Improving Performance: The Five Step Process

Mimi Lufkin: Chief Executive Officer
National Alliance for Partnerships in Equity

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Perkins Act Accountability

The collected data allows us to look at:

- ***Participation*** in CTE programs preparing students for nontraditional fields

- ***Completion*** of CTE programs preparing students for nontraditional fields

Nontraditional Fields

Occupations or fields of work, including careers in computer science, technology, and other current and emerging high skill occupations, for which individuals from one gender comprise less than 25 percent of the individuals employed in each such occupation or field of work.

The Five Step Process

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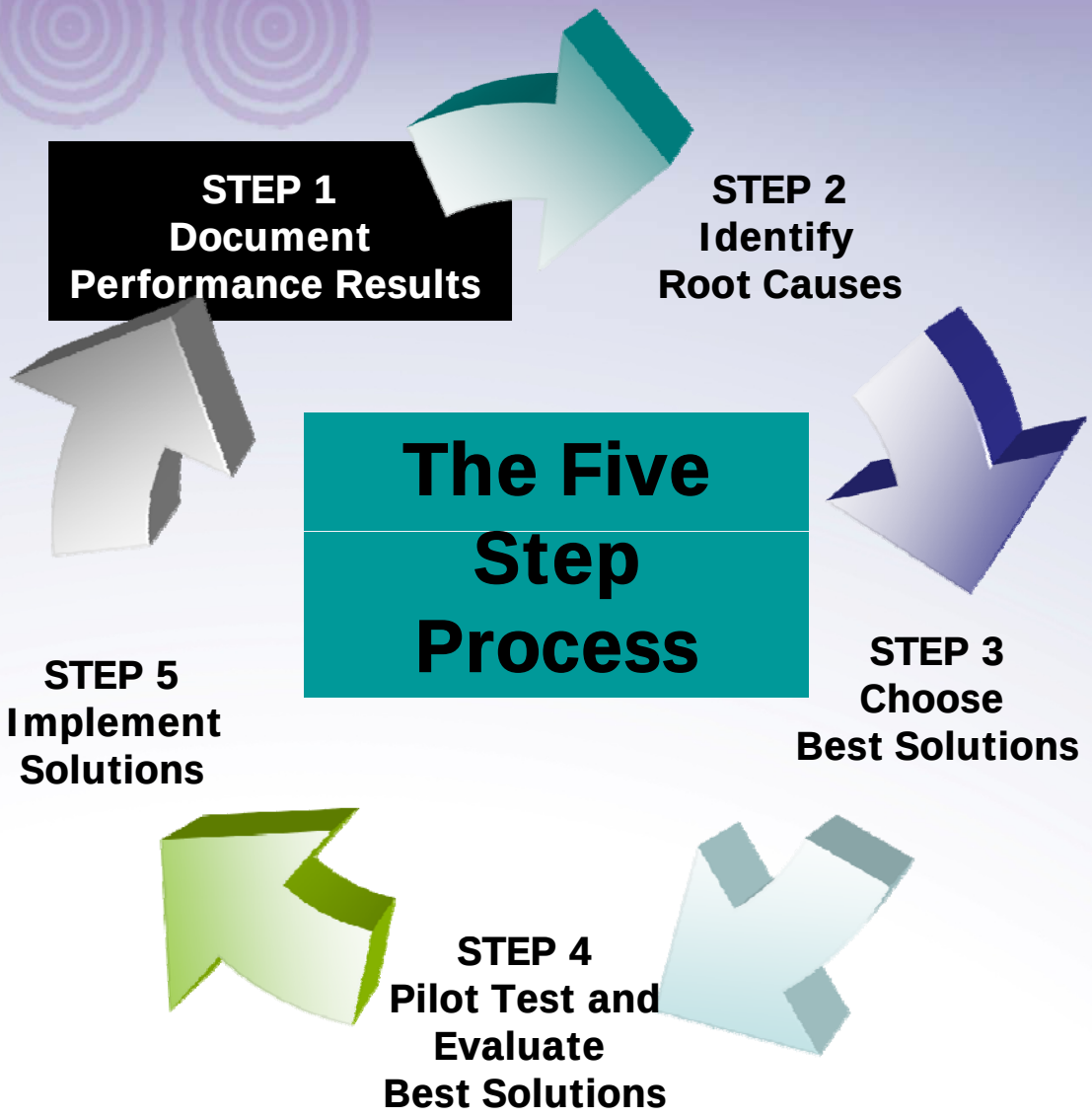

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STEP ONE

Document

Performance

Results

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Document Performance Results

Understand the problem completely before you seek solutions

How do you analyze performance data?

What questions should be addressed?

What tools and methods can be used to present and analyze data?

How should data quality problems be considered in analyzing data?

Unit of Analysis

- Site specific
  - District
  - School/College
  - Programs
- Identify nontraditional programs
  - Nontraditional for females
  - Nontraditional for males

Unit of Analysis

- Participation data
  - –4S1 & 4P1 in Perkins III
  - –6S1 & 5P1 in Perkins IV

  % of underrepresented gender students enrolled in a nontraditional CTE program

$$\text{participation rate} = \frac{\#\,\text{underrep. students enrolled in NTOCTE}}{\text{all students enrolled in NTOCTE}}$$

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Unit of Analysis

- Completion data
  - –4S2 & 4P2 in Perkins III
  - –6S2 & 5P2 in Perkins IV

% of underrepresented gender students completing a CTE program

$$\text{completion rate} = \frac{\#\ \text{underrep. students completing NTO CTE}}{\text{all students completing NTO CTE}}$$

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Data Collection
Disaggregation required in Perkins IV

- ***Gender***
  - –Male
  - –Female

- ***Race/Ethnicity***
  - –American Indian or Alaskan Native
  - –Asian or Pacific Islander
  - –Black, non-Hispanic
  - –Hispanic
  - –White- non-Hispanic

Special Population

- –Underrepresented gender students in a nontraditional CTE program
- –Single Parent
- –Displaced Homemaker
- –Limited English Proficiency
- –Individuals with a Disability
- –Economically Disadvantaged

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Other Data Sources

- No Child Left Behind (NCLB) Report Card
- National Center for Education Statistics (NCES)
- District Enrollment / State Level
- Other Sources???
  - Later, you'll brainstorm about additional data sources that might be helpful

Recommended Analyses

Comparisons	***Trends***
•State performance level •Best performer in state •Selected peer benchmark •Set your own benchmark	• At least 2 years • Preferred 3-5 years

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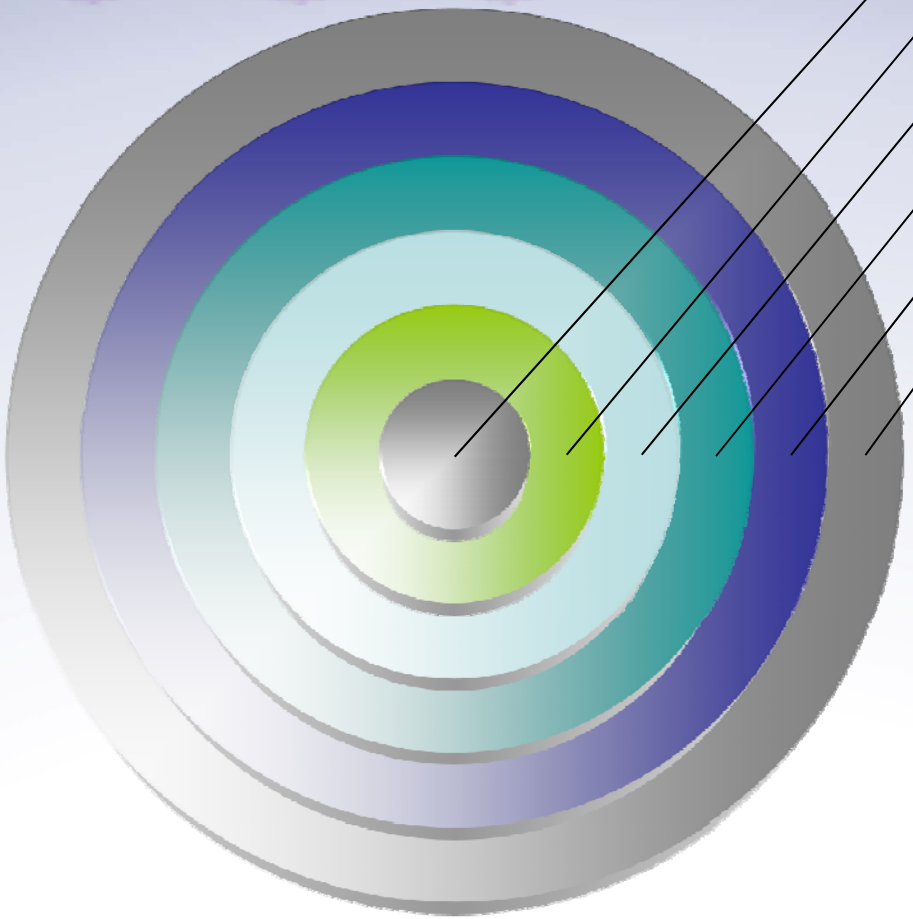
Data Quality Concerns
Alignment, Scope, Reliability, Time & Coverage

- **Alignment**: Extent to which instruments accurately measures what they're supposed to measure
  - How are participation #s generated? By teachers? Districts?

- **Scope**: Breadth of measurement with respect to state-identified performance outcomes
  - Do districts measure single parents in programs?

Data Quality Concerns
Alignment, Scope, Reliability, Time & Coverage

- **Reliability**: Consistency in conducting measurements
  - Do all districts define “concentrator” similarly?
- **Timing**: When measurement is made
  - Do some districts measure at diff. times of year?
- **Coverage**: Base of students included in measurement
  - Include all secondary students? Only concentrators?



Student Populations for Data Comparisons

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Perkins Consolidated Annual Report Data

State/District/Program Level Analysis

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Perkins III Core Indicators

- Participation in a nontraditional program
  - 4s1 – secondary participation
  - 4p1 – post-secondary participation
- Completion of a nontraditional program
  - 4s2 – secondary completion
  - 4p2 – post-secondary completion

WI Perkins Postsecondary Definitions for NTO Participation Measure (4P1)

$$\text{participation rate} = \frac{\#\,\text{underrep. students enrolled in NTO CTE}}{\text{all students enrolled in NTO CTE}}$$

Numerator: Number of CTE participants of underrep. gender who participated in NTO CTE programs

Denominator: Number of CTE participants who participated in a nontraditional CTE programs

Participant: All students who took at least one course in a program area leading to a degree or diploma

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Perkins Postsec Data: Participation

	District A*	District B**	State***	NPM
	4P1	4P1	4P1	4P1
2004	15.14%	9.16%	12.45%	11.65%
2005	15.31%	9.91%	12.48%	11.65%
2006	15.34%	9.78%	12.22%	11.75%
2007	14.68%	8.81%	11.86%	11.90%

- NPM = Negotiated Performance Measure
  - negotiated w/the US Dept. of Ed, Office of Vocational and Adult Education each year in Perkins III

Perkins Postsec Data: Participation

	District A*	District B**	State***	NPM
	4P1	4P1	4P1	4P1
2004	15.14%	9.16%	12.45%	11.65%
2005	15.31%	9.91%	12.48%	11.65%
2006	15.34%	9.78%	12.22%	11.75%
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Perkins Postsec Data: Participation

	District A*	District B**	State***	NPM
	4P1	4P1	4P1	4P1
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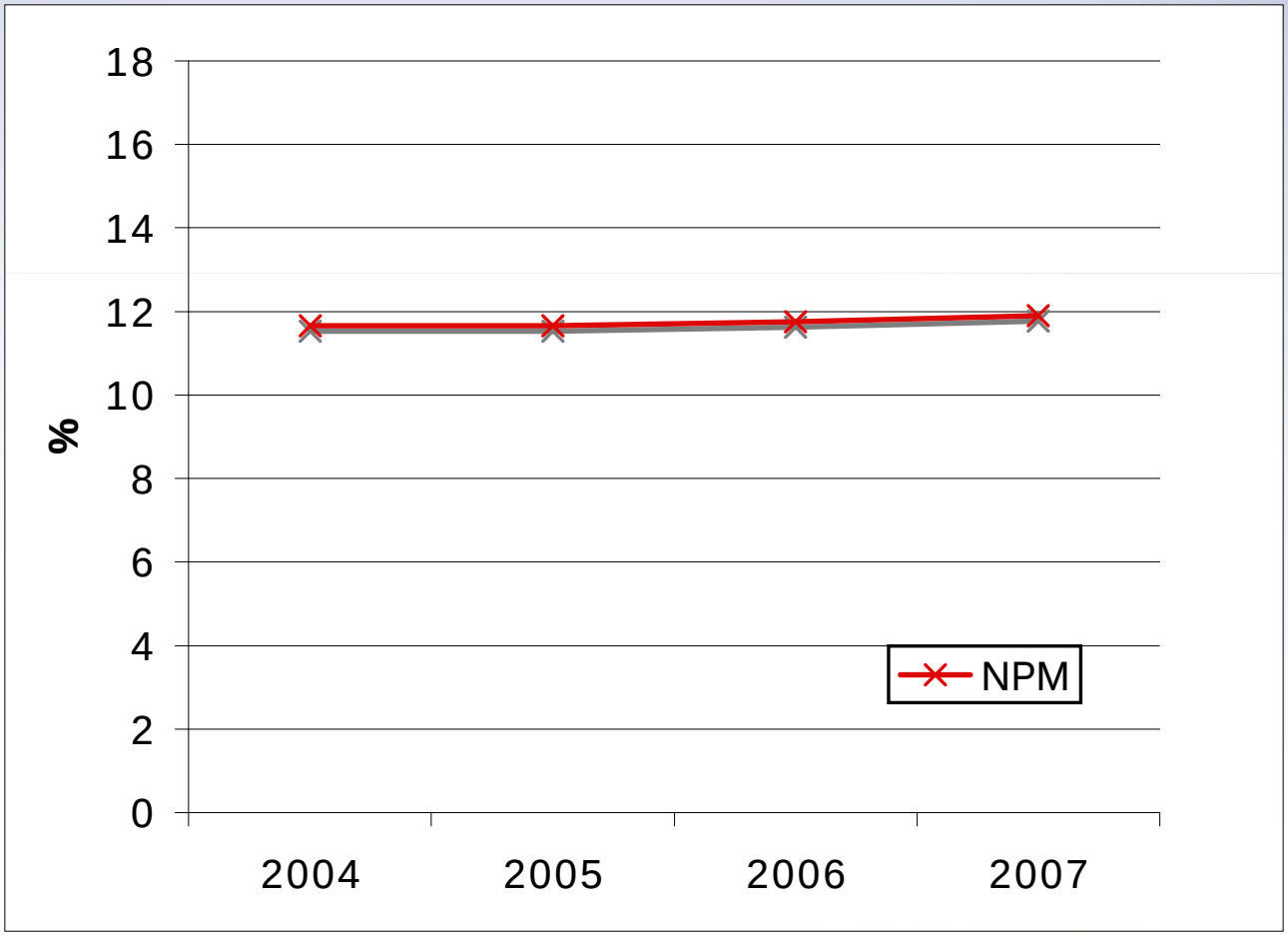
Postsecondary Participation



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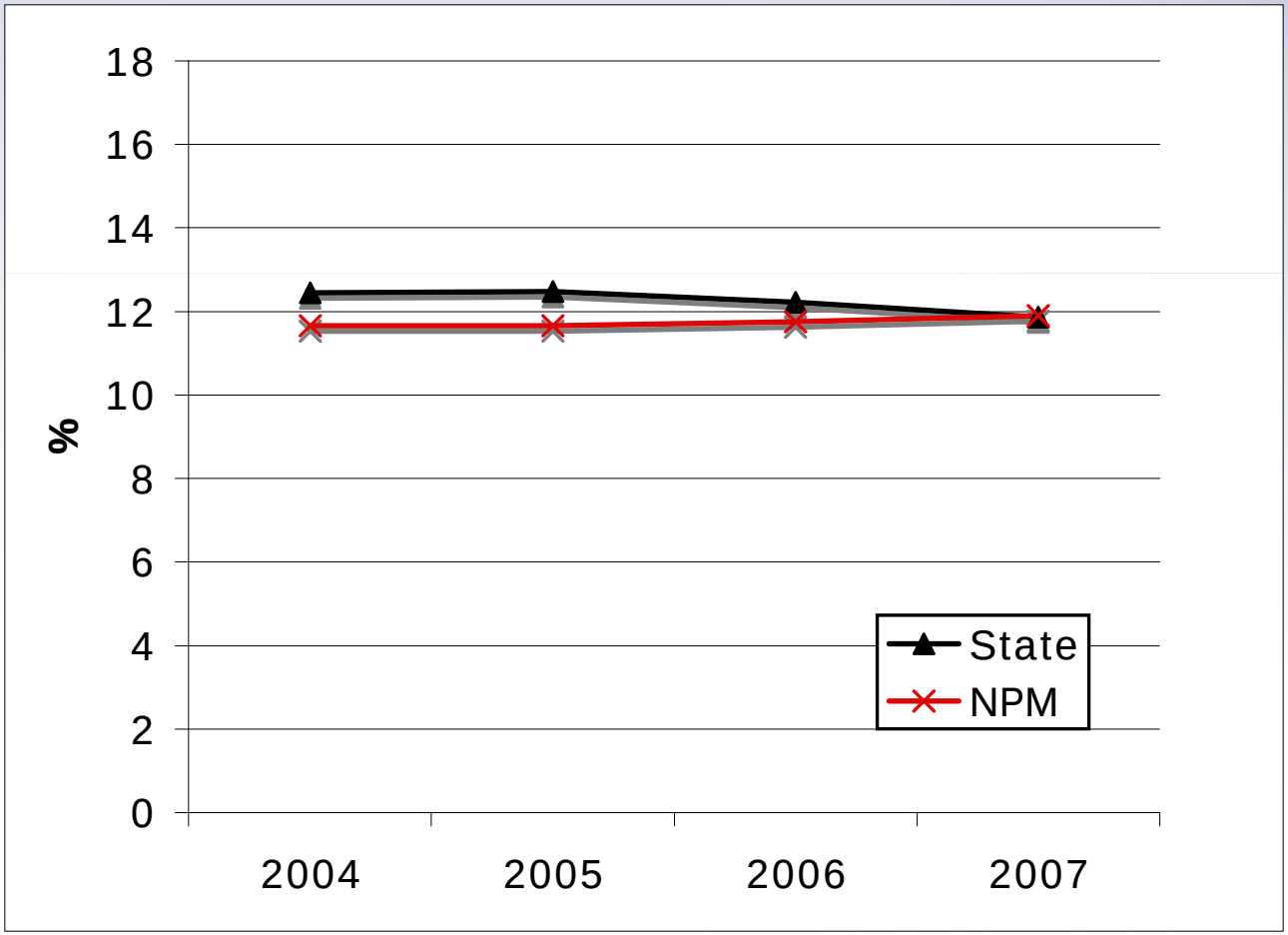
Postsecondary Participation



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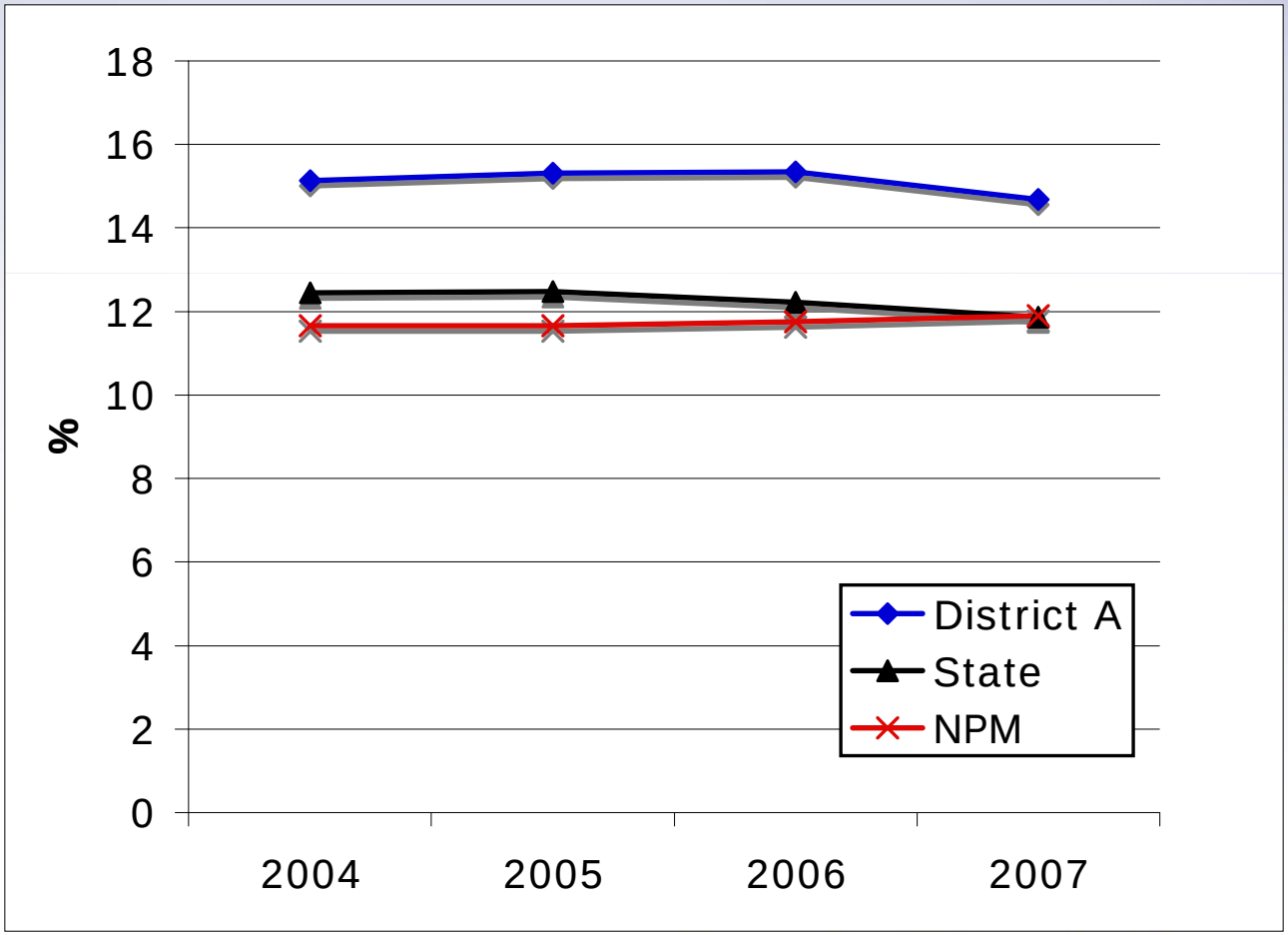
Postsecondary Participation



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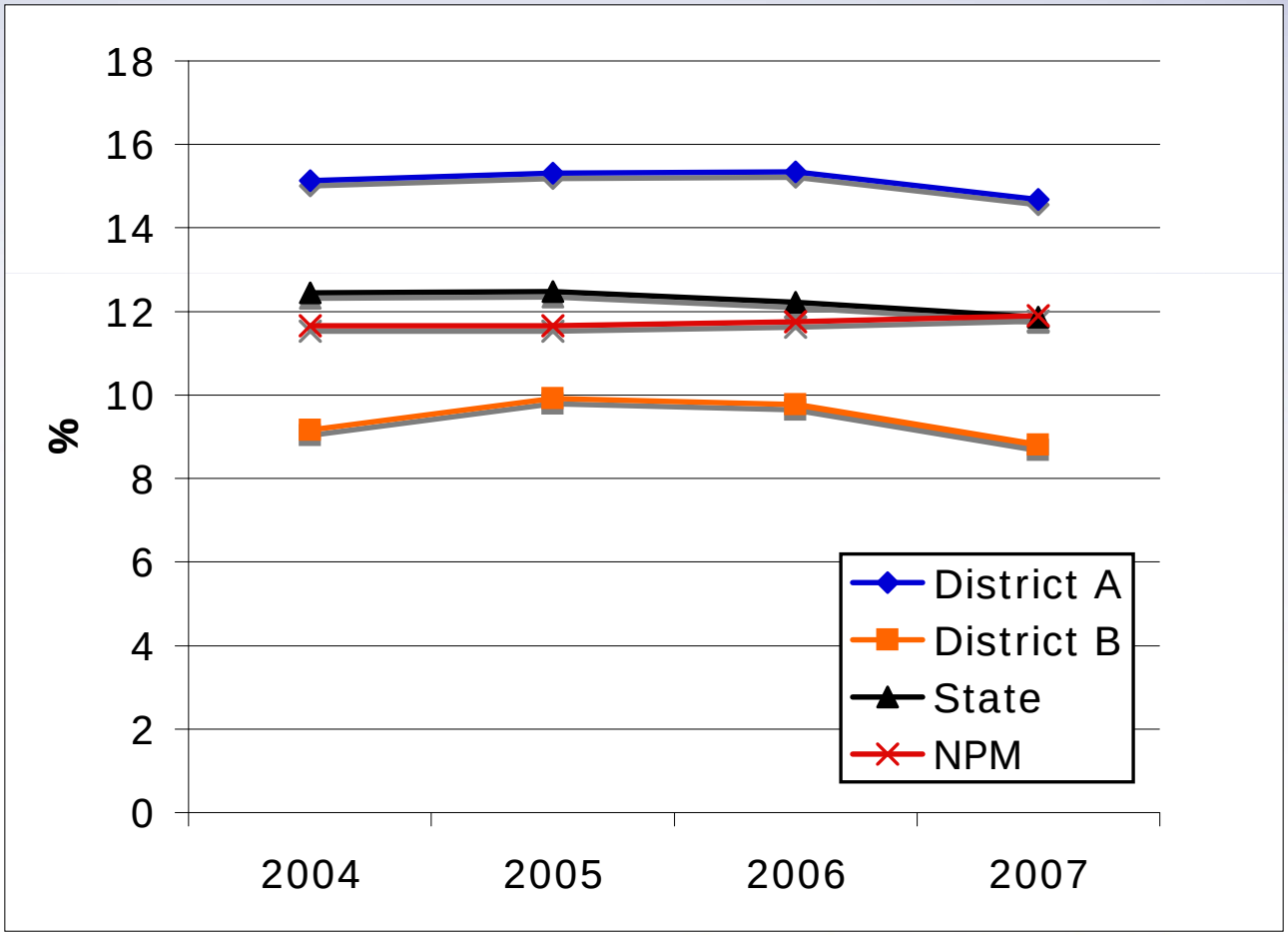
Postsecondary Participation



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WI Perkins Postsecondary Definitions for NTO Completion Measure (4P2)

$$\text{completion rate} = \frac{\#\ \text{underrep. students completing NTO CTE}}{\text{all students completing NTO CTE}}$$

- ***Numerator***: Number of CTE concentrators from underrep. gender who completed NTO CTE prog
- ***Denominator***: Number of CTE concentrators who completed an NTO CTE program
- ***Concentrator***: A student who took 24 credits in an academic year or enrolled for the first time in a less than 30 credit (short term) program and had taken no classes in the prior 4 years.

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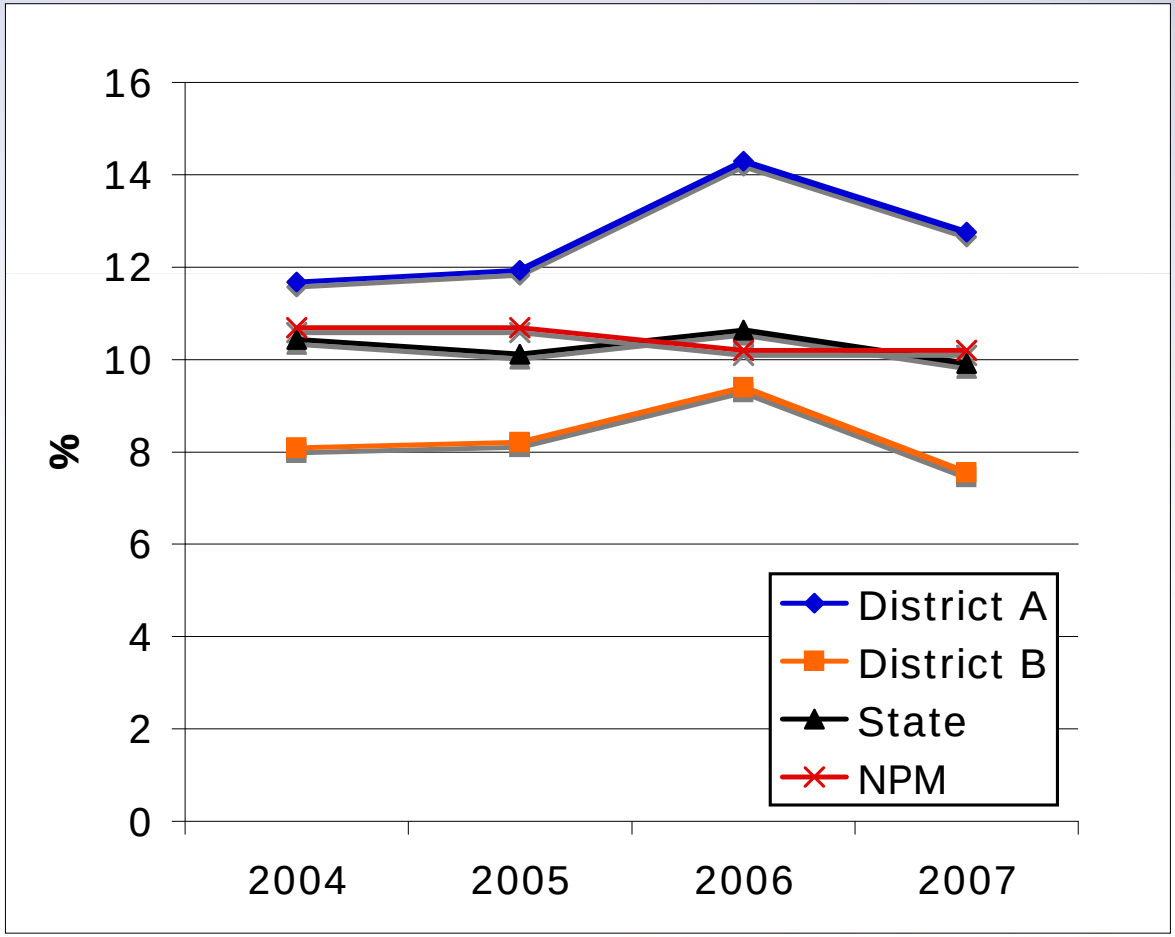
Perkins Postsec Data: Completion

	District A*	District B**	State***	NPM
	4P2	4P2	4P2	4P2
2004	11.67%	8.09%	10.43%	10.69%
2005	11.93%	8.21%	10.12%	10.69%
2006	14.29%	9.40%	10.63%	10.20%
2007	12.76%	7.55%	9.92%	10.20%

- NPM = Negotiated Performance Measure
  - negotiated w/the US Dept. of Ed, Office of Vocational and Adult Education each year in Perkins III

Postsecondary Completion



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Gender Disaggregation

- Participation Rates of Males:

$$\frac{\#\ \text{males in these programs}}{\text{all students in these programs}}$$

- Participation Rates of Females:

$$\frac{\#\ \text{females in these programs}}{\text{all students in these programs}}$$

  - Can go to the program level:

$$\frac{\#\ \text{females in carpentry programs}}{\text{all students in carpentry programs}}$$

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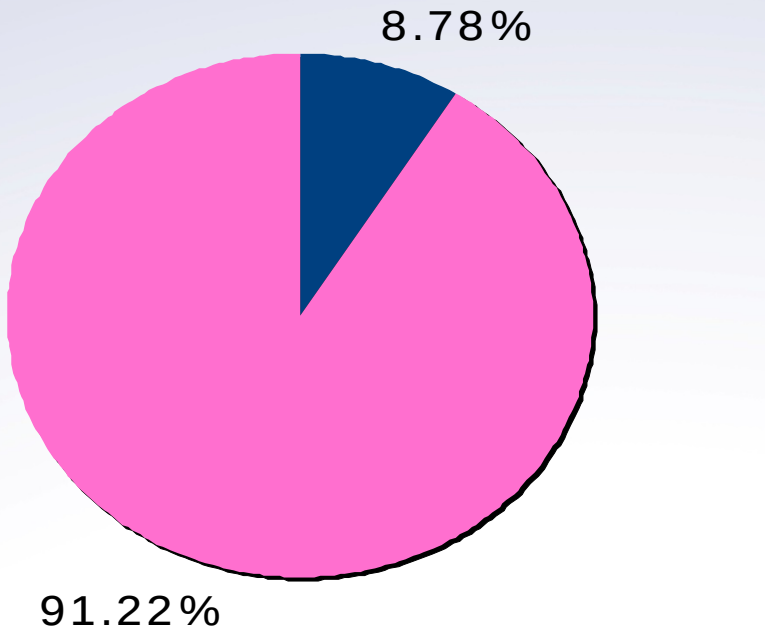
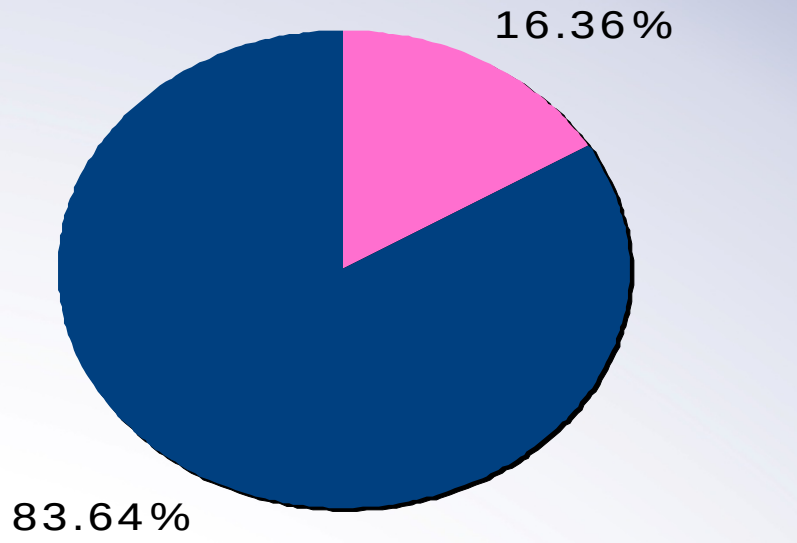
Postsecondary Participation Rates

Male Participation Rate: 2007 Data



Female Participation Rate: 2007 Data



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Perkins Postsecondary Data: By Gender

2007	Participation (4P1)	Completion (4P2)
State Performance Goal (NPM)	11.90%	10.20%
State Actual Level	11.86%	9.92%
Within NTO Programs for Males: $\frac{\#\text{ males in these programs}}{\text{all students in these programs}}$	8.78%	8.04%
Within NTO Programs for Females: $\frac{\#\text{ females in these programs}}{\text{all students in these programs}}$	16.36%	14.13%

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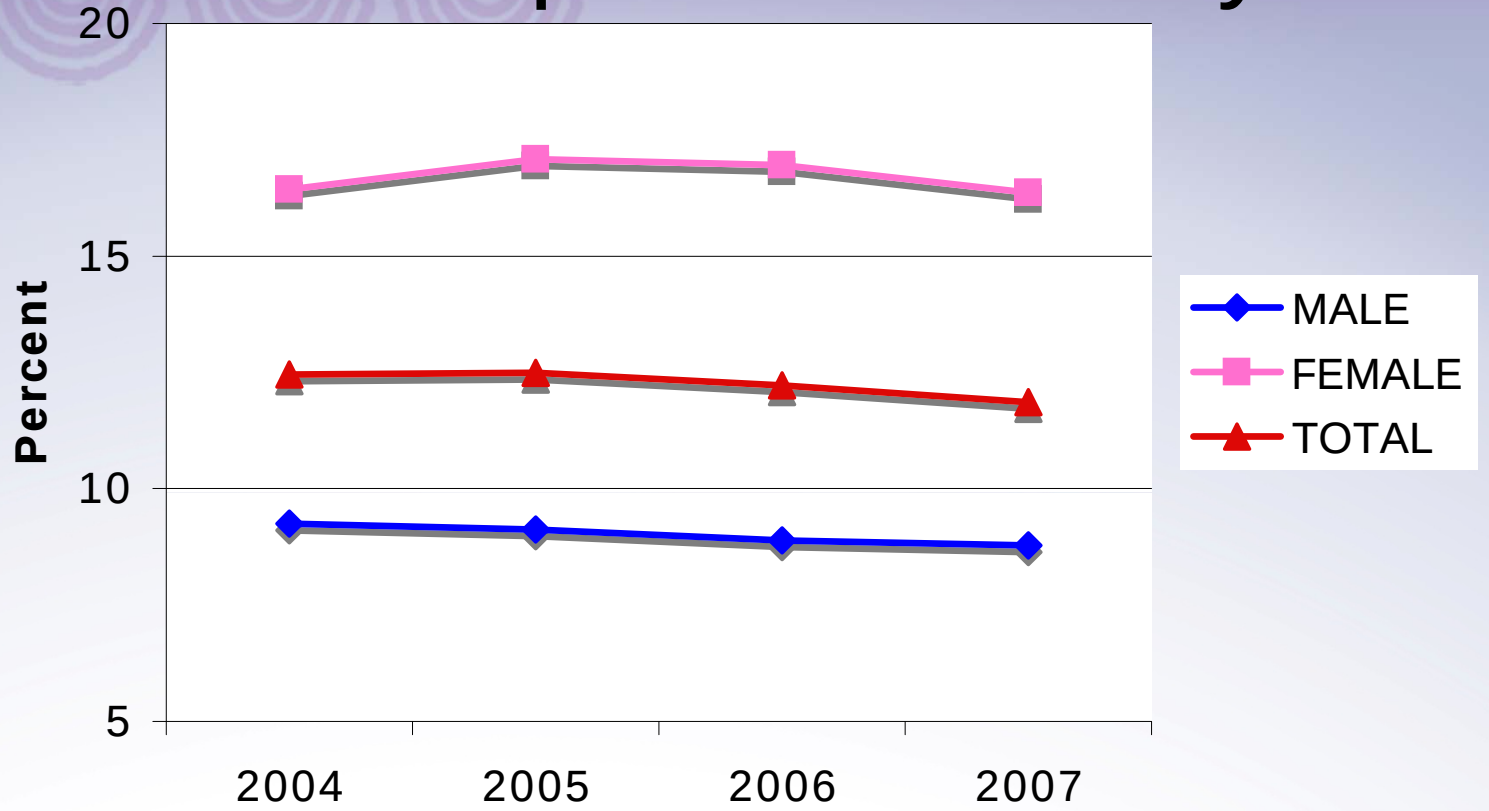
Postsec. Participation Rates by Gender



- Explanation of one of the lines:
- Pink line = ***Participation rate*** for females
  - Of all students participating in CTE programs that are NTO for females, the % of these students who are female

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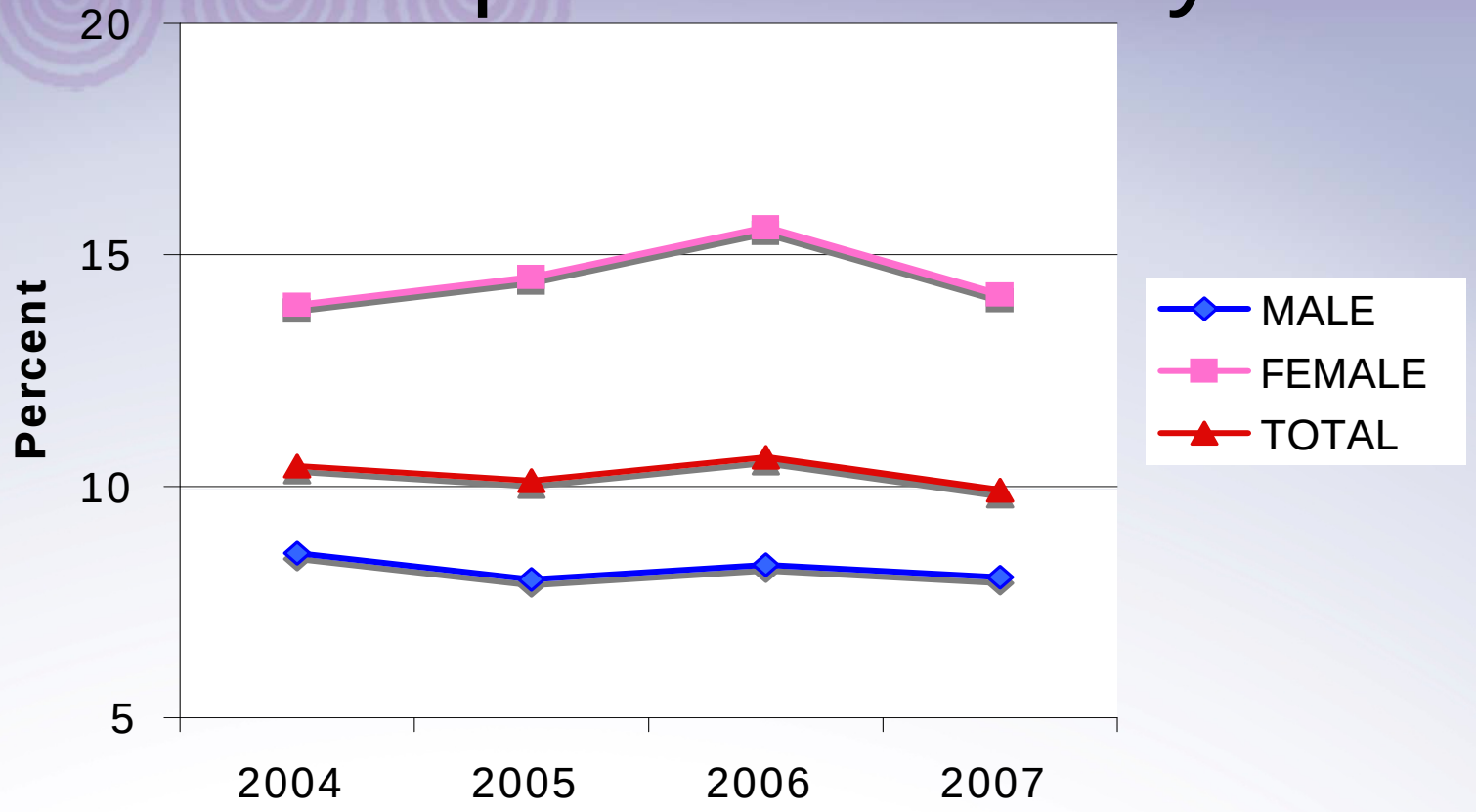
Postsec. Completion Rates by Gender



- Explanation of one of the lines:
- Pink line = ***Completion rate*** for females
  - Of all students completing CTE programs that are NTO for females, the % of these students who are female

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State Postsecondary Performance Report - NTO Programs for Females

2007	4P1	4P2
Total in NTO Programs for Females	16.36%	14.13%
Mechanical Engineering, Technical		
Carpenters		
Ag Production and Management		

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State Postsecondary Performance Report - NTO Programs for Males

2007	4P1	4P2
Total in NTO Programs for Males	8.78%	8.04%
Child Care & Guidance Workers & Mgrs		
Nursing Assistant		
Administrative & Secretarial Services		

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Postsecondary State Performance Report NTO Enrollment by Ethnicity

2004 Data: Available at Peer Collaborative Resource Network http://www.edcountability.net

Ethnicity	All CTE		All Students in NTO CTE		Underrep. Gender in NTO CTE	
American Indian						
Asian						
Black						
Hispanic						
White						
No reported ethn.						

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Postsecondary State Performance Report NTO Enrollment by Ethnicity

2004 Data: Available at Peer Collaborative Resource Network http://www.edcountability.net

Ethnicity	All CTE		All Students in NTO CTE		Underrep. Gender in NTO CTE	
American Indian	1,572/ 135,303	1.16%				
Asian	2,465	1.82%				
Black	8,034	5.94%				
Hispanic	4,190	3.10%				
White	113,173	83.64%				
No reported ethn.	5 or less	~0%				

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Ethnicity	All CTE		All Students in NTO CTE		Underrep. Gender in NTO CTE	
American Indian	1,572/ 135,303	1.16%	848/ 74,462	1.14%		
Asian	2,465	1.82%	1,198	1.61%		
Black	8,034	5.94%	4,601	6.18%		
Hispanic	4,190	3.10%	2,255	3.03%		
White	113,173	83.64%	62,862	84.42%		
No reported ethn.	5 or less	~0%	2,698	3.62%		

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Postsecondary State Performance Report NTO Enrollment by Ethnicity

2004 Data: Available at Peer Collaborative Resource Network http://www.edcountability.net

Ethnicity	All CTE		All Students in NTO CTE		Underrep. Gender in NTO CTE	
American Indian	1,572/ 135,303	1.16%	848/ 74,462	1.14%	154/ 9,268	1.66%
Asian	2,465	1.82%	1,198	1.61%	163	1.76%
Black	8,034	5.94%	4,601	6.18%	737	7.95%
Hispanic	4,190	3.10%	2,255	3.03%	360	3.88%
White	113,173	83.64%	62,862	84.42%	7,575	81.73%
No reported ethn.	5 or less	~0%	2,698	3.62%	279	3.01%

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Postsecondary State Performance Report NTO Enrollment by Ethnicity

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Asian	2,465	1.82%	1,198	1.61%	163	1.76%
Black	8,034	5.94%	4,601	6.18%	737	7.95%
Hispanic	4,190	3.10%	2,255	3.03%	360	3.88%
White	113,173	83.64%	62,862	84.42%	7,575	81.73%
No reported ethn.	5 or less	~0%	2,698	3.62%	279	3.01%

What might lead Black students, especially those of the underrep. gender, to choose NTO CTE programs at a higher rate than their representation in CTE programs in general?

Postsecondary State Performance Report NTO Participation by Special Population

2004 Data: Available at Peer Collaborative Resource Network http://www.edcountability.net

Special Population	All CTE		Students of this population in NTO CTE	
Individuals with a Disability	6,350/85,994	7.38%	656/9,268	7.08%
Economically Disadvantaged	31,588	36.73%	2,935	31.67%
Single Parents	11,192	13.01%	904	9.75%
Limited English Proficient	1,746	2.03%	111	1.20%

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Postsecondary State Performance Report NTO Participation by Special Population

2004 Data: Available at Peer Collaborative Resource Network http://www.edcountability.net

Special Population	All CTE		Students of this population in NTO CTE	
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Economically Disadvantaged	31,588	36.73%	2,935	31.67%
Single Parents	11,192	13.01%	904	9.75%
Limited English Proficient	1,746	2.03%	111	1.20%

What questions might we ask about single parents?

WI Perkins Secondary Definitions for NTO Participation Measure (4S1)

$$\text{participation rate} = \frac{\#\,\text{underrep. students enrolled in NTO CTE}}{\text{all students enrolled in NTO CTE}}$$

Numerator: # of underrep. gender CTE concentrators enrolled in progs representing nontrad. occupations

Denominator: # of CTE concentrators enrolled in programs representing nontraditional occupations

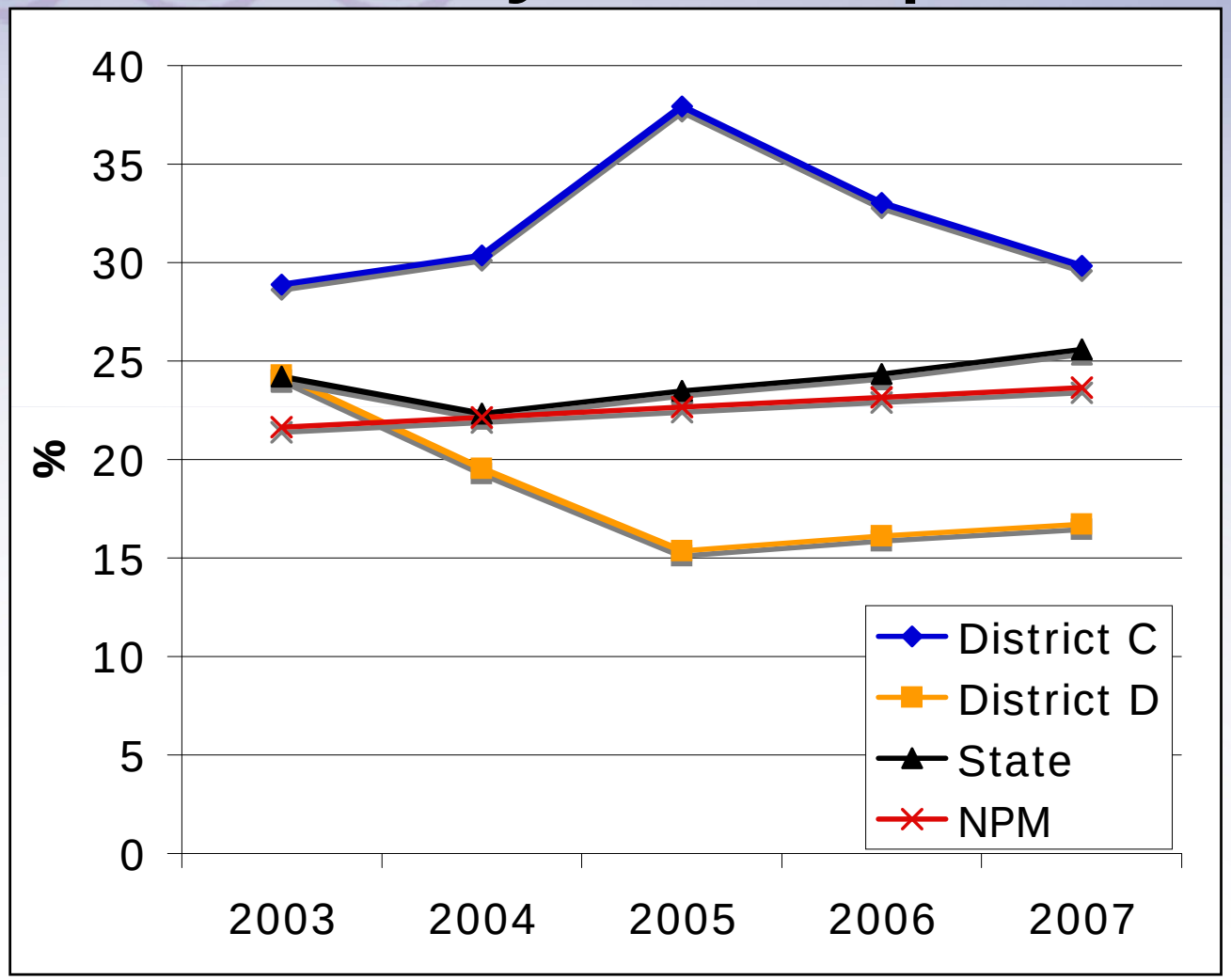
Concentrator: Student enrolled in at least one vocational course during the year which is a part of a coherent sequence of three or more courses leading to the student's secondary vocational career objective

Perkins Secondary Data: Participation

	District C*	District D**	State***	NPM
	4S1	4S1	4S1	4S1
2003	28.88%	24.27%	24.21%	21.65%
2004	30.36%	19.55%	22.32%	22.15%
2005	37.93%	15.35%	23.48%	22.65%
2006	33.04%	16.12%	24.33%	23.15%
2007	29.84%	16.72%	25.60%	23.65%

- NPM = Negotiated Performance Measure
  - negotiated w/the US Dept. of Ed, Office of Vocational and Adult Education each year in Perkins III

Secondary Participation



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WI Perkins Secondary Definitions for NTO Completion Measure (4S2)

$$\text{completion rate} = \frac{\#\ \text{underrep. students completing NTO CTE}}{\text{all students completing NTO CTE}}$$

Numerator: # of underrep. gender CTE concentrators completing progs representing nontrad. occupations

Denominator: # of CTE concentrators completing programs representing nontraditional occupations

Completer: Student in the 12th grade

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Perkins Secondary Data: Completion

	District C*	District D**	State***	NPM
	4S2	4S2	4S2	4S2
2003	32.08%	26.47%	23.37%	20.76%
2004	29.37%	22.60%	23.08%	21.26%
2005	36.36%	15.05%	23.81%	21.76%
2006	39.05%	15.38%	24.65%	22.26%
2007	24.46%	10.91%	25.29%	22.76%

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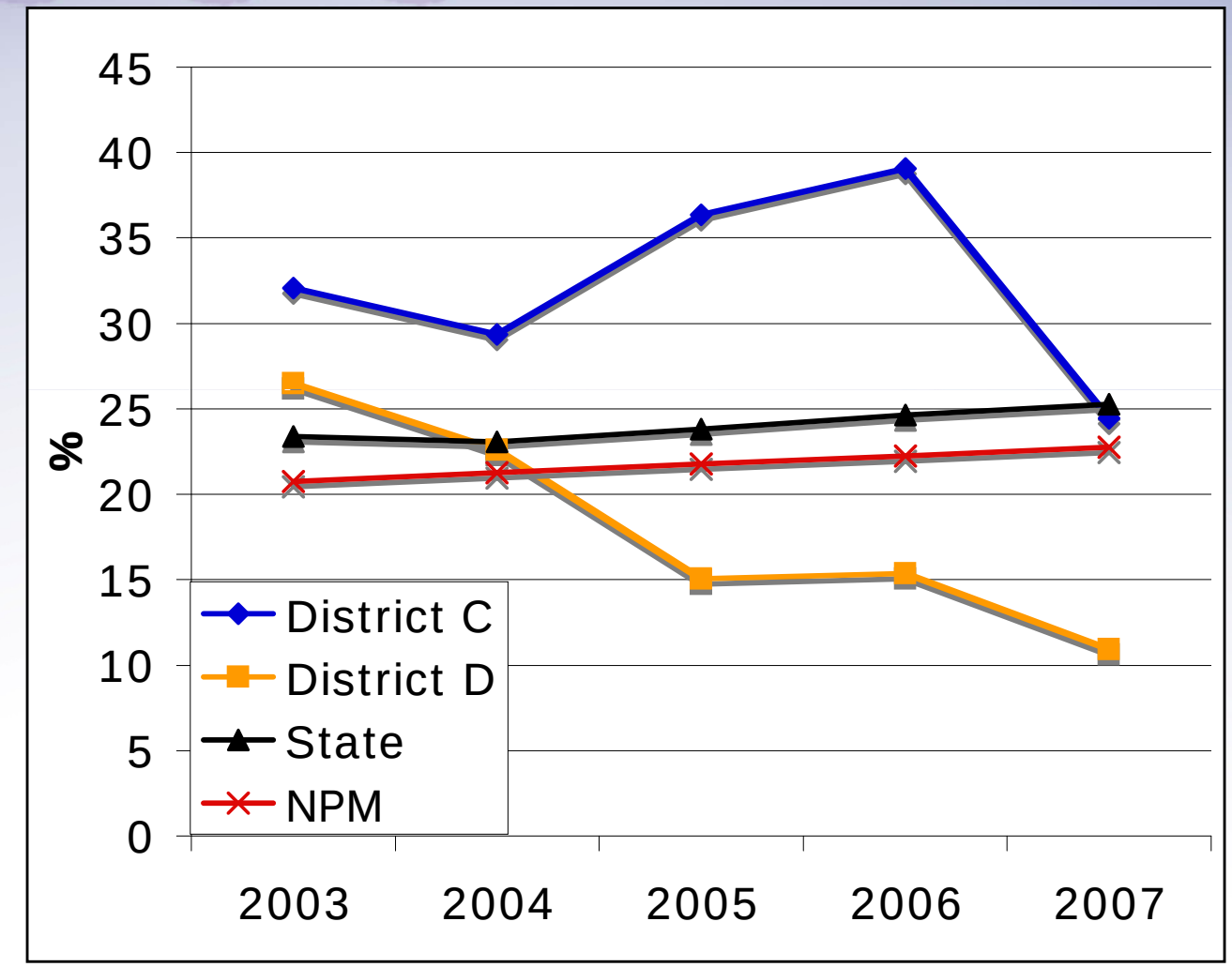
Secondary Completion



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Perkins Secondary Data: Participation by Gender

2007	**4S1**
State Performance Goal	23.65%
State Actual Level	25.60%
Within NTO Programs for Males: $\frac{\#\ \text{males in these programs}}{\text{all students in these programs}}$	33.08%
Within NTO Programs for Females: $\frac{\#\ \text{females in these programs}}{\text{all students in these programs}}$	19.23%

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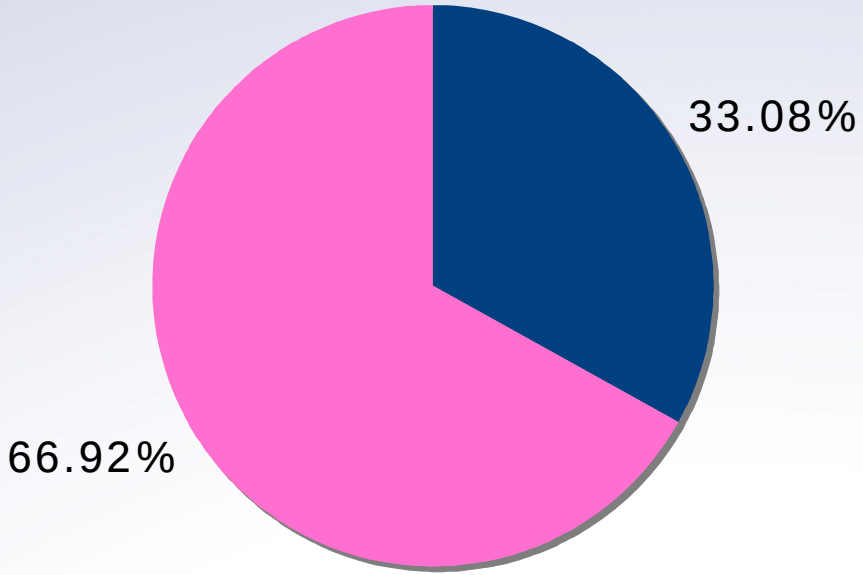
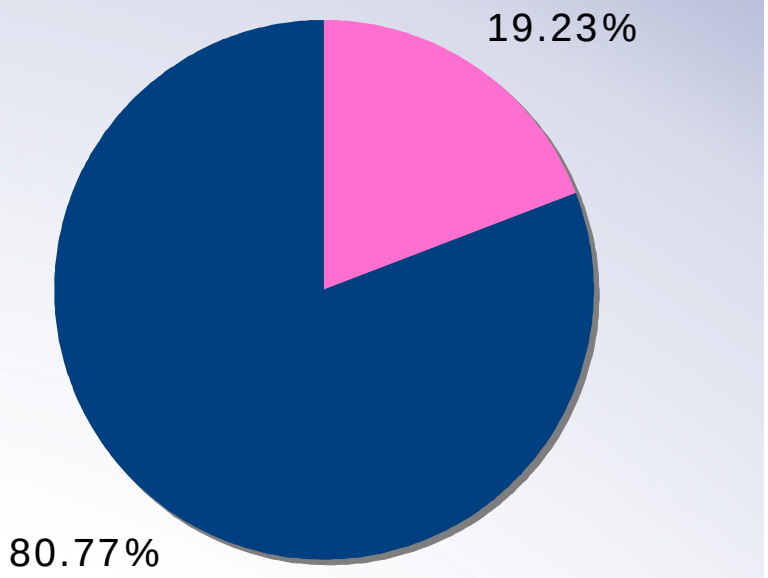
Secondary Participation Rates

Male Participation Rate: 2007 Data



Female Participation Rate: 2007 Data



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Secondary State Performance Report NTO Programs for Males

2007	4S1 #	4S1 %
#/% Males in NTO Programs for Males	2,737/ 8,273	33.08%
Child Care & Guidance Workers & Mgrs (20.02)	203/ 1,834	11.07%
Nursing Assistant (51.1614)	29/583	4.97%
Administrative & Secretarial Services (52.04)	312/ 758	41.16%

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Secondary State Performance Report NTO Programs for Females

2007	4S1 #	4S1 %
#/% Females in NTO Programs for Females	1,844/ 9,590	19.23%
Mechanical Engineering, Technical (15.08)	24/376	6.82%
Electrical & Electronic Engineering (15.03)	13/236	5.51%
Ag Production and Management (1.03)	30/183	16.39%

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Secondary District Performance Report NTO Programs for Females

2007	% Females in NT Programs for Females	Mechanical Engineering
State	1,844/9,590 19.23%	24/376 = 6.82%
District D	47/255 18.43%	4/28 = 14.29%
District E	27/87 31.03%	6/14 = 42.86%
District F	27/175 15.43%	2/16 = 12.50%

2007 Secondary State Performance Report NTO Participation by Ethnicity

Ethnicity	All CTE Concentrators	All Students in NTO CTE	Underrep. Gender in NTO CTE
American Indian	310/ 37,778		
Asian	1,587		
Black	4,849		
Hispanic	2,081		
White	28,951		

- The above shows:
  - There were 37,778 secondary CTE concentrators
  - # of students of diff. ethnicities who were CTE concentrators
  - Majority of these students were White; very few American Indians

2007 Secondary State Performance Report NTO Participation by Ethnicity

Ethnicity	All CTE Concentrators	All Students in NTO CTE	Underrep. Gender in NTO CTE
American Indian	310/ 37,778	152/17,863	
Asian	1,587	738	
Black	4,849	2,296	
Hispanic	2,081	1,010	
White	28,951	13,667	

- The above shows that:
  - Of the 37,778 CTE concentrators 17,863 were in NTO progs
  - # of students of diff. ethnicities who were in these programs

2007 Secondary State Performance Report NTO Participation by Ethnicity

Ethnicity	All CTE Concentrators	All Students in NTO CTE	Underrep. Gender in NTO CTE
American Indian	310/ 37,778	152/17,863	34/4,581
Asian	1,587	738	213
Black	4,849	2,296	885
Hispanic	2,081	1,010	327
White	28,951	13,667	3,122

- The above shows that:
  - Of 17,863 students in NTO CTE progs, 4,581 were of the underrepresented gender
  - # of underrep. students of diff. ethnicities in these programs
  - #s can get really small, even statewide (e.g., Am. Indian)

2007 Secondary State Performance Report NTO Participation by Ethnicity

Ethnicity	All CTE Concentrators	All Students in NTO CTE	Underrep. Gender in NTO CTE
American Indian	0.82%	0.85%	0.74%
Asian	4.20%	4.13%	4.65%
Black	12.84%	12.70%	19.32%
Hispanic	5.51%	5.65%	7.14%
White	76.63%	76.51%	68.15%

- The above shows the data from previous slides in %s:
  - Column 1: % of all CTE concentrators who were of diff. ethnicities
  - Column 2: Of all students in NTO CTE progs, % of diff. ethnicities
  - Column 3: Of all students in NTO CTE progs, % of underrep. gender

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- ***EXAMPLE DISCUSSION***:
- 12.84% of all CTE Concentrators were Black

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- ***EXAMPLE DISCUSSION***:
- 12.84% of all CTE Concentrators were Black
- 12.70% of all students in NTO CTE progs were Black
- We might expect a similar % of underep. Black students in these NTO progs

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- 12.70% of all students in NTO CTE progs were Black
- We might expect a similar % of underrp. Black students in these NTO progs
  - But instead find this percent to be 19.32%
  - What might lead Black students to choose NTOs at a higher rate than their representation in these programs in general?

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White	76.63%	76.51%	68.15%

- What questions might we ask regarding White students?

- ***EXAMPLE DISCUSSION***:
- 12.84% of all CTE Concentrators were Black
- 12.70% of all students in NTO CTE progs were Black
- We might expect a similar % of underrp. Black students in these NTO progs
  - But instead find this percent to be 19.32%
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2007 Secondary State Performance Report NTO Participation by Special Population

Special Population	All CTE	All NTO	Underrepresented Gender in NTO CTE
Individuals with a Disability	11.54%	10.55%	8.10%
Economically Disadvantaged	18.49%	13.81%	17.49%
Academically Disadvantaged	14.86%	13.19%	13.27%
Limited English Proficient	3.32%	2.64%	2.99%

2007 Secondary State Performance Report NTO Participation by Special Population

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Which of these special population groups has a lower % of secondary concentrators in NTO progs relative to their representation in all CTE progs?

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All four of these special population groups

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All four of these special population groups

Which of these special population groups has a lower % of the underrep. gender in NTO progs relative to their representation in all NTO programs?

2007 Secondary State Performance Report NTO Participation by Special Population

Special Population	All CTE	All NTO	Underrepresented Gender in NTO CTE
Individuals with a Disability	11.54%	10.55%	8.10%
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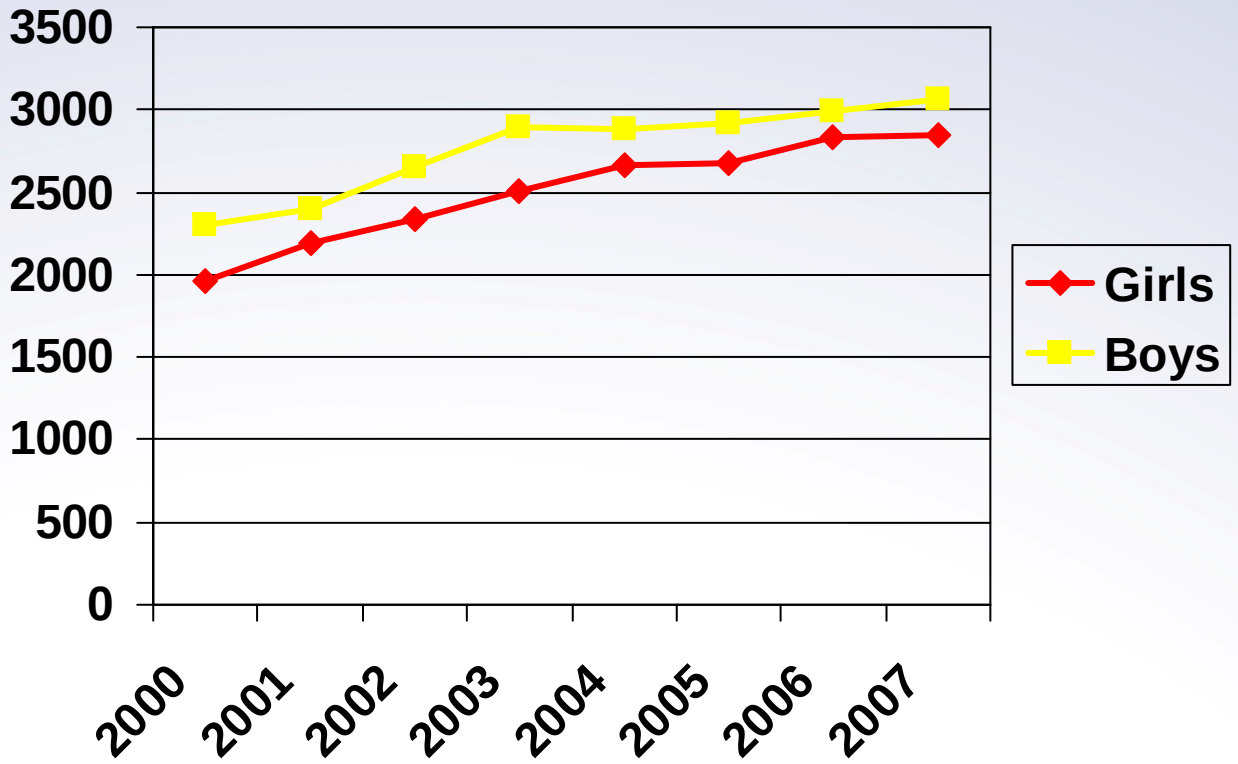
All four of these special population groups

Which of these special population groups has a lower % of the underrep. gender in NTO progs relative to their representation in all NTO programs?

Individuals with a disability

Secondary Academic Enrollment Calculus AB AP



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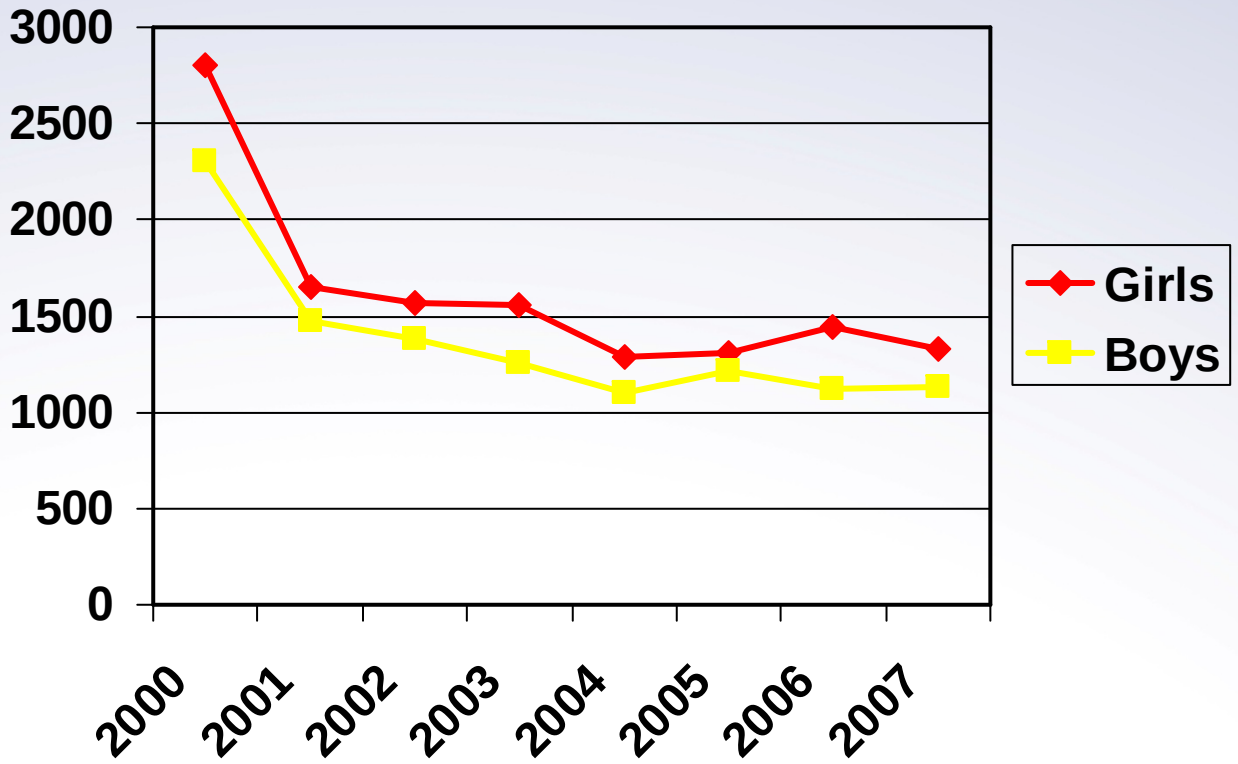
Secondary Academic Enrollment Mathematics AP



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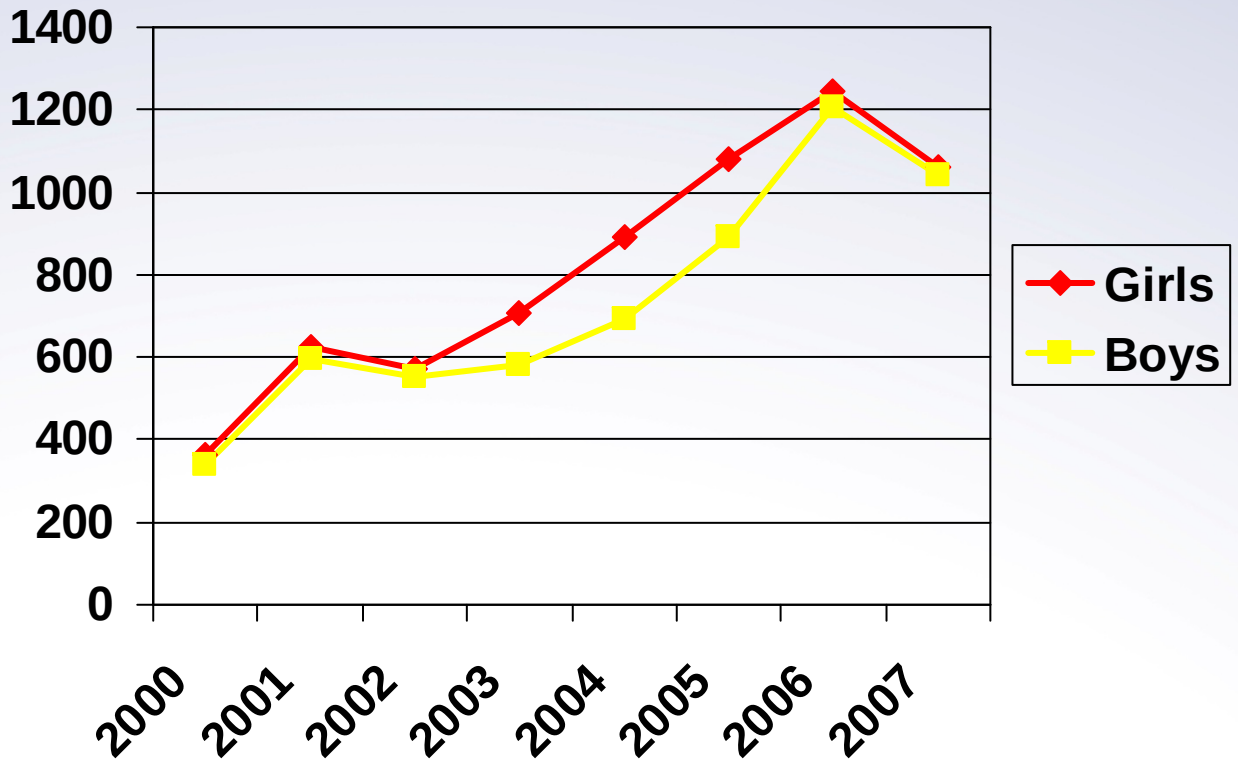
Secondary Academic Enrollment Statistics and Probability AP



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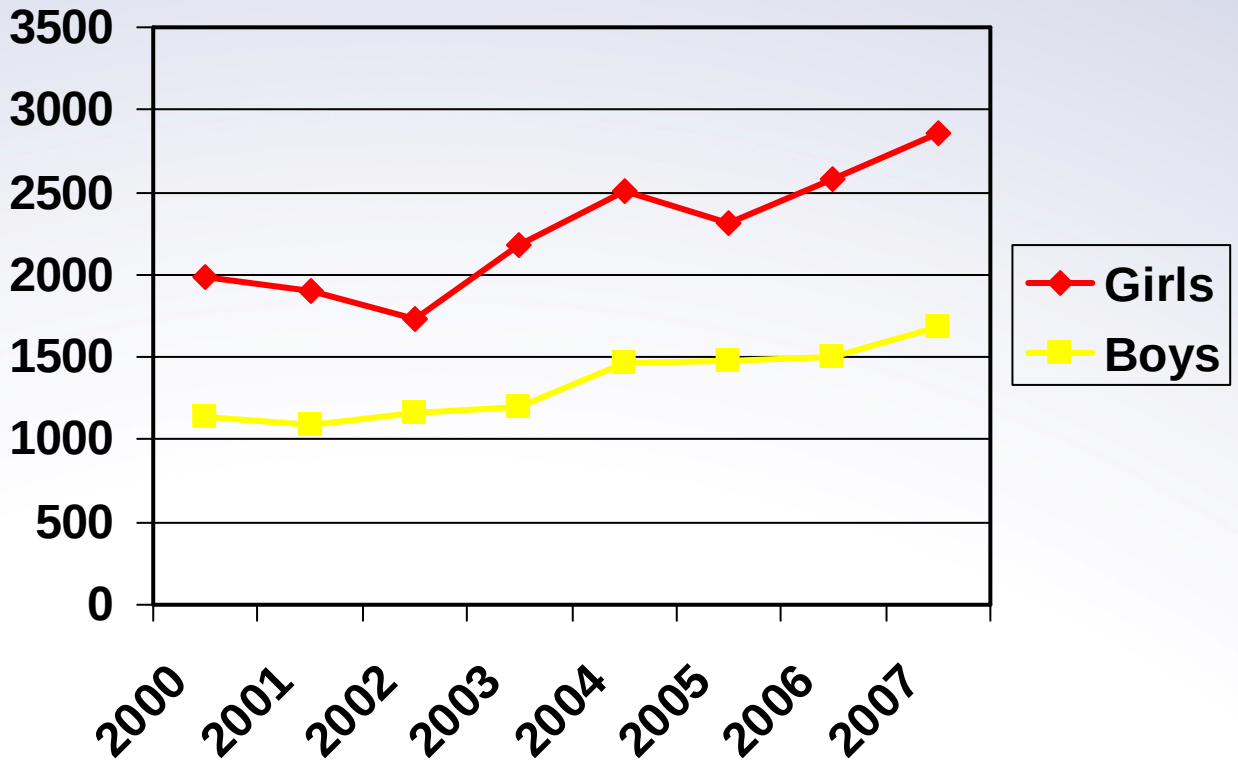
Secondary Academic Enrollment Biology AP



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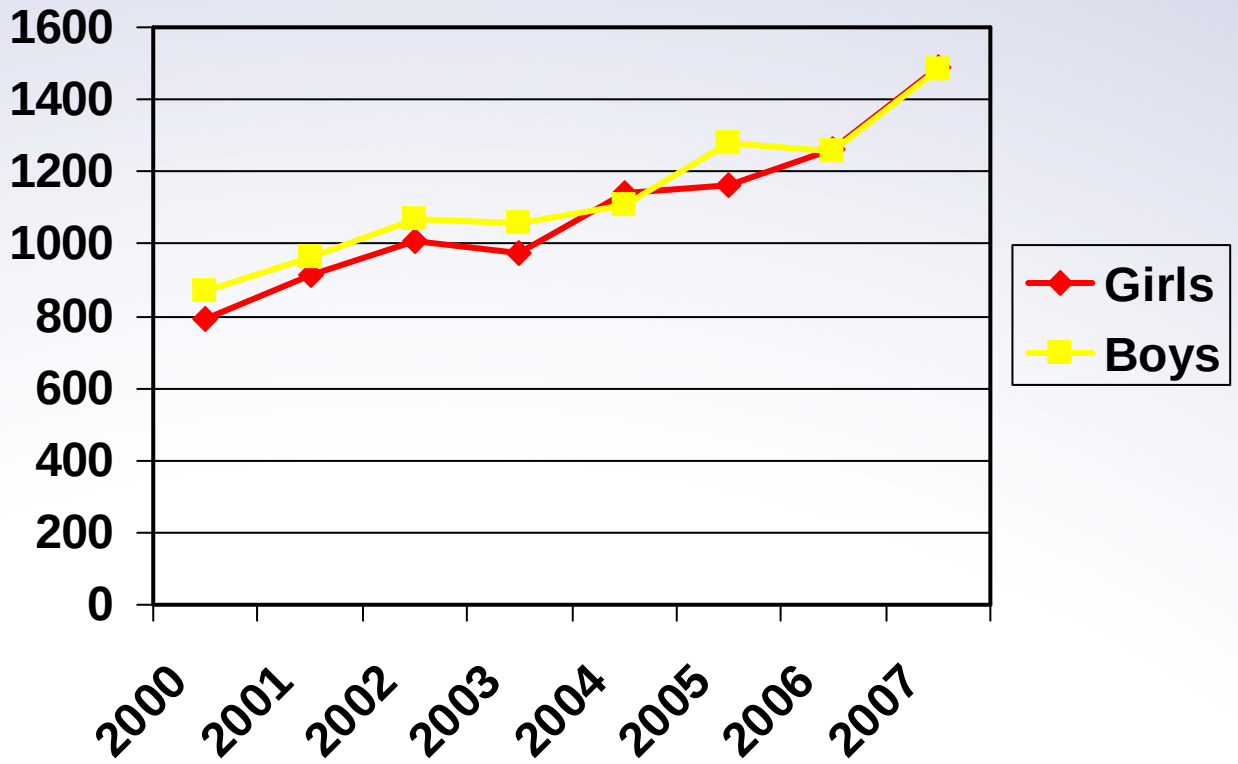
Secondary Academic Enrollment Chemistry AP



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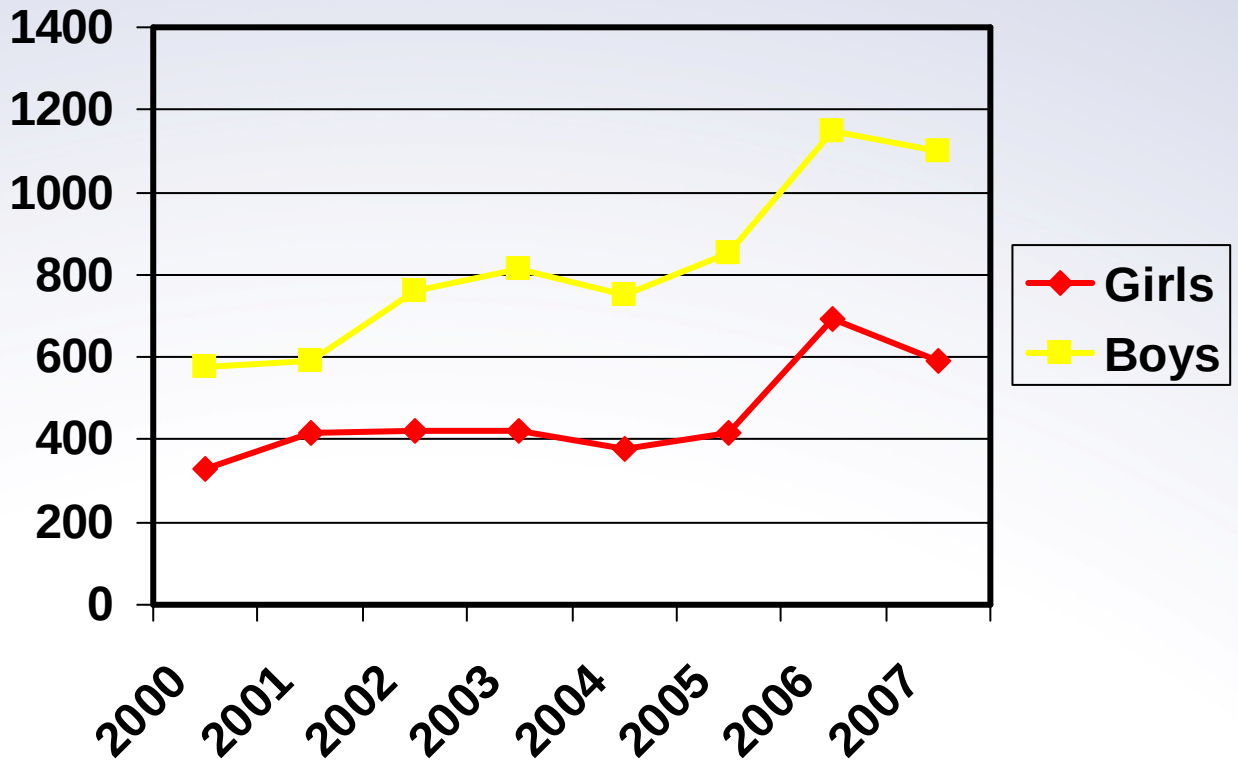
Secondary Academic Enrollment Physics AP



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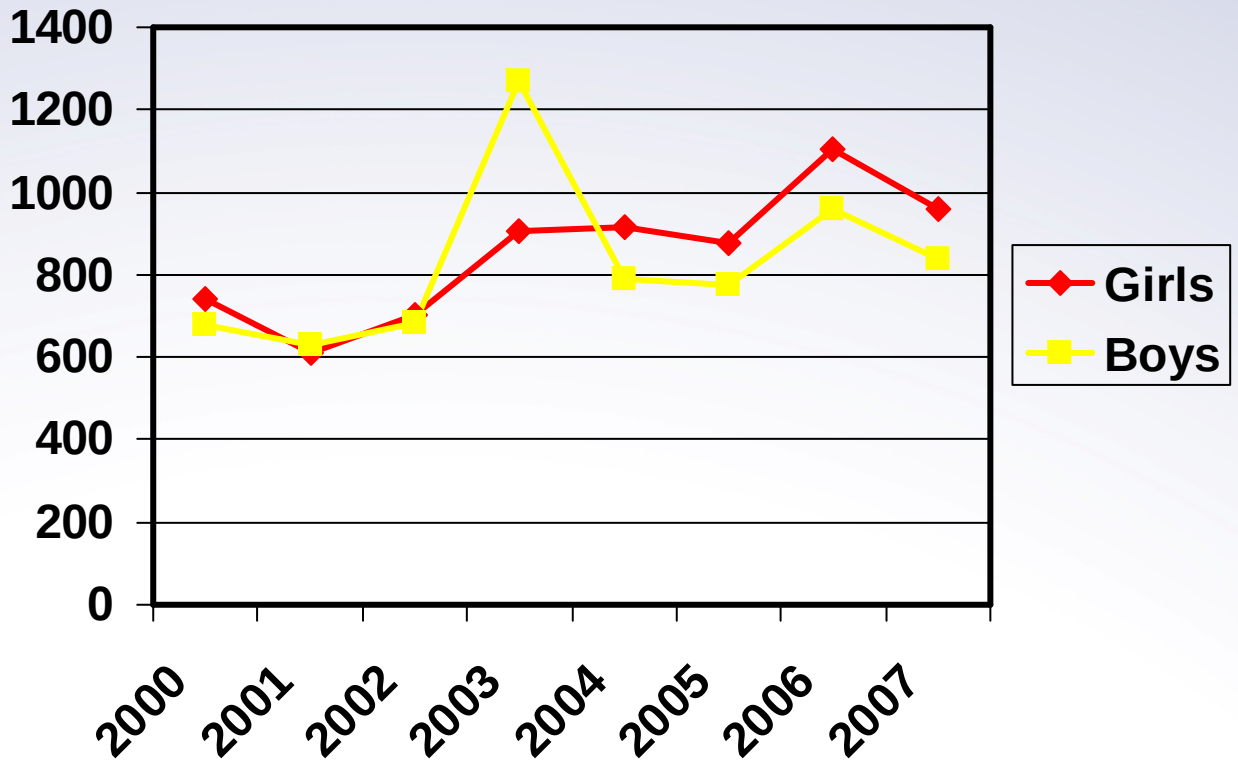
Secondary Academic Enrollment Biotechnology



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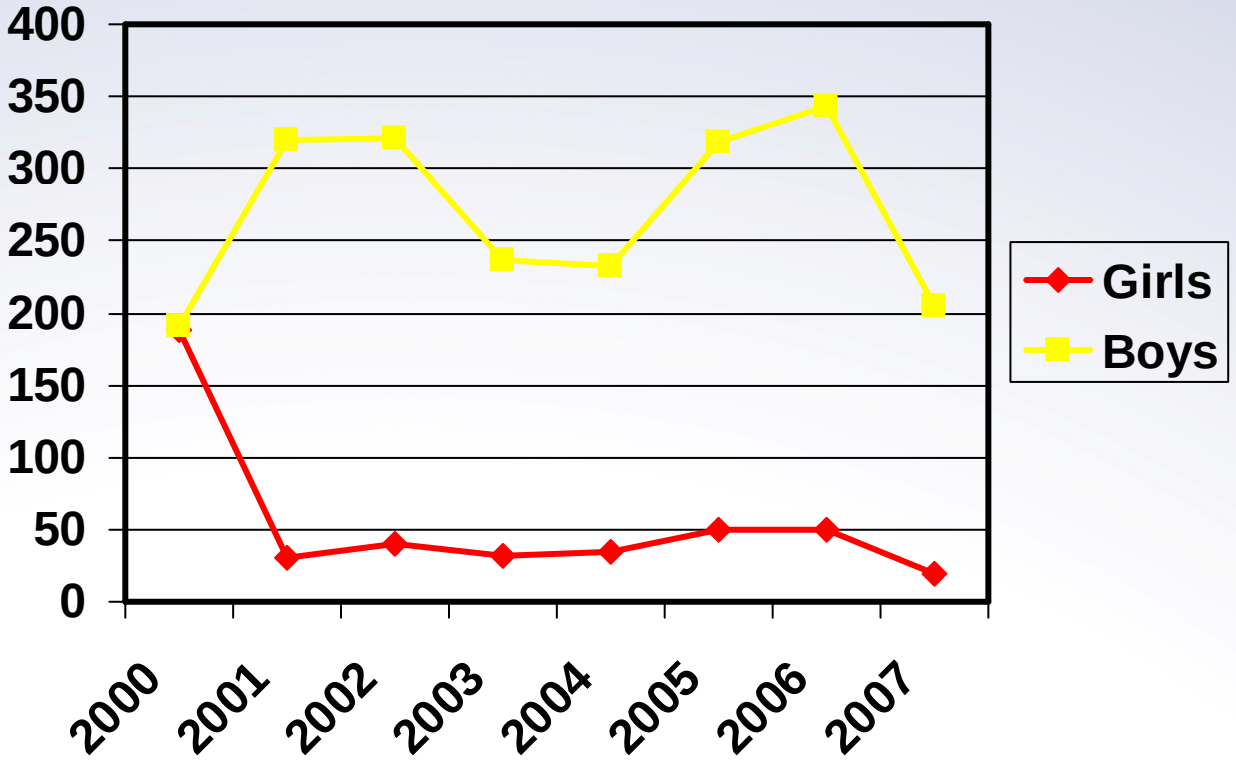
Secondary Academic Enrollment Aviation



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Worksheet Activity- case study

- Read the first page of the case study
- At the bottom of the sheet, you're asked:
  - What performance data should they review to help them identify their problem?
- Answer this through completing:
  - "Document Performance Results" section of "The Five Step Process Worksheet"
  - What data can you generate? Who would this task tell you information about? Where could you get it?
  - This data would help you identify initial problems about nontraditional program participation & completion

SAMPLE WORKSHEET: Document Performance Results

- Evaluate

TYPE	POPULATION	SOURCE	RESULT
Nontrad program enrollment	Disaggregated by gender	Principal or Registrar	
Graduate follow up results	Disaggregated by gender for all NT programs	Guidance Counselors	

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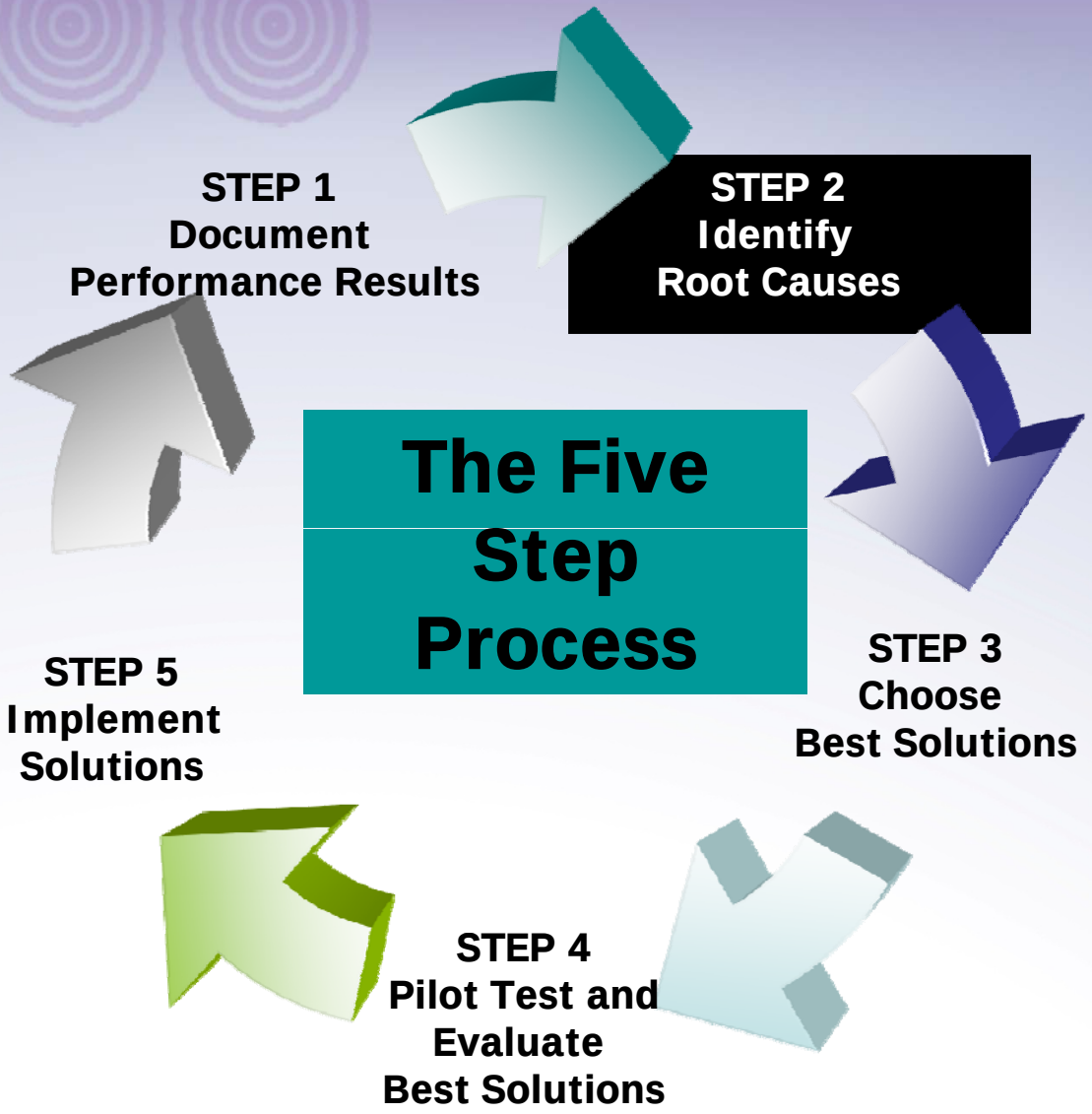
Annual Plan: Questions

1. What data resources exist and what supports are necessary?

2. How do you get locals to use data to inform program planning?



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STEP TWO

Identify

Root

Causes

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Why Search for Root Causes?

- Keep from fixating on the “silver bullet” strategy
- Identify the conditions or factors that cause or permit a performance gap to occur
  - Two types of causes:
    - Direct cause (i.e. instructional practice)
    - Indirect cause (i.e. teacher training)

How to Identify Root Causes

- Search for most direct & highest impact causes
- Employ a systematic evidence-based process
- Draw on current research and evaluation
- Formulate and test theories or hypotheses
- Use multiple methods and data sources
  - Note, you're likely to find multiple causes

Phase 1: Identify Potential Causes

- Analyze Student Data
- Review Research Literature
- Review Program/Institutional Evaluations and Effectiveness Reviews
- Conduct Focus Groups
- Peer Benchmarking
- Interviews & Surveys
- Brainstorm

Phase 2: Analyze and Evaluate Potential Causes

Group Causes Into Two Categories:

- ***Group 1: Causes Within Your Control***
  - School scheduling
  - Classroom climate
  - Faculty awareness and capacity
- ***Group 2: Causes Outside Your Control***
  - Media representation
  - Family demographics

Phase 3: Test and Evaluate Potential Causes Within Your Control

Select root causes that:

- Have the strongest theory and evidence to support them
- Focus on direct causes of performance gaps
- Address the most critical needs
- Provide the best opportunity to have high impact on performance
- Are supported by stakeholders who will help develop and implement solutions

Review Research Summary

Root Causes Tables

- Chapter 6 Tables 16, 17, 19, and 20 from, "*Improving Performance on Perkins III Core Indicators: Summary of Research on Causes and Improvement Strategies*"
- Authors: Robert Sheets, Mimi Lufkin, and David Stevens for the National Centers for Career & Technical Education
- Available at www.napequity.org

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Group Root Causes Activity

In groups of 5

- Review the root causes cards
- Rank the root causes by your group's sense of their prevalence for the retention of students in programs nontraditional by gender
- Post the cards on the wall in that order

Individual Root Causes Activity

- Place stickers on the posters for the four most significant root causes you have observed impacting whether students participate in nontraditional programs for their gender
- On the "other root causes" poster
  - Write any additional root causes that have not been identified

Worksheet Activity- case study

- Read the second page of the case study
  - The bulleted list is the “description of the problem” on “The Five Step Process Worksheet”
- At the bottom of the sheet, you’re asked:
  - What self-assessment strategies should they implement to discover the root causes for the problems they have discovered?
- Answer this through completing:
  - “Identify Root Causes” section of the worksheet
  - What methods will you use? Who would be the focus of each method? What person/group will implement it?

SAMPLE WORKSHEET: Identify Root Causes

METHOD	POPULATION	SOURCE	RESULT
Focus Group	Female students in the Cisco Academy	Career Counselor	
Individual Survey	Female PLTW graduates	Teacher	

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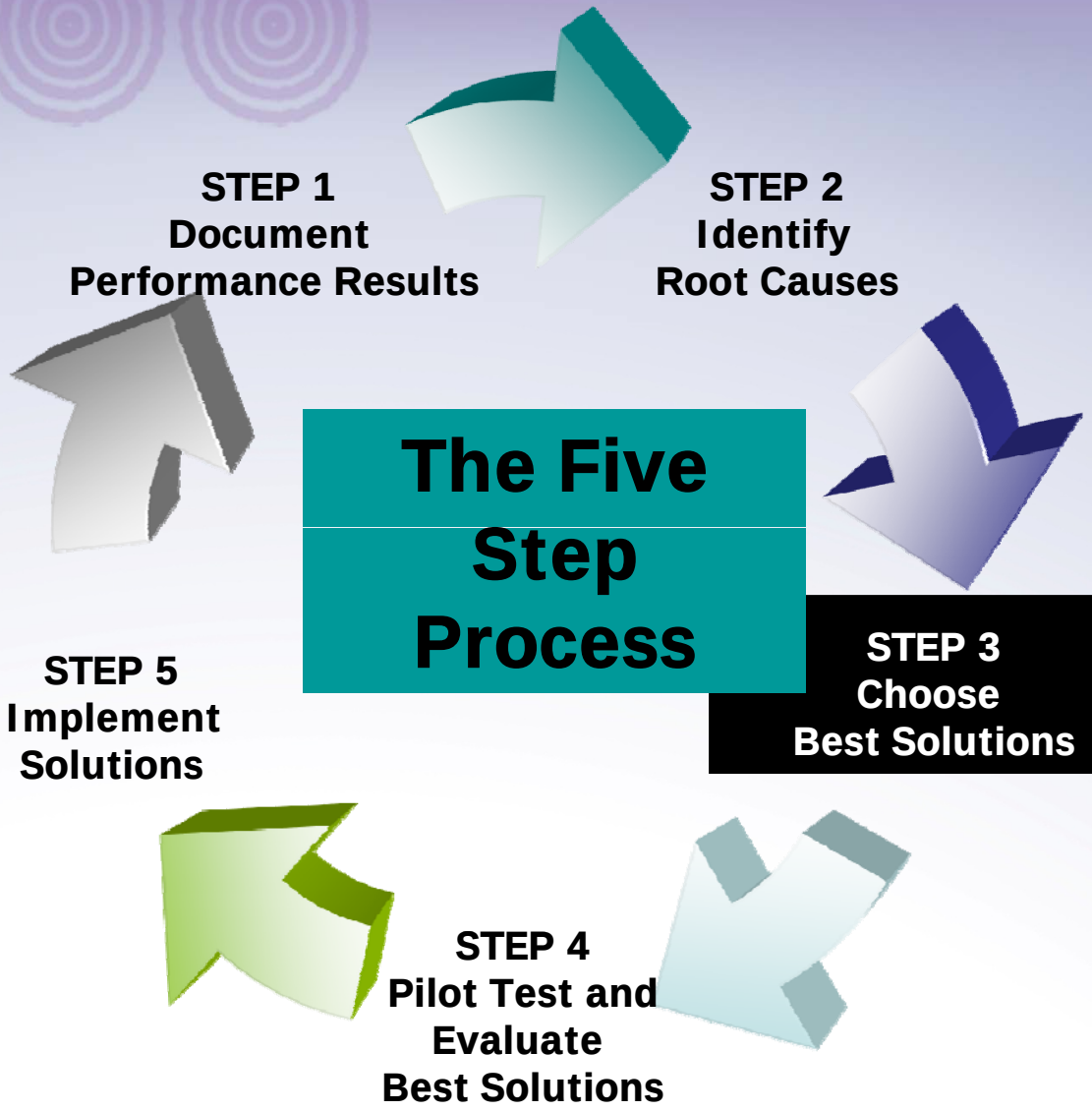
Annual Plan: Questions

3. What resources exist to assist locals in identifying root causes and what supports are necessary?

4. How do you get locals to identify problems and root causes?

The Five Step Process



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STEP THREE

Choose

Best

Solutions

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Choose Best Solutions

Don’t be too quick to adopt best practices before getting the facts straight

- How do you identify possible strategies and model practices?
- How do you evaluate strategies and models?
- How do you compare and assess alternative solutions and make a decision?

Find and Evaluate Solutions

- Failure is expensive
- Build consensus among staff and stakeholders
- Get full support and commitment
- Select full range of choices – be creative
- Implement systematic analysis

Identify Potential Strategies and Models

- Review What Others Propose
  - NSF- New Formulas for America's Workforce
- Benchmark Peers and Leading Performers
  - Programs and Practices That Work
  - Best Practices in STEM Education
  - EEES Best Practices
- Develop Your Own Solutions

Review Research Summary

Strategies

- Chapter 6 Tables 18 and 21
- Improving Performance on Perkins III Core Indicators: Summary of Research on Causes and Improvement Strategies
- Authors: Robert Sheets, Mimi Lufkin, and David Stevens for the National Centers for Career & Technical Education
- Available at www.napequity.org

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Assessing and Comparing Alternative Strategies

- Sound Theory
- Strong Evidence
- Costs/Time of Further Testing
- Resources
- Stakeholder Support

Strategies for Recruitment

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Strategies for Recruitment

- Review career guidance materials and practices for gender bias and nontraditional exposure and support
  - Guidelines for Identifying Bias in Curriculum and Materials

    Safe Schools Coalition
  - EEES-NAPE-PLTW Guidance Counselor Presentation
  - Am I a Fair Counselor

    Destination Success, MAVCC
  - Could This Be Your Life?

    Illinois Center for Specialized Professional Support

Strategies for Recruitment

- Invite, involve and educate parents

Talented Girls Bright Futures

Publication by Project Lead the Way

American Careers Magazine

Expanding Career Options Issue

Career Communications, Inc.

Strategies for Recruitment

- Conduct middle school programs

Minot Public Schools

Minot, North Dakota

Programs and Practices That Work

2005 Award Winner

Strategies for Recruitment

- Provide role models and mentors

Girls E-Mentoring in Science, Engineering and Technology GEM-SET

USDOL, Women's Bureau

Engineer Girl

National Academy of Engineering

Strategies for Recruitment

- Conduct targeted recruitment activities

Summer Camps

Cisco Gender Initiative Strategies

I am an Engineer

Cisco Systems, Inc.

Strategies for Recruitment

- Conduct pre-technical training programs

Rosies Girls

Northern New England Tradeswomen

TechBridge

Chabot Space and Science Center

Strategies for Recruitment

- Collaborate with community-based organizations

Operation SMART, Girls, Inc.

Expanding Your Horizons

Girl Scouts

National Girls Collaborative Project

Strategies for Recruitment

- Conduct professional development with teachers at all levels

Generating Expectations for Student Achievement, Graymill

STEM Equity Pipeline

Career Technical Education Equity Council

Strategies for Recruitment

- Implement and model gender-fair institutional strategies

Checking Your School for Sexism

Destination Success, MAVCC

Gender Equity Item Bank

Midwest Equity Assistance Center

Strategies for Retention

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Strategies for Retention

- Evaluate all school and curriculum materials for gender bias and positive nontraditional images

Gender Equity Tip Sheets

Bias Evaluation Instrument

Nova Scotia Department of Education

Curricular Bias, David Sadker

Strategies for Retention

- Increase teacher and administrator quality and equity-capacity through professional development

The Equity Principal

Graymill

NAPE Professional Development Institute

Washington, DC

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Strategies for Retention

- Increase competence in diversity and sexual harassment prevention

Gender Equity Tip Sheets

Tolerance.org

Southern Poverty Law Center

Project Implicit, Harvard University

Strategies for Retention

- Conduct nontraditional student support groups and peer counseling

Computer Clubhouse

Boston's Museum of Science

NASA Harriett G. Jenkins Pre-Doctoral Fellowship Program

(Facebook Group)

Strategies for Retention

- Provide nontraditional role models, mentors, and job shadowing

  IGNITE, Seattle Public School System

  MentorNet

  How to Plan and Facilitate a Job Shadowing Experience

  Destination Success, MAVCC

Strategies for Retention

- Invite, involve and educate parents

Trailblazers

VA Department of Education

Ways for Parents to Support Expanded Occupational Options

Destination Success, MAVCC

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Strategies for Retention

- Provide a continuum of support services
  - Tutoring
  - Child care
  - Transportation
  - Financial Aid
  - Books, Equipment, Tools, Clothing
  - Tuition
  - Modification of Curriculum, Equipment
  - Student/Teacher Aides
  - More

Strategies for Retention

- Invite, involve, and educate business

Cisco Systems, Inc. Gender Initiative

Cisco Systems, Inc.

Society of Women Engineers

Worksheet Activity- case study

- Read the third page of the case study
  - Any item from the bulleted list could be recorded as a "description of a root cause" on the worksheet
- At the bottom of the sheet, you're asked:
  - What strategies could they implement to …?
- Answer this through completing:
  - "Select a Potential Strategy" section of the worksheet
  - Select some strategies that could impact your root cause theory. Brainstorm advantages and disadvantages for each strategy. In the "Results" column, record "yes"/ "no" depending if it's a strategy you want to consider piloting.

SAMPLE WORKSHEET: Select a Potential Strategy

STRATEGY	ADVANTAGES	DISADVANTAGES	RESULT
Mentoring	Effective, Existing to be added to	Difficult to find NT mentors	YES
NT Career Fair	Experience, Location and Facilities, Business support	Has not impacted enrollment enough in past	NO

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Worksheet Activity- case study

- Look at the “Summary” table at the bottom of “The Five Step Process Worksheet”

- In the first three columns, summarize the results of the first three of the five step process:
  - Step 1: Describe a problem (“problem” column)
  - Step 2: Identify a root cause (“root cause” column)
  - Step 3: Select a solution (“strategy” column)

- In column four:
  - record a measurable “Goal” that you want to achieve

SAMPLE WORKSHEET: Summary

Problem	Root Cause	Strategy	Goal
Low female enrollment in high school PLTW program	Nontrad role models	Conduct pre-technical training program using nontrad role models	Three females enrolled after completing pre-technical training program

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The Five Step Process

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Expanding Options for Women and Girls in Science, Technology, Engineering and Math

Questions?

National Alliance for Partnerships in Equity

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