Texas Interdisciplinary Plan

University of Texas at Austin
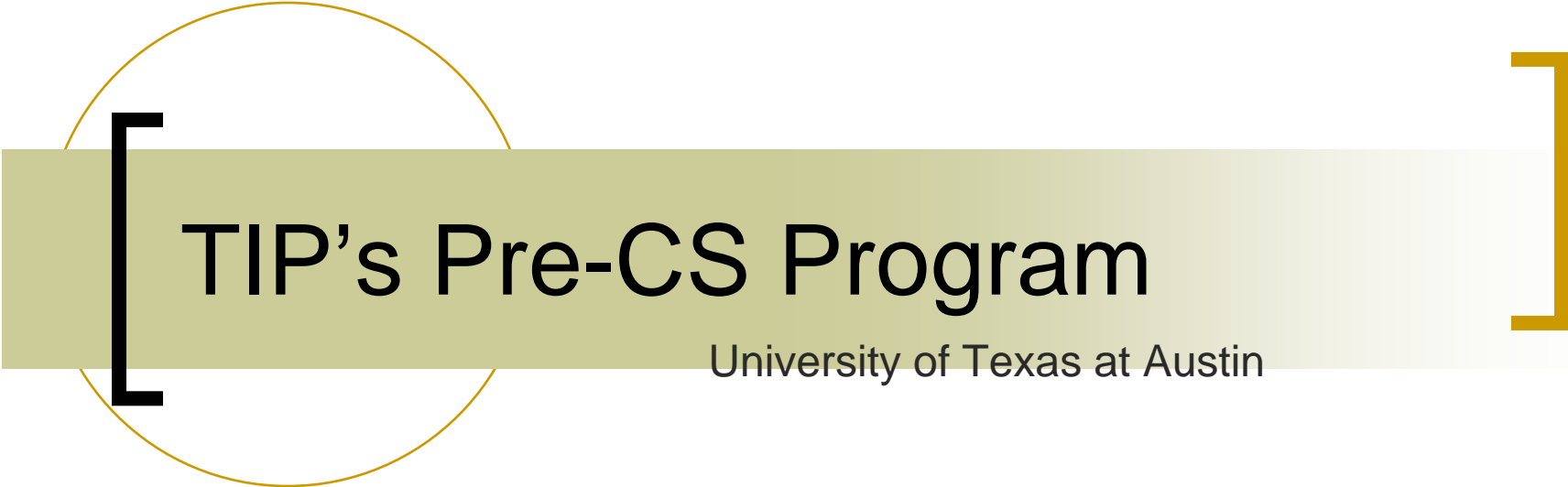
- Academic First-Year Program

- Colleges of Natural Sciences and Liberal Arts

- "Small-College Environment"

- Cohort Model

- Rigorous classes, dedicated advising, peer mentoring

Factors that shaped TIP

University of Texas at Austin

- Top 10% Policy

- Poor retention in College of Natural Sciences

- Limited background in pre-CS curriculum

- Minority and female participation rates in pre-CS

TIP's Pre-CS Program

University of Texas at Austin

- 25 – 35 students each year (since 2000)

- Hands-on introduction to logic & programming

- Mentoring & tutoring by CS majors

- Progressive scholarship awards with INTEL support

What our pre-CS students look like

University of Texas at Austin

- Females fill 4-6 seats in each section of 25   (vs. 3-5)

- 48% are minority students   (vs. 18%)

- 20% are first-generation

- 38% are low SES

- Average SAT is 1100 (compared to 1250)

Data we collect

University of Texas at Austin

For TIP & Control Groups:

- Major code

- Courses taken toward the major

- Course grades & GPA

- Graduation in the college and the major

- Anecdotal feedback (surveys, focus groups, etc.)

- First-hand experience (instructors and mentors)

What our data show: short-term

University of Texas at Austin

- Higher GPA during the first fall semester

- Lower rates of academic probation

- More likely to enroll in CS 307 and PHL 313K

- Increased confidence in pursuing the major

GPA Comparison: Freshmen

University of Texas at Austin

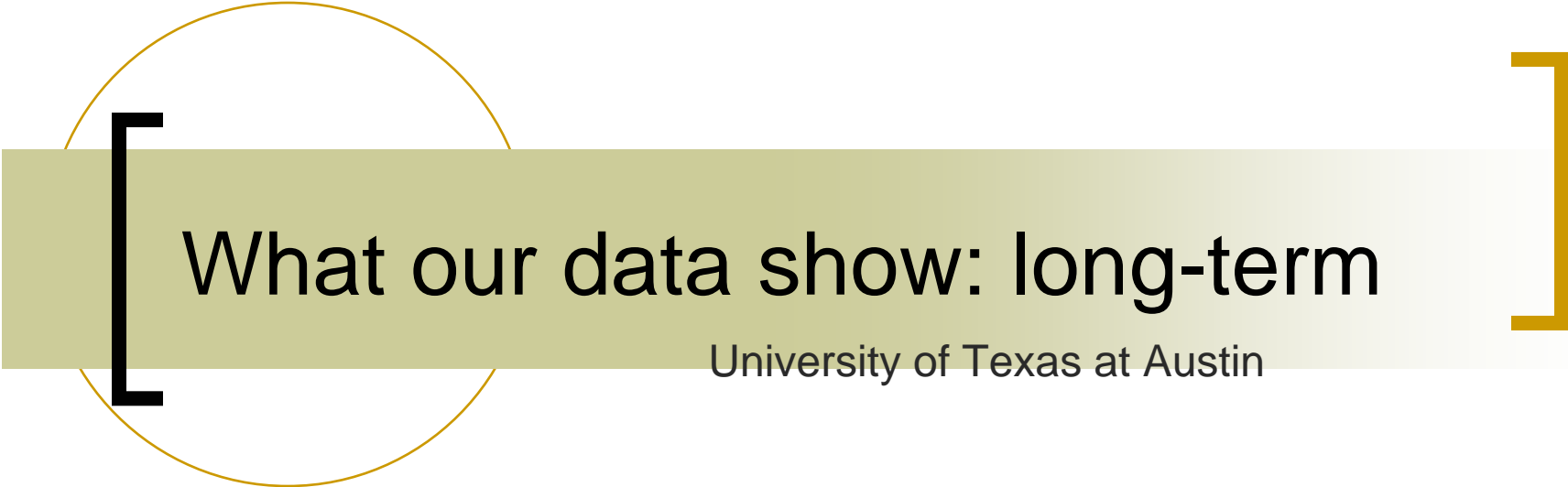| Cohort	TIP	Control
2000	3.02	2.46
2001	2.91	2.54
2002	2.78	2.52
2003	3.21	3.01
2004	2.85	2.43
Average	2.94	2.39

General CS population GPA: 2.88

Anecdotal Evidence

University of Texas at Austin

Survey results	Increased	Stayed Same	Decreased
My confidence in my ability to do CS has	56%	40%	4%
My belief that I think like a CS person has	53%	26%	14%
My interest in majoring in CS has	26%	65%	8%

What our data show: long-term
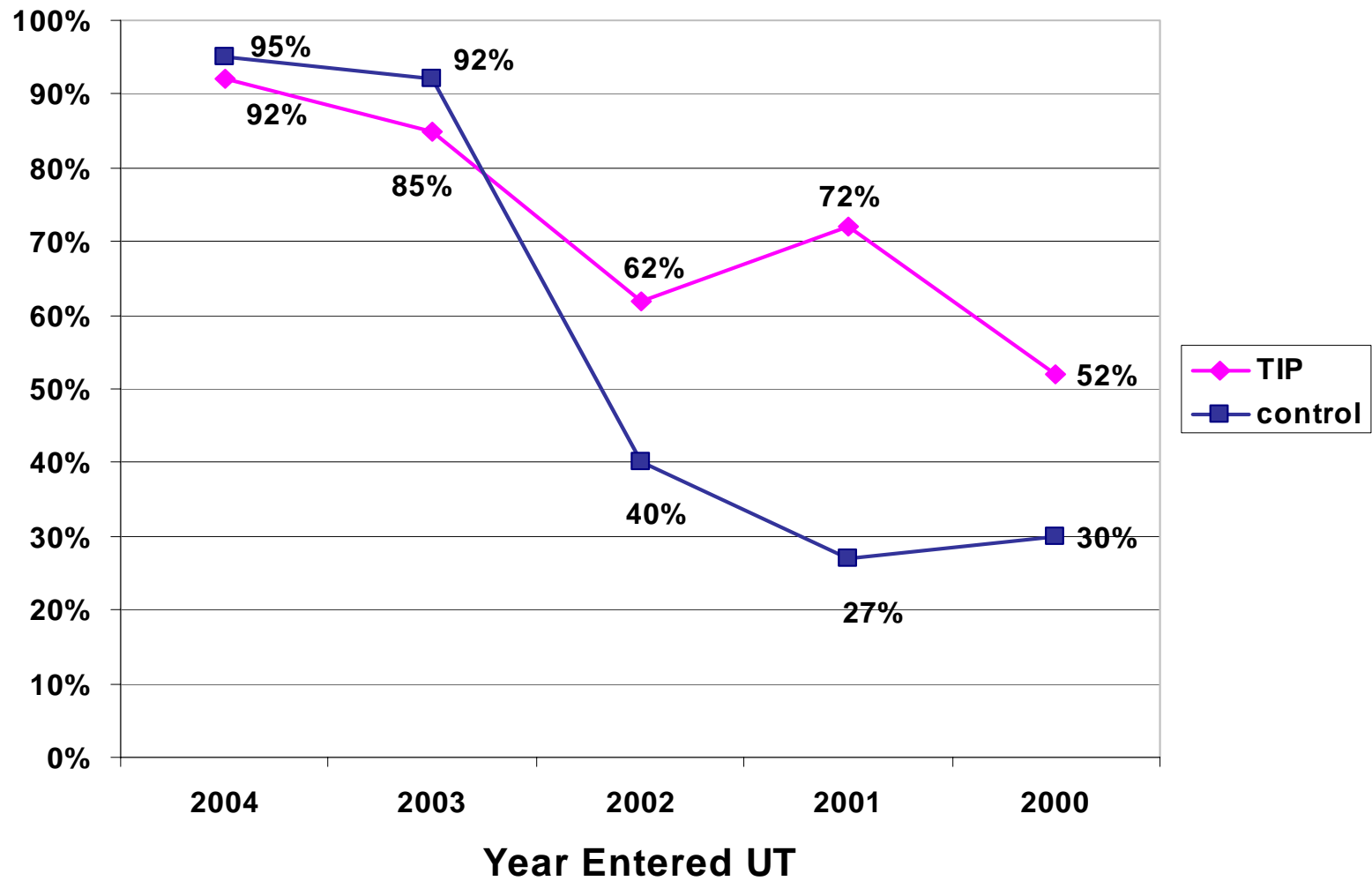
University of Texas at Austin

Good News:

- Students more likely to stay in the College
- Students more likely to stay in the major
- Minorities retained at higher rate

Bad News:

- Overall numbers are small
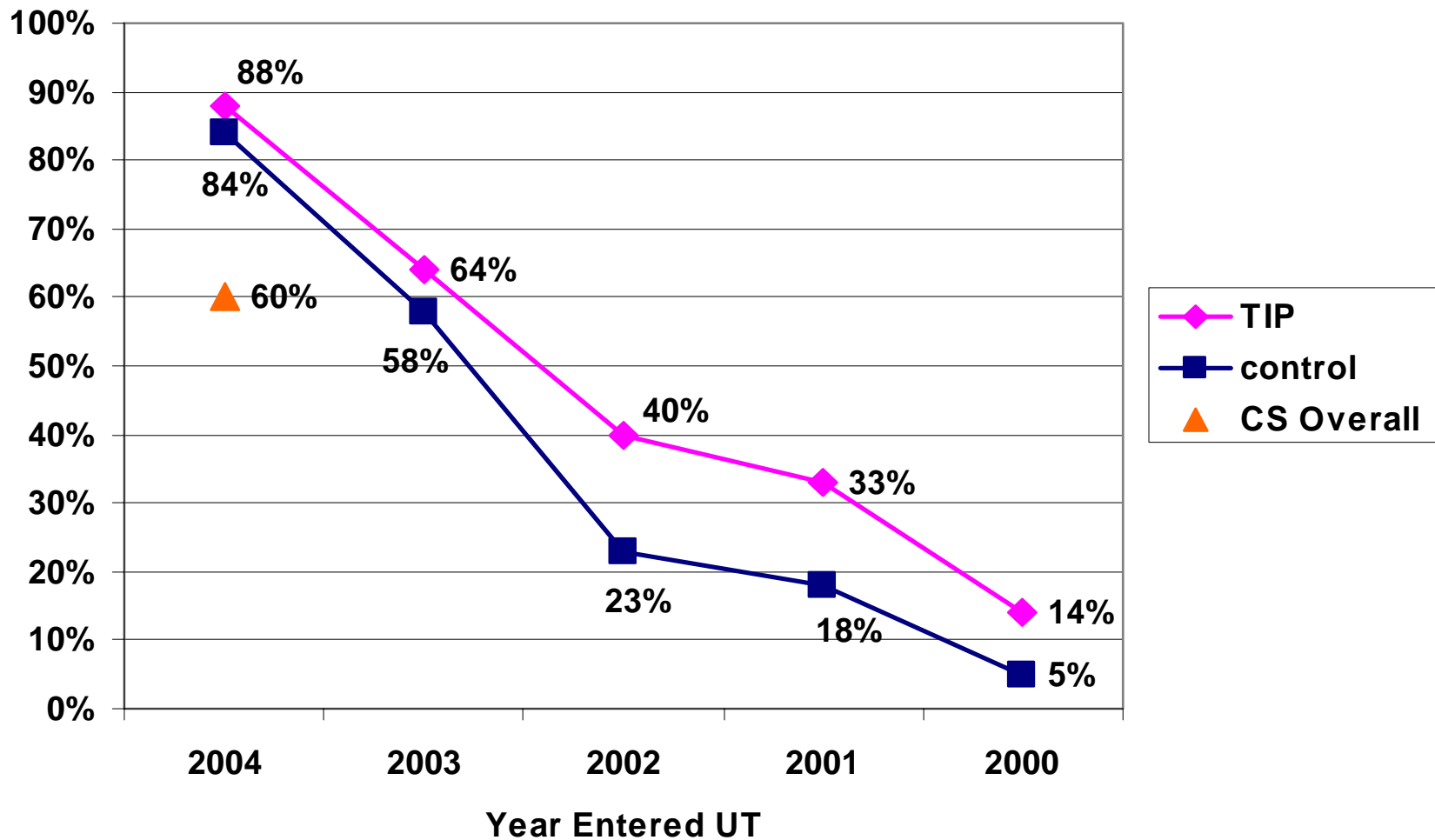- Retention of females still a problem

Retention in the College

Retention in the Major

Trends for Underrepresented Groups

Snapshot of General CS Population (2003-2004)

	Freshmen	Seniors
Minorities	23%	7%
Females	14%	15%

Retention of Minority Students in Major
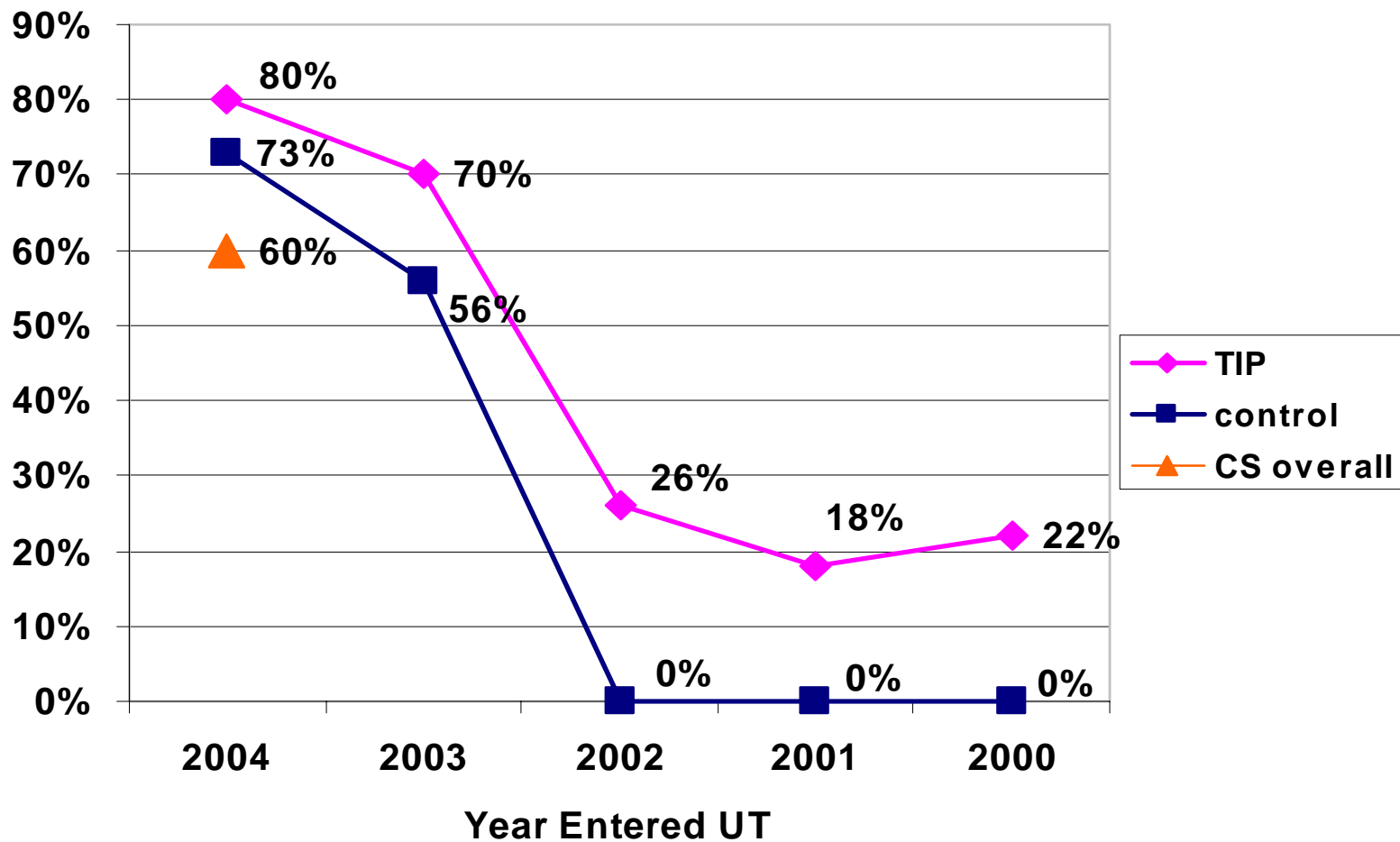
Retention of Female Students in the Major
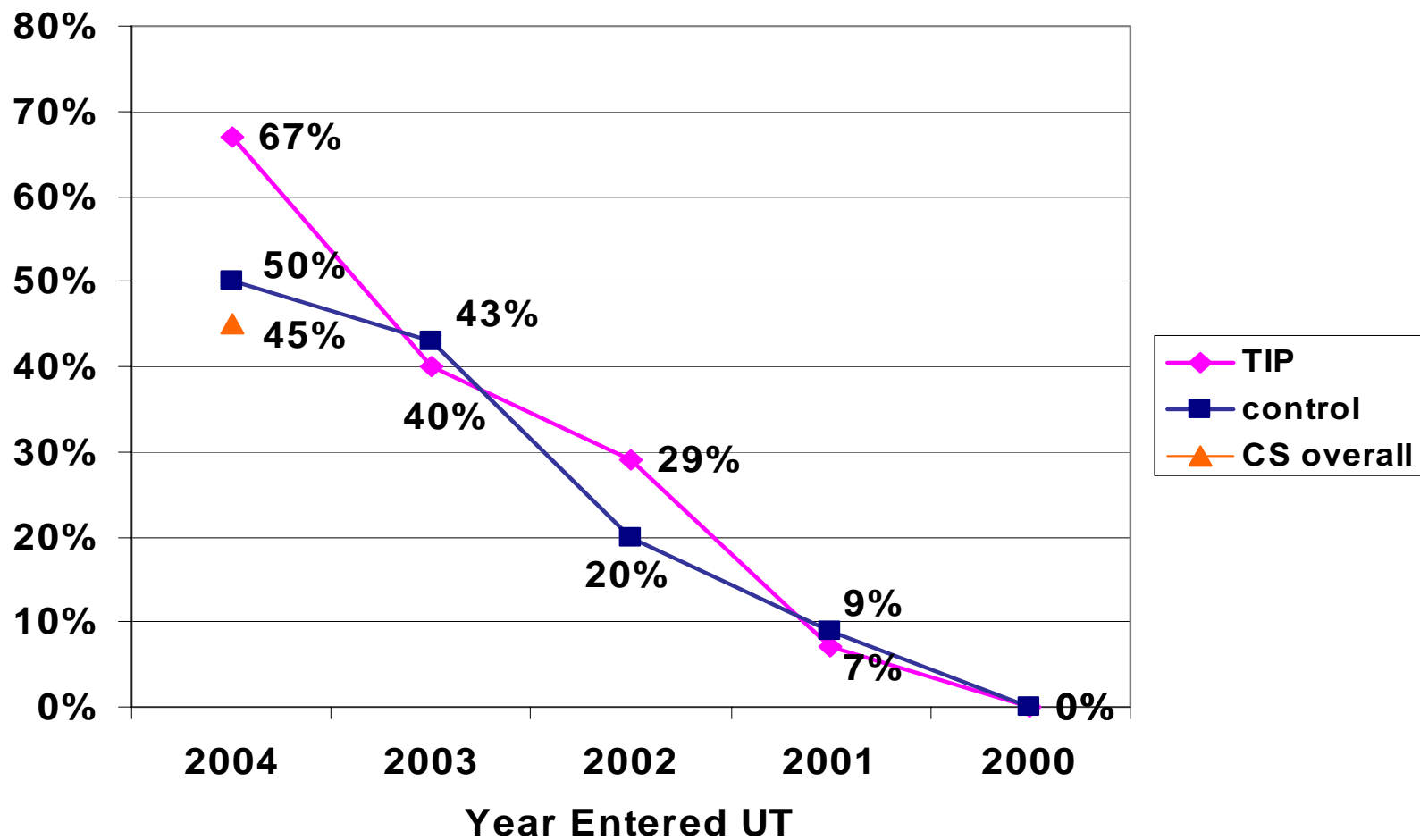
Cohort Comparisons

Retention of TIP Students in the Major
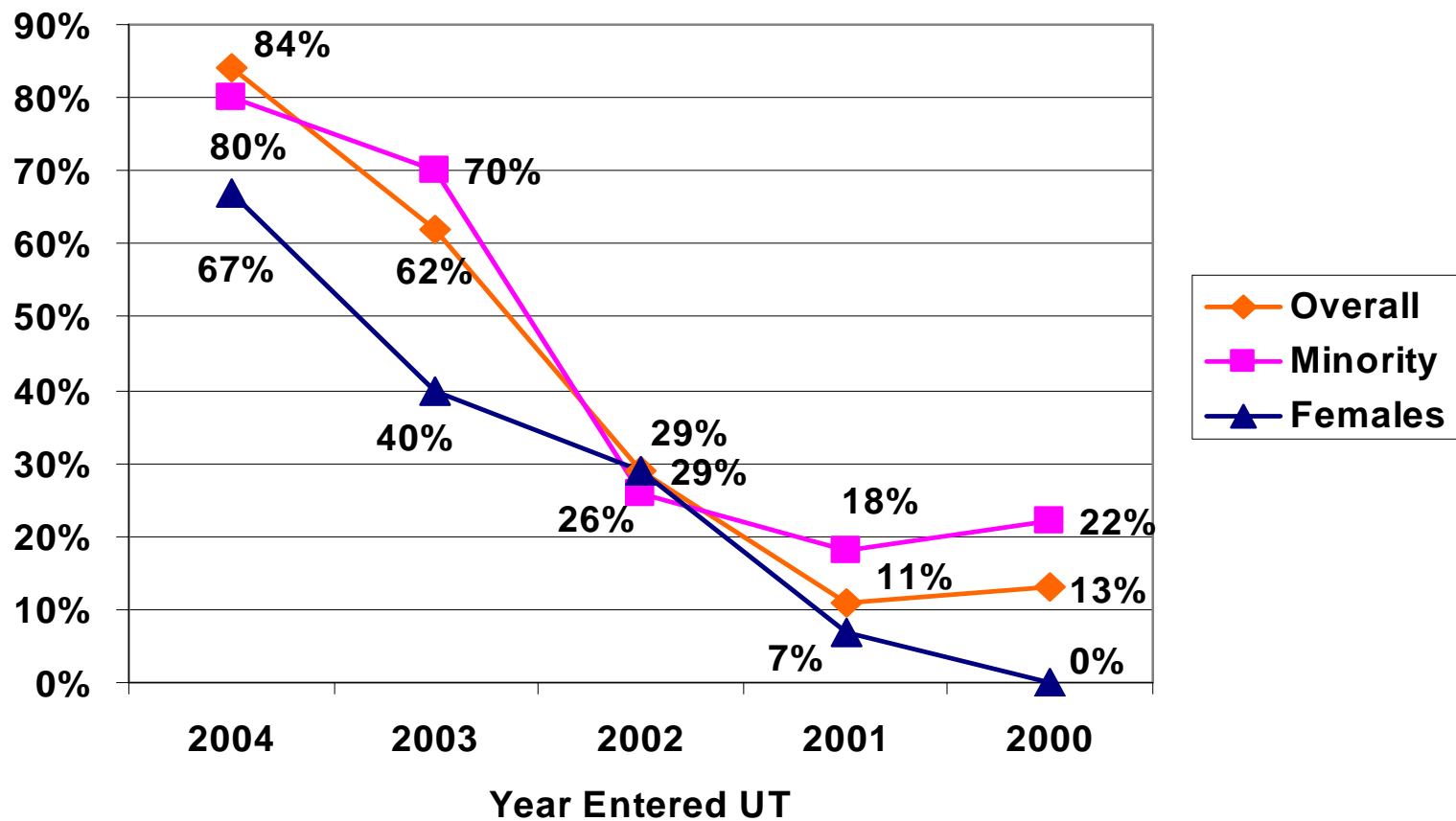
Graduation Data

	Cohort	
	2000	**2001**
Graduated in Major	**1** Male, Hispanic	
Will Graduate in Major	**3** Male, Hispanic Male, Asian Male, White	**4** Male, Hispanic Male, Hispanic Male, Asian Female, Hispanic

What we've learned: the good…

University of Texas at Austin

- Our courses work: students are well-prepared.

- Cohort model keeps minority students in the pipeline.

What we've learned: the bad…

University of Texas at Austin

- Do we work too hard to entice "uncertain" pre-CS students?

- Should we be teaching high school students what CS is?

What we've learned: the ugly

University of Texas at Austin

- Our program has not increased female retention in CS.

- Female students continue to be concerned with their "fit" to CS.

Next Steps

University of Texas at Austin

- Explore ways to help our students better understand CS careers

- Make CS a more attractive option for females

- Promote student interest in graduate school

- Seek funding support for our undergraduates

For more information

University of Texas at Austin

Cathy Stacy, PhD
Texas Interdisciplinary Plan
University of Texas at Austin
1 University Station G2550
Austin, Texas   78712

Phone: (512) 232 – 5721
Email: cstacy@mail.utexas.edu