

FITC: Redesigning Courses & Programs for Underrepresented Student Success

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College of Science and Technology

Founded in 2012 via division of the College of Arts and Sciences

- College of Science and Technology (CST)
- College of Social Sciences, Arts and Humanities (CSSAH)

Five academic programs

- Biology, Chemistry, Computer and Information Sciences, Mathematics, and Physics

Offers BS, MS and PhD degrees

~1,100 students

78 full-time faculty

Department of Computer and Information Sciences (CIS)

- 3 BS Programs (227 students)
 - Computer Science (ABET accredited)
 - Information Technology
 - Information Systems
- 2 MS Programs (15 students)
 - Computer Science
 - Software Engineering
- 10 full-time faculty

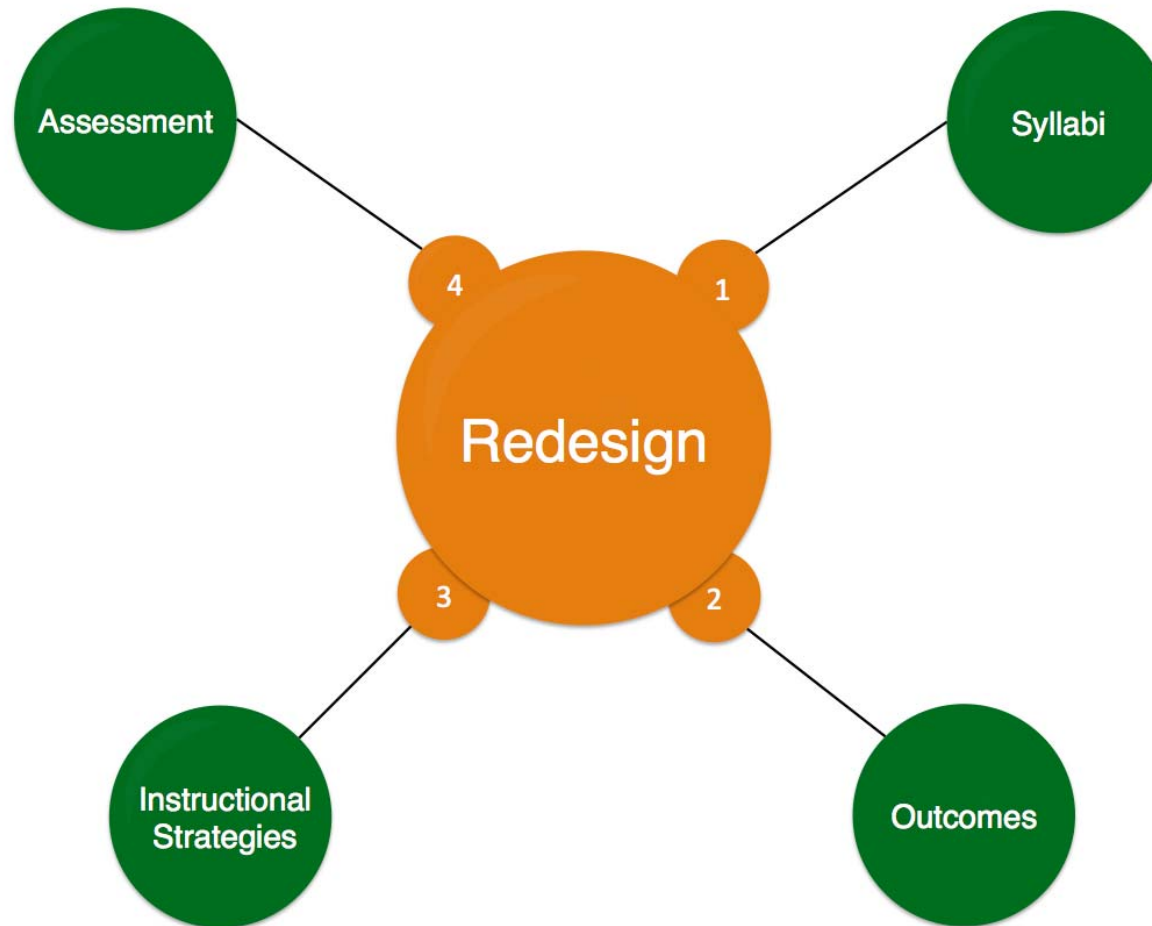
Course Redesign

- College-Wide Effort
- Issues
 - High failure-rate courses
 - Retention/ graduation rates
 - Enrollment
 - Critical thinking skills/ student learning

Course Redesign

- CIS High failure-rate courses (>35%)
 - Fundamentals of Programming (COP 3014)
 - Computer Ethics and Professional Responsibility (CIS 4250)
 - “C” Programming (COP 2221)
 - Web Programming and Design (CGS 3066)

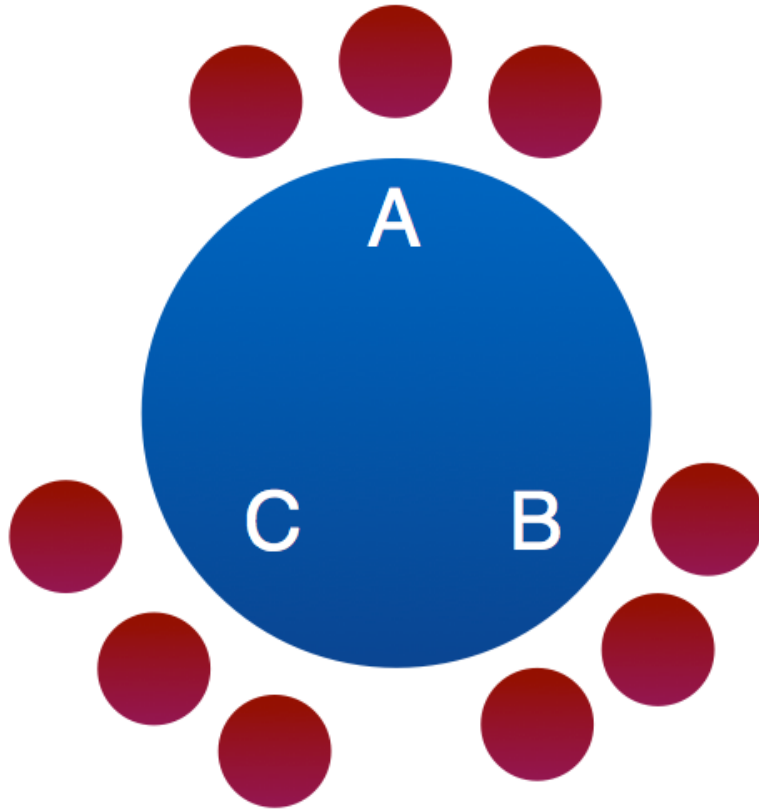
Course Redesign Model



SCALE-UP

- **S**tudent **C**entered **A**ctive **L**earning
Environment with **U**pside-down
Pedagogies
- Developed by Bob Beichner at NCSU
- Adopted by over 100 universities across
the nation

The SCALE-UP Classroom



- Round tables
- Teams of students
- Whiteboards everywhere
- No anonymity

SCALE-UP

- Benefits
 - Individual accountability
 - Positive interdependence
 - Face-to-face interactions
 - Appropriate use of interpersonal skills
 - Regular self-assessment of group functioning
 - Makes good students better
 - Develops critical thinking/ problem-solving skills

FAMU's SCALE-UP Facilities



FAMU's SCALE-UP Facilities



Learning Assistant (LA) Program

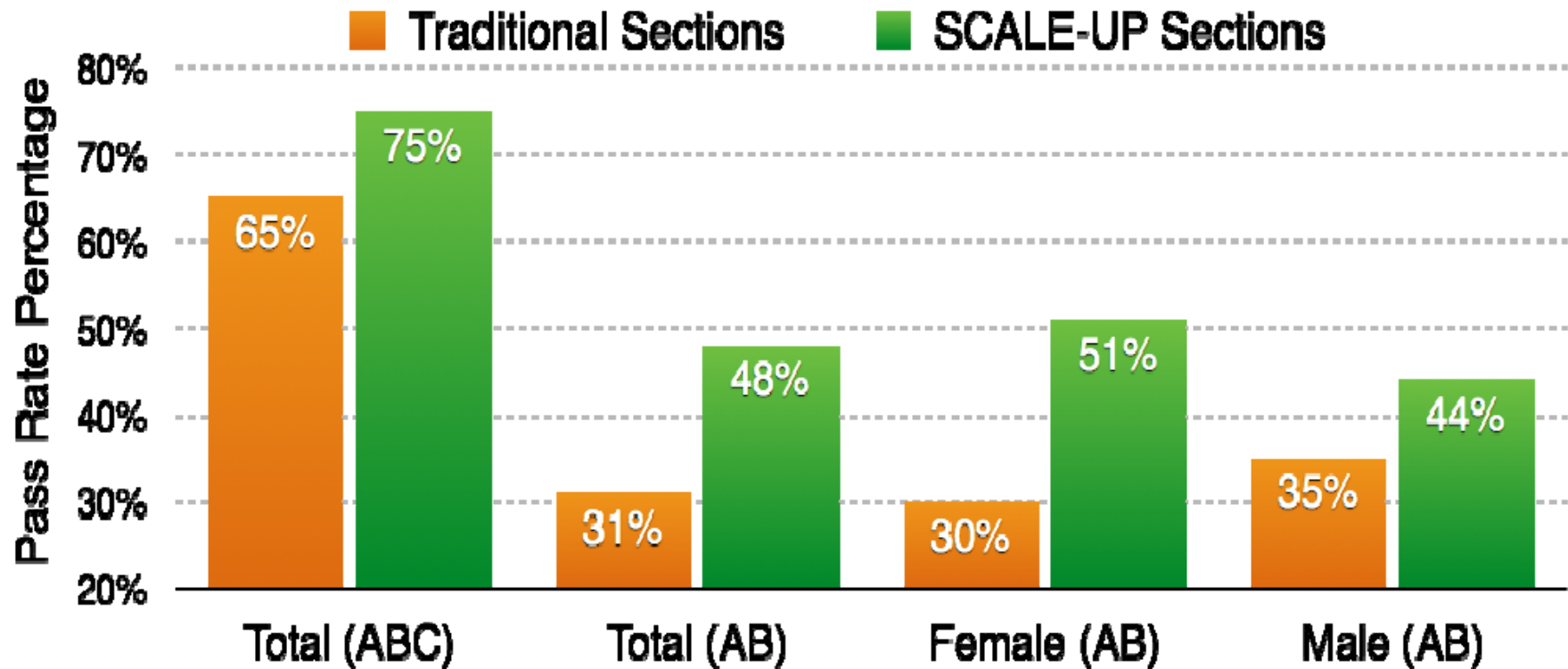
- Advanced undergraduate STEM students
- Assist in SCALE-UP courses and facilitate structured weekly problem-solving sessions
- Enroll in a course on pedagogy
- Participate in professional development activities



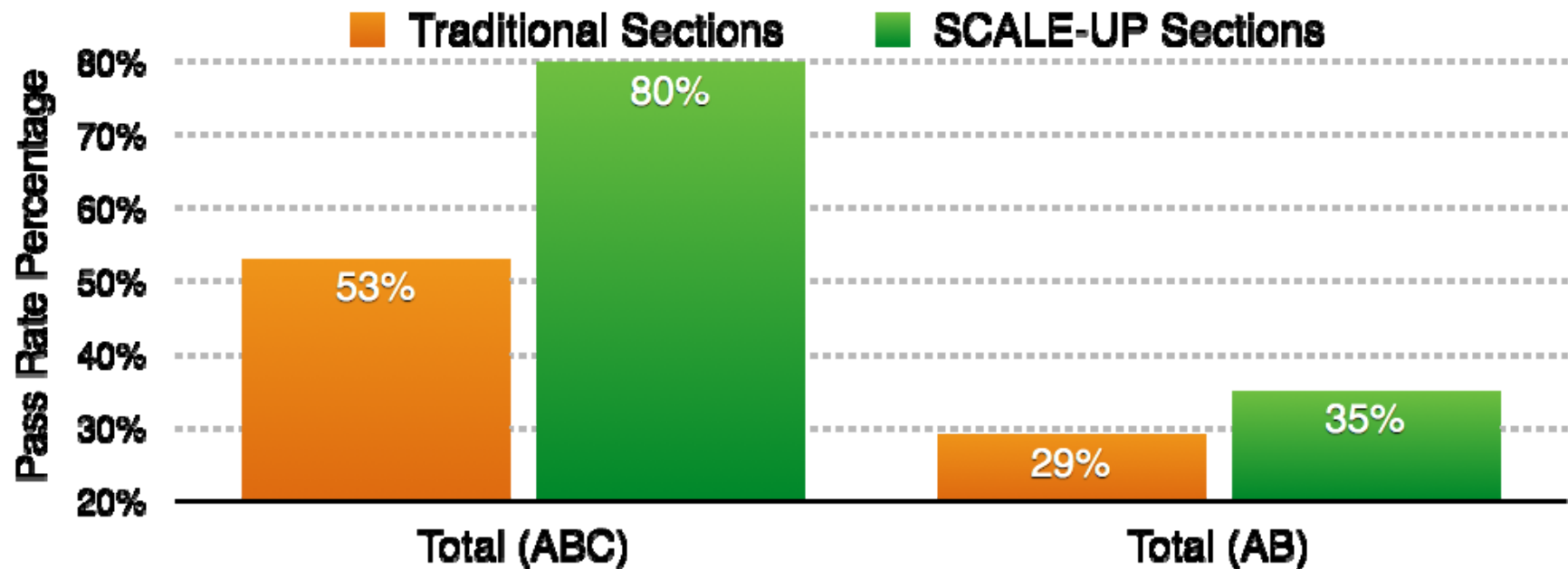
SCALE-UP Courses

- General Biology I & II
- General Chemistry I
- **Fundamentals of Programming**
- Calculus I
- General Physics I & II

Preliminary Data (Biology, Chemistry, Physics)



Preliminary Data (Fundamentals of Programming)



Thank You!