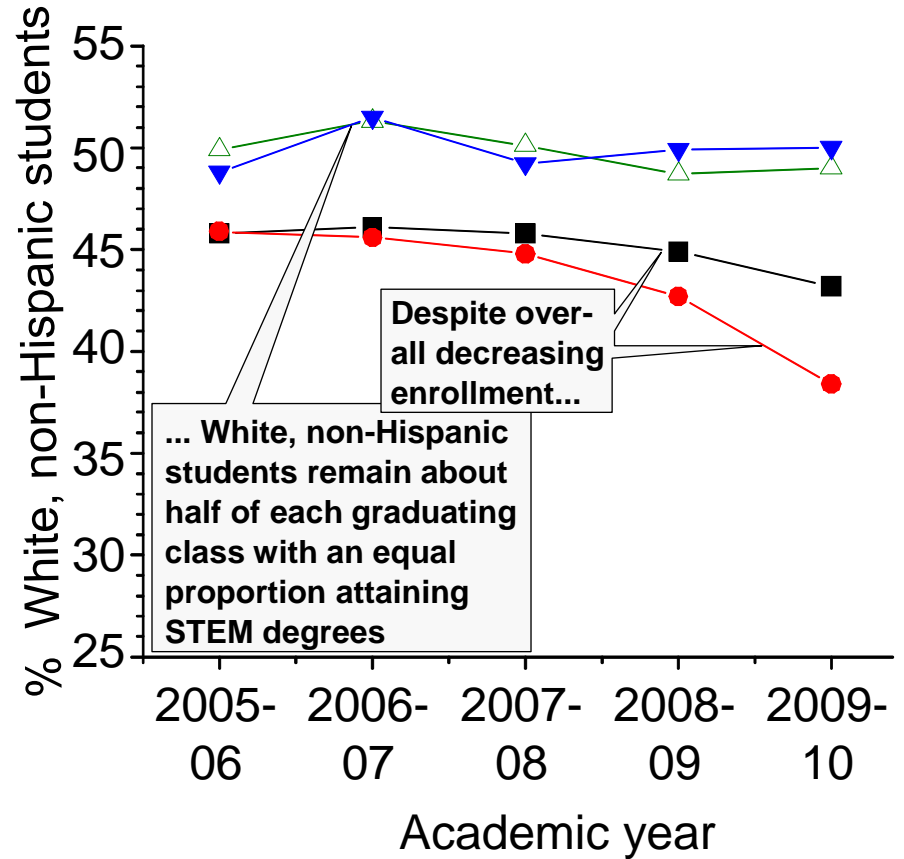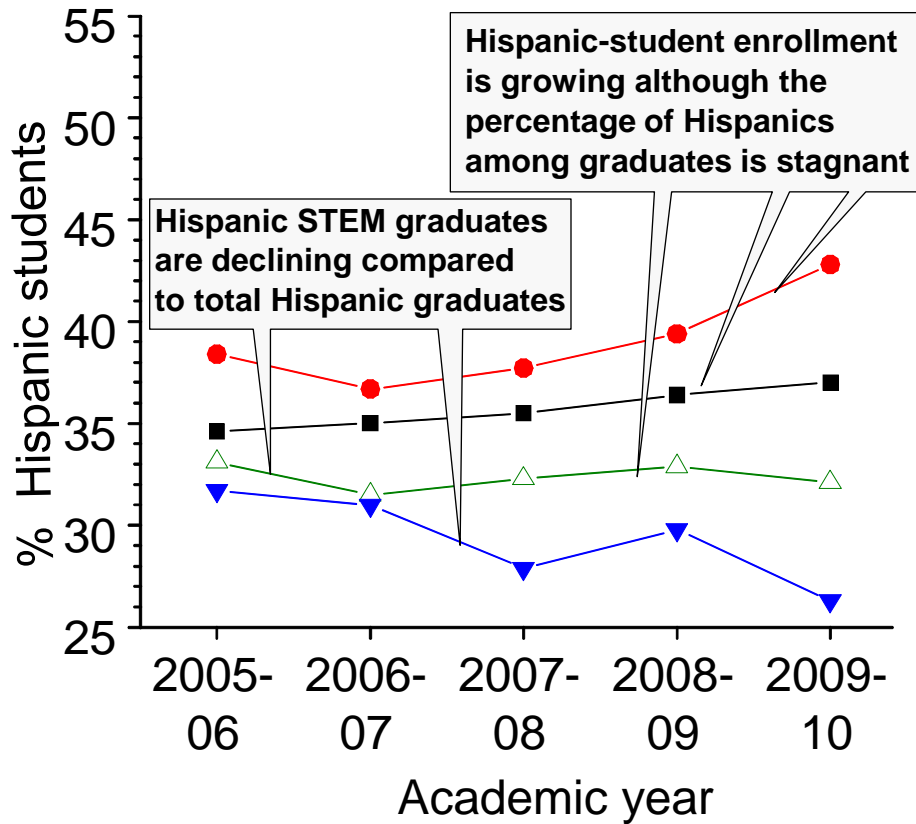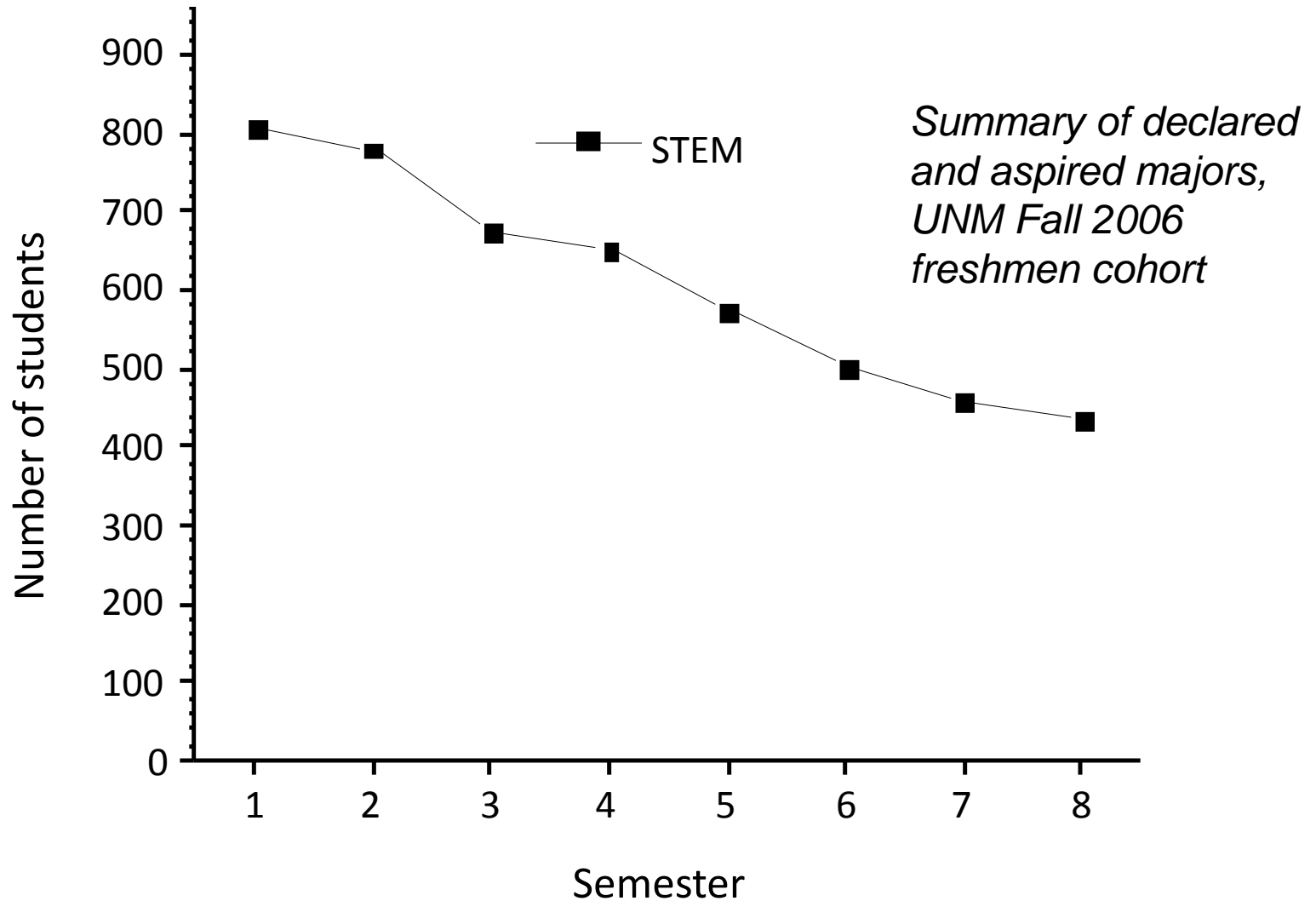*Summary of declared and aspired majors, UNM Fall 2006 freshmen cohort*

Legend: Total undergraduate enrollment; Entering first-time freshmen; Graduates; STEM graduates

Hispanic-student enrollment is growing although the percentage of Hispanics among graduates is stagnant

Hispanic STEM graduates are declining compared to total Hispanic graduates

Despite over-all decreasing enrollment...

... White, non-Hispanic students remain about half of each graduating class with an equal proportion attaining STEM degrees

% Hispanic students

% White, non-Hispanic students

Academic year

Recalling that the tide turns after the first year …

Summary of declared and aspired majors, UNM Fall 2006 freshmen cohort

… the grant focuses on the entry points to STEM majors: The gateway courses.

Earth & Planetary Sciences

Statistics

Math

Physics & Astronomy

Chemistry

Engineering

Biology

Computer Science

Environmental Science

Pre-Calculus Math

Physics

Calculus

Chemistry

Disciplinary foundations
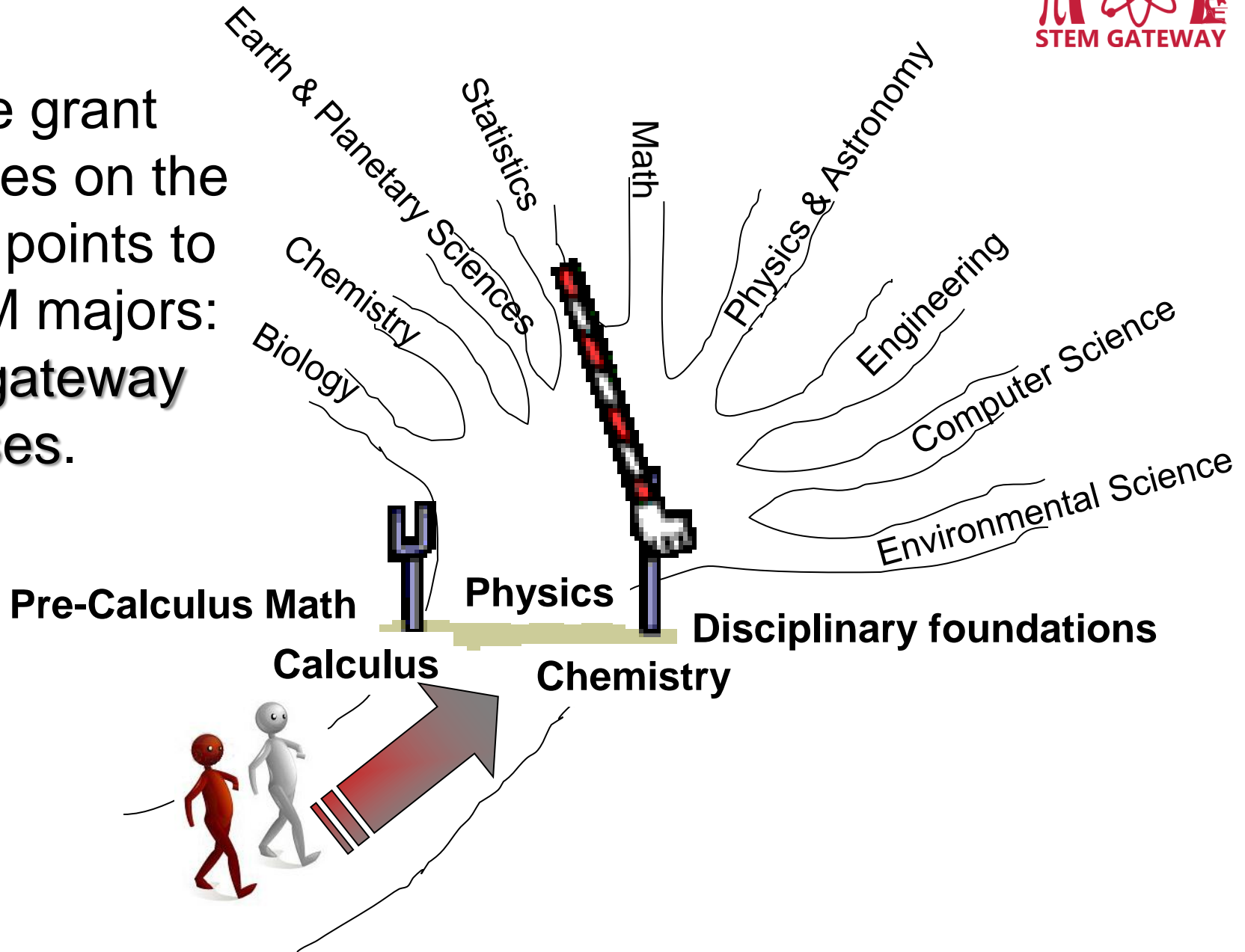
STEM GATEWAY

Transforming course experiences to be gateways, rather than gatekeepers
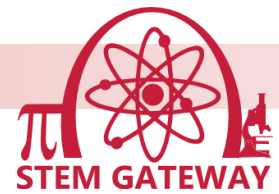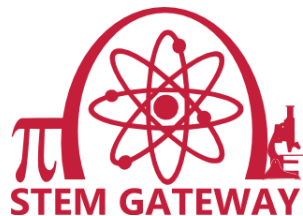
STEM Gateway Components

GATEWAY SCIENCE AND MATH COURSE REFORM	BEGINNING-STUDENT SOCIALIZATION WITH STEM EXPERIENCES: *STEM STUDENT INTEREST GROUPS*
PEER-ASSISTED COLLABORATIVE LEARNING: *PEER LEARNING FACILITATORS*	DATA-DRIVEN DECISION MAKING

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