

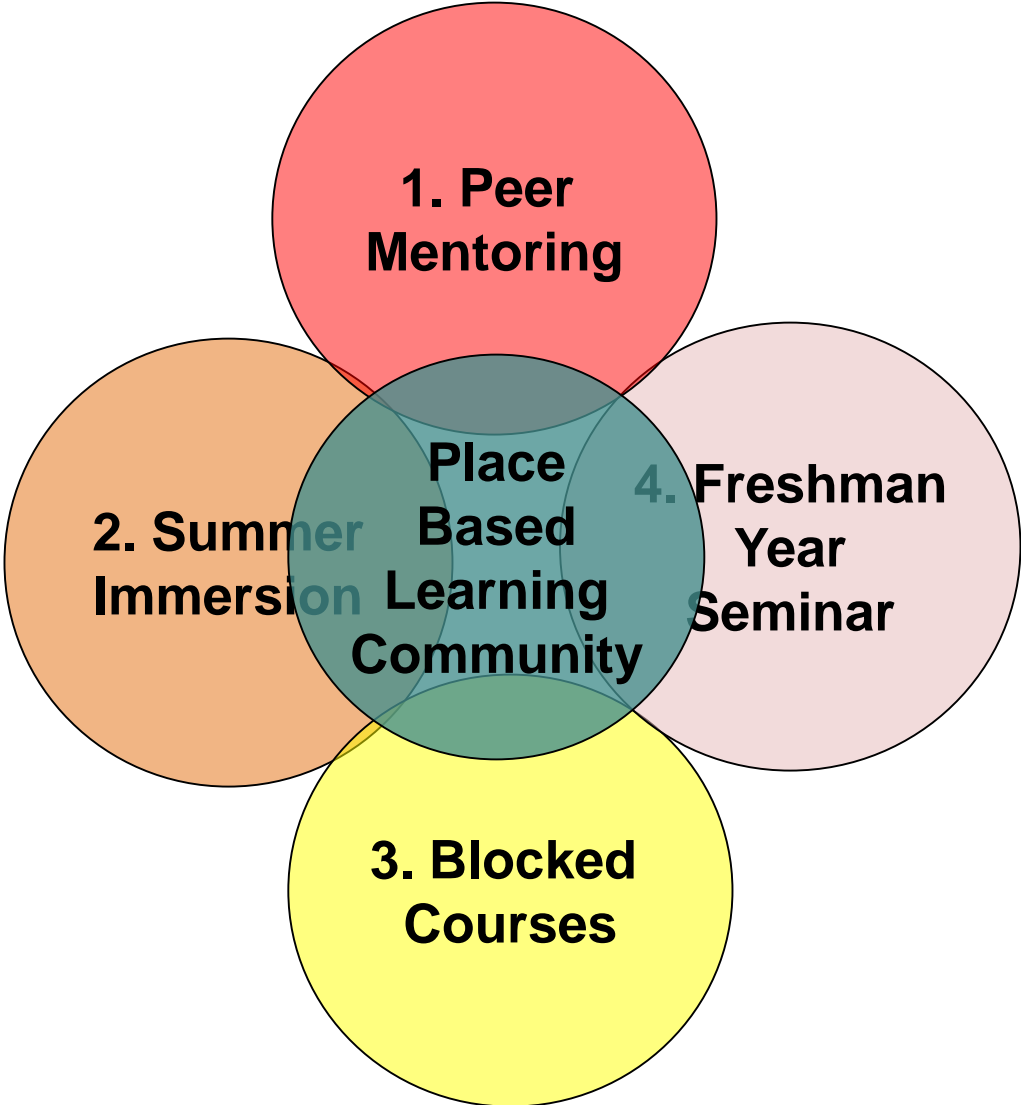


HUMBOLDT STATE UNIVERSITY

# KLAMATH CONNECTION PROGRAM



# Klamath Connection Integrates Four HIPs with a Place-Based Theme



# KLAMATH CONNECTION PROGRAM

## Is an Experiment

- 1<sup>st</sup> cohort (15/16) – 63 student, grant funded
  - BIO, ENVS, WLDF, ZOOL
- 2<sup>nd</sup> cohort (16/17) – 118 students, funding 50:50
  - Added BOT, ERE and FISH
- 3<sup>rd</sup> cohort (17/18) – ~120 students, HSU funded



BIOLOGICAL  
SCIENCES

WILDLIFE



Zoology



# Assessment



## 63 Students in 1<sup>st</sup> cohort:

- BIOL, ENVS, WLDF, ZOOL only
- None needing math remediation (2<sup>nd</sup> cohort includes them)
- % first-gen, % low-income, region of origin, and HS GPA statistically similar to non KC freshmen in focus majors
- Higher (but still low) % Native Am.
- Lower % Latin@



*The Summer Immersion significantly cultivated community*

**% agreeing or strongly agreeing**

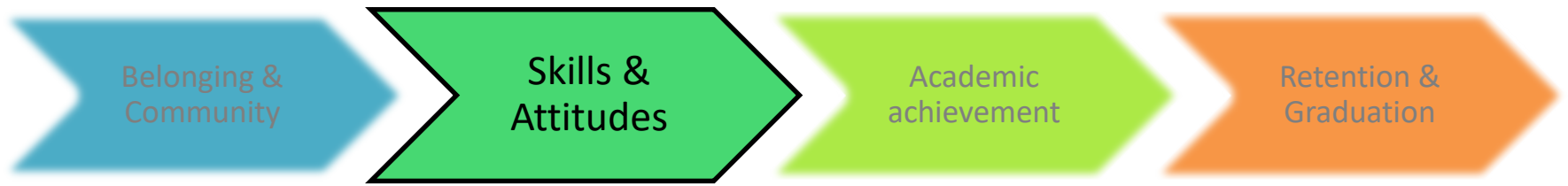
<b>Belonging &amp; Community</b>	<b>Klamath Connection</b>	<b>Reference</b>	<b><math>\chi^2</math></b>
I feel connected to other students in my freshman year seminar.	74.6	36.2	$P < 0.01$
I am aware of campus resources that can help me complete my goal of a Bachelor of Science degree.	95.2	82.4	$P = 0.02$
I feel part of the HSU community.	88.9	70.2	$P = 0.02$
I am inspired to be a scientist.	91.8	83.6	$P = 0.06$
I am optimistic about my future in science.	95.2	84.1	$P = 0.04$
I am worried that science might not be for me. (score is % disagreeing or strongly disagreeing)	93.3	64.6	$P < 0.01$



*Belonging & community grew more for KC than non-KC students*



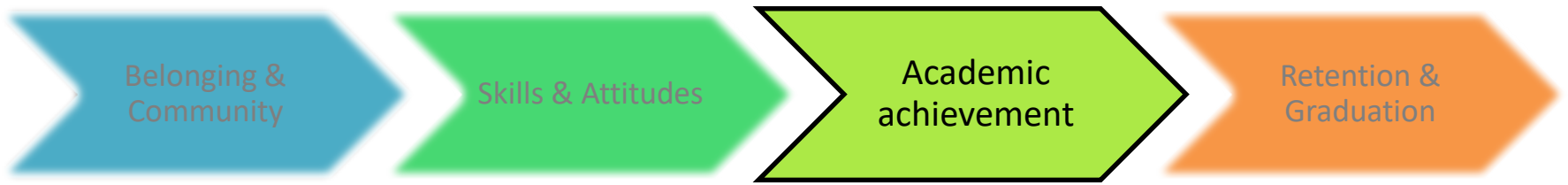
<b>MapWorks Factor; Spring</b>	<b>Klamath Connection</b>	<b>Reference</b>	<b>Mann-Whitney U</b>
<b>Commitment to the Institution</b>	47.1	33.1	<i>P</i> < 0.01
<b>Peer Connections</b>	41.4	33.9	
<b>Homesickness: Separation</b>	38.0	31.1	
<b>Homesickness: Distressed</b>	34.2	33.2	
<b>Academic Integration</b>	39.7	34.1	
<b>Social Integration</b>	48.4	29.7	<i>P</i> < 0.01
<b>Satisfaction with Institution</b>	47.1	30.3	<i>P</i> < 0.01
<b>On-Campus Living: Social Aspects</b>	34.8	28.8	
<b>On-Campus Living: Environment</b>	31.8	30.5	
<b>Campus Living: Roommate Relationship</b>	25.9	27.7	



*Skills & attitudes grew favorably in KC than non-KC students*



<b>MapWorks Factor; Spring</b>	<b>Klamath Connection</b>	<b>Reference</b>	<b>Mann-Whitney U</b>
<b>Self-Assessment: Communication Skills</b>	38.7	36.9	
<b>Self-Assessment: Analytical Skills</b>	42.2	35.0	
<b>Self-Assessment: Self-Discipline</b>	46.4	34.7	<i>P</i> < 0.01
<b>Self-Assessment: Time Management</b>	41.9	35.2	
<b>Basic Academic Behaviors</b>	37.9	38.0	
<b>Advanced Academic Behaviors</b>	43.0	34.5	
<b>Academic Self-Efficacy</b>	42.2	35.0	
<b>Academic Resiliency</b>	35.6	38.5	
<b>Test Anxiety</b>	45.3	33.3	<i>P</i> = 0.02
<b>Advanced Study Skills</b>	37.7	37.4	

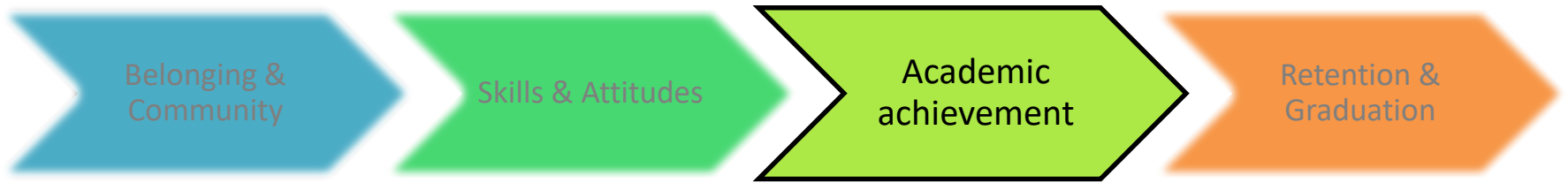


## Analytical comparisons

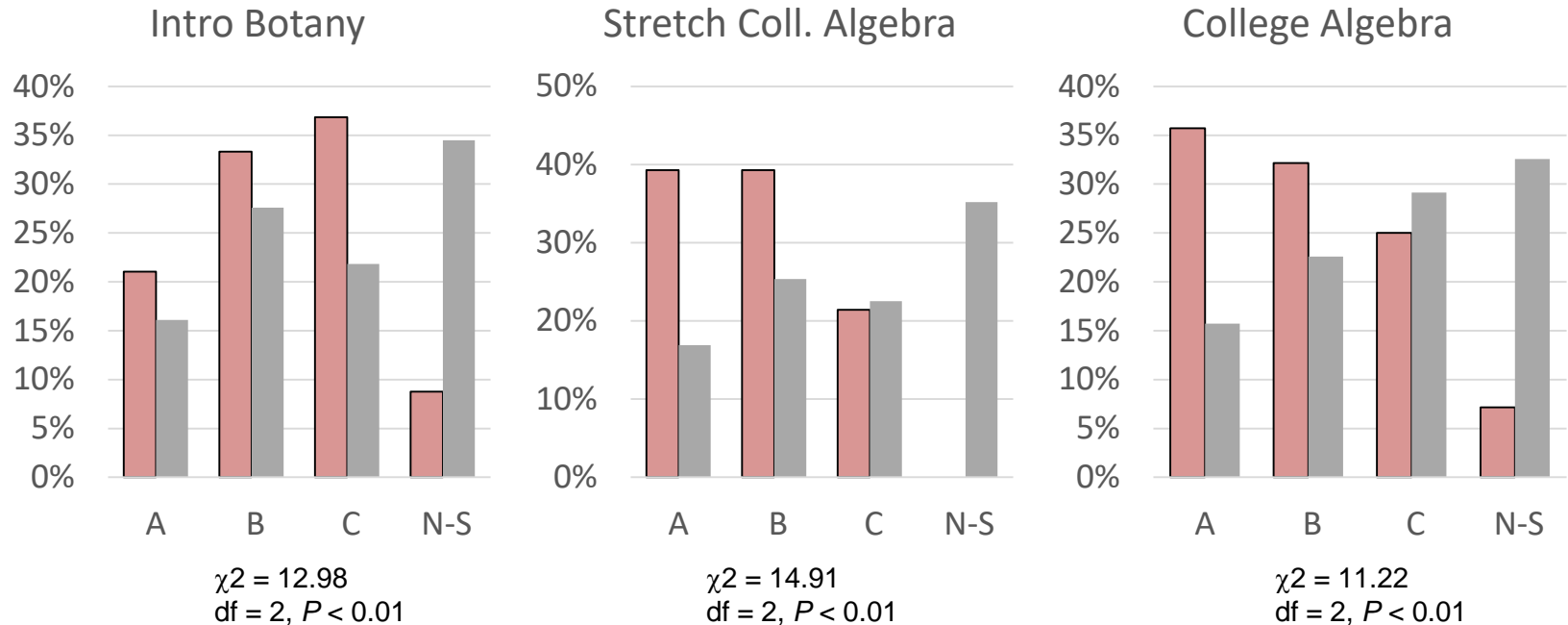
Fall Courses	Section	Instructor	Covariate
Intro Botany	Mixed	Same	High School GPA
Oral Comm.	Separate	Same	
Fresh. Yr. Seminar	Separate	Same	
College Algebra	Separate	Different	
Stretch Col. Algebra	Separate	Different	
Critical Thinking	Separate	Different	

Spring Courses	Section	Instructor	Covariate
Intro/Fund. Chemistry	Mixed	Same	High School GPA
Intro Wildlife	Mixed	Same	

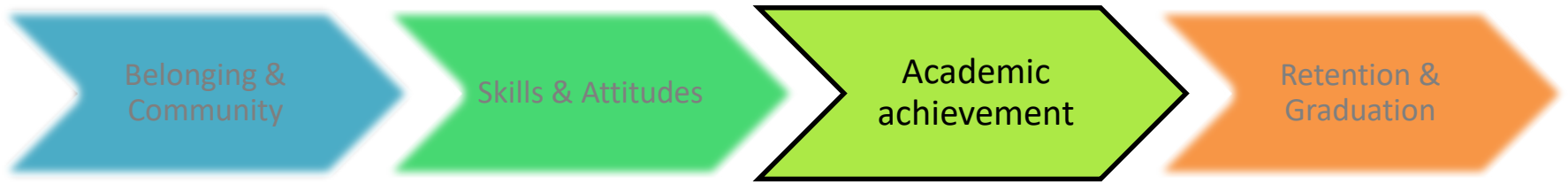




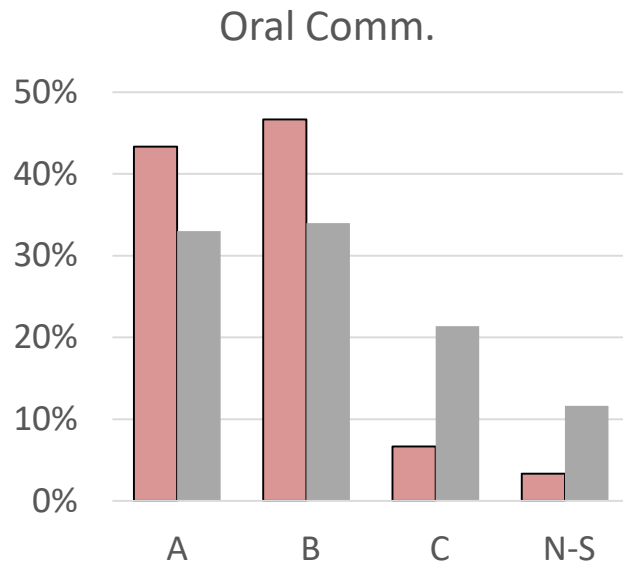
## KC students scored higher in core science & math courses



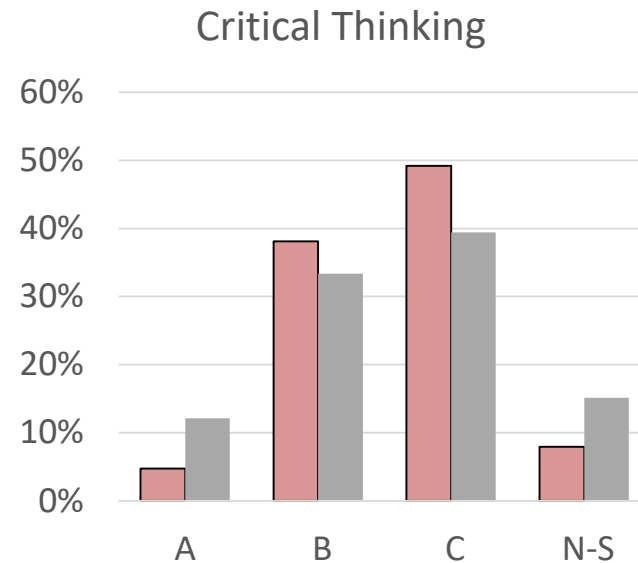
 KC students  
 Non-KC students



## KC students scored higher in general education courses



$\chi^2 = 10.84$   
df = 2,  $P < 0.01$

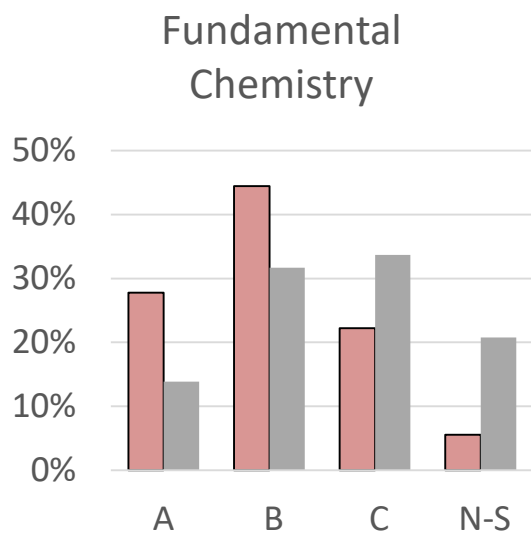


$\chi^2 = 1.57$   
df = 2,  $P = 0.46$

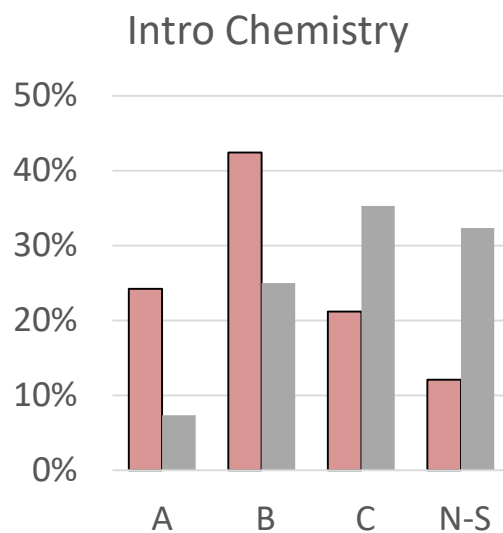
 KC students  
 Non-KC students



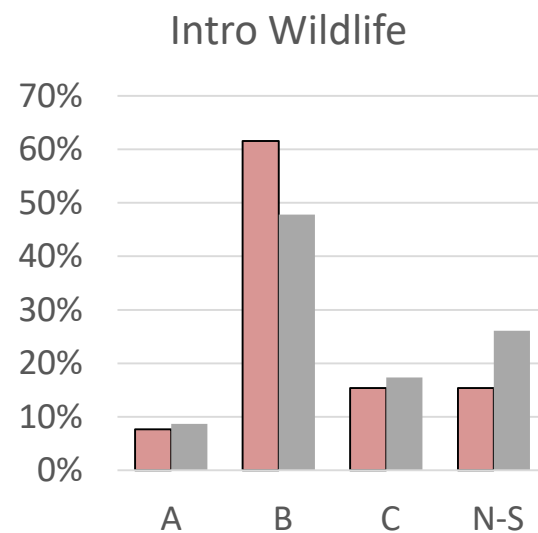
## KC student success continued into Spring term...



$\chi^2 = 4.74$   
df = 2,  $P = 0.09$



$\chi^2 = 40.90$   
df = 2,  $P < 0.01$

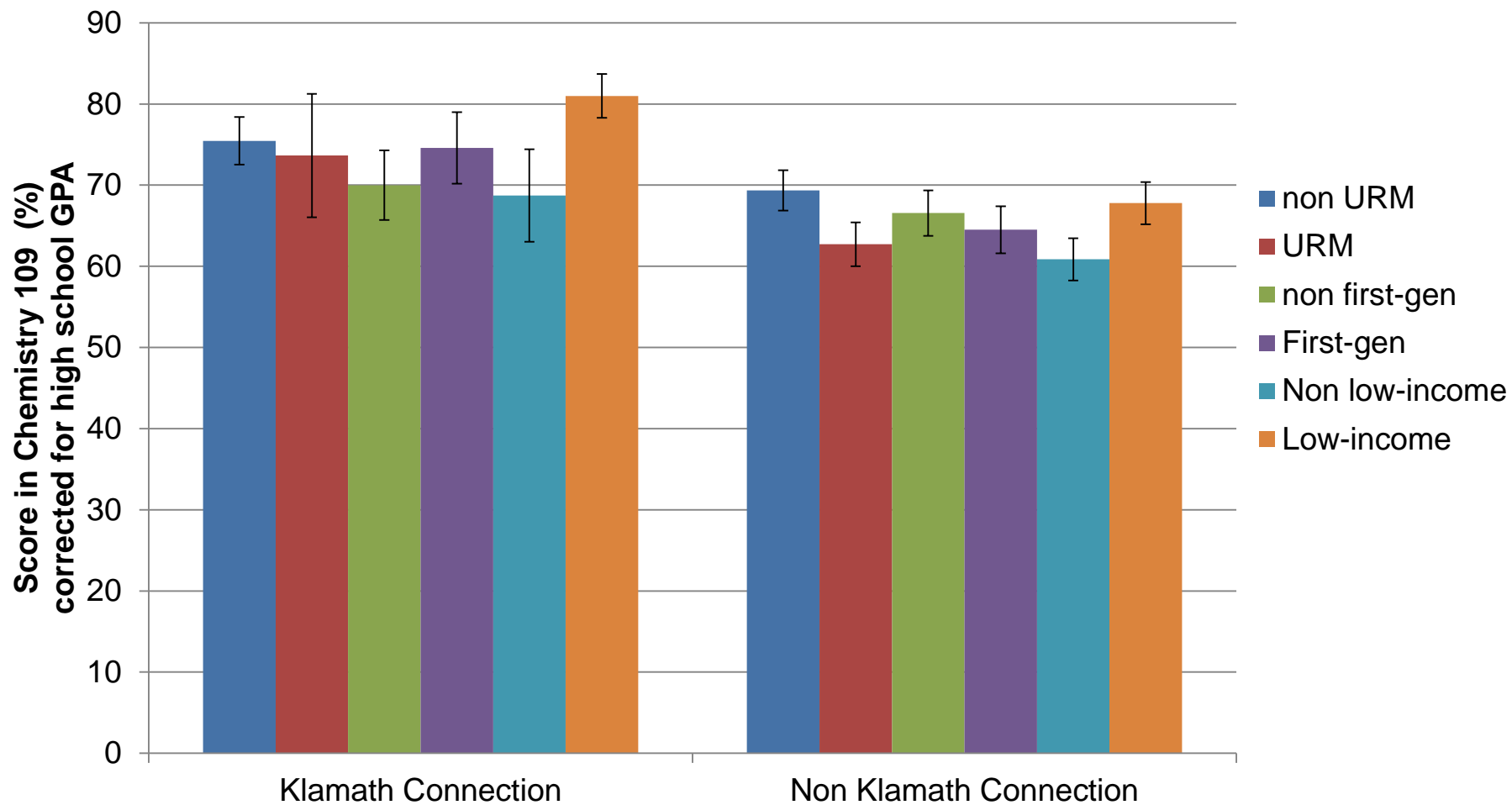


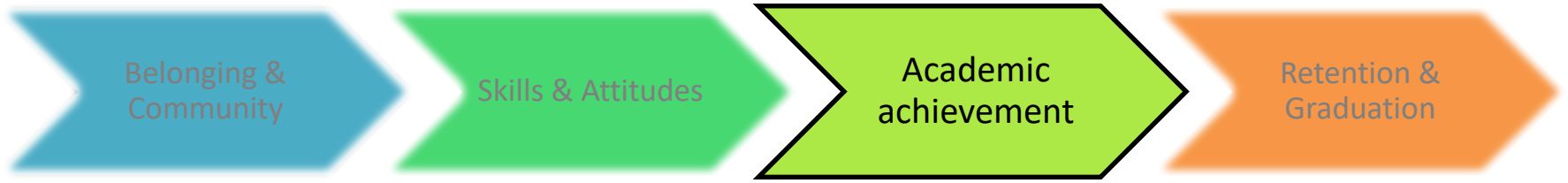
$\chi^2 = 0.67$   
df = 2,  $P = 0.72$

 KC students  
 Non-KC students

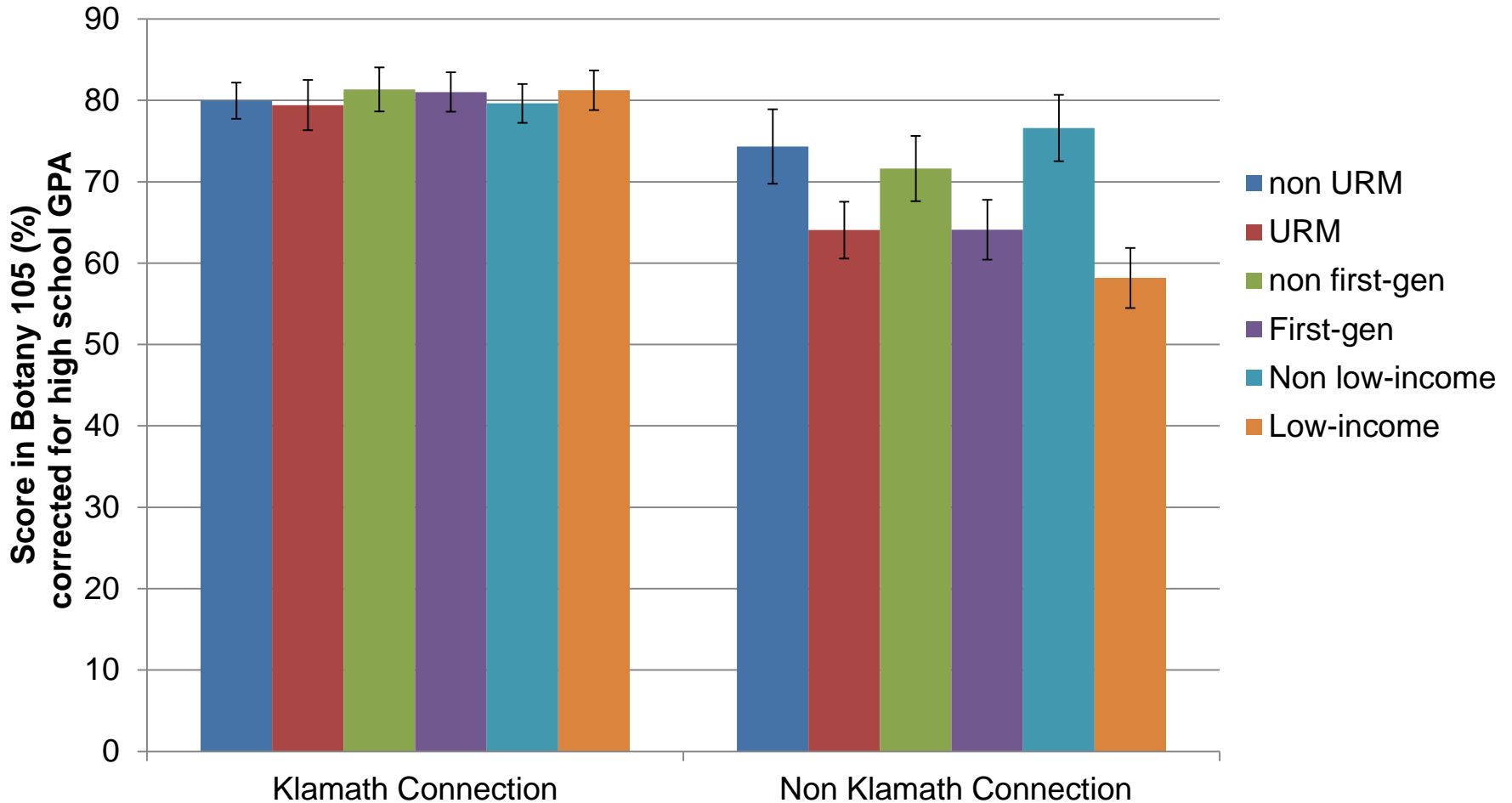


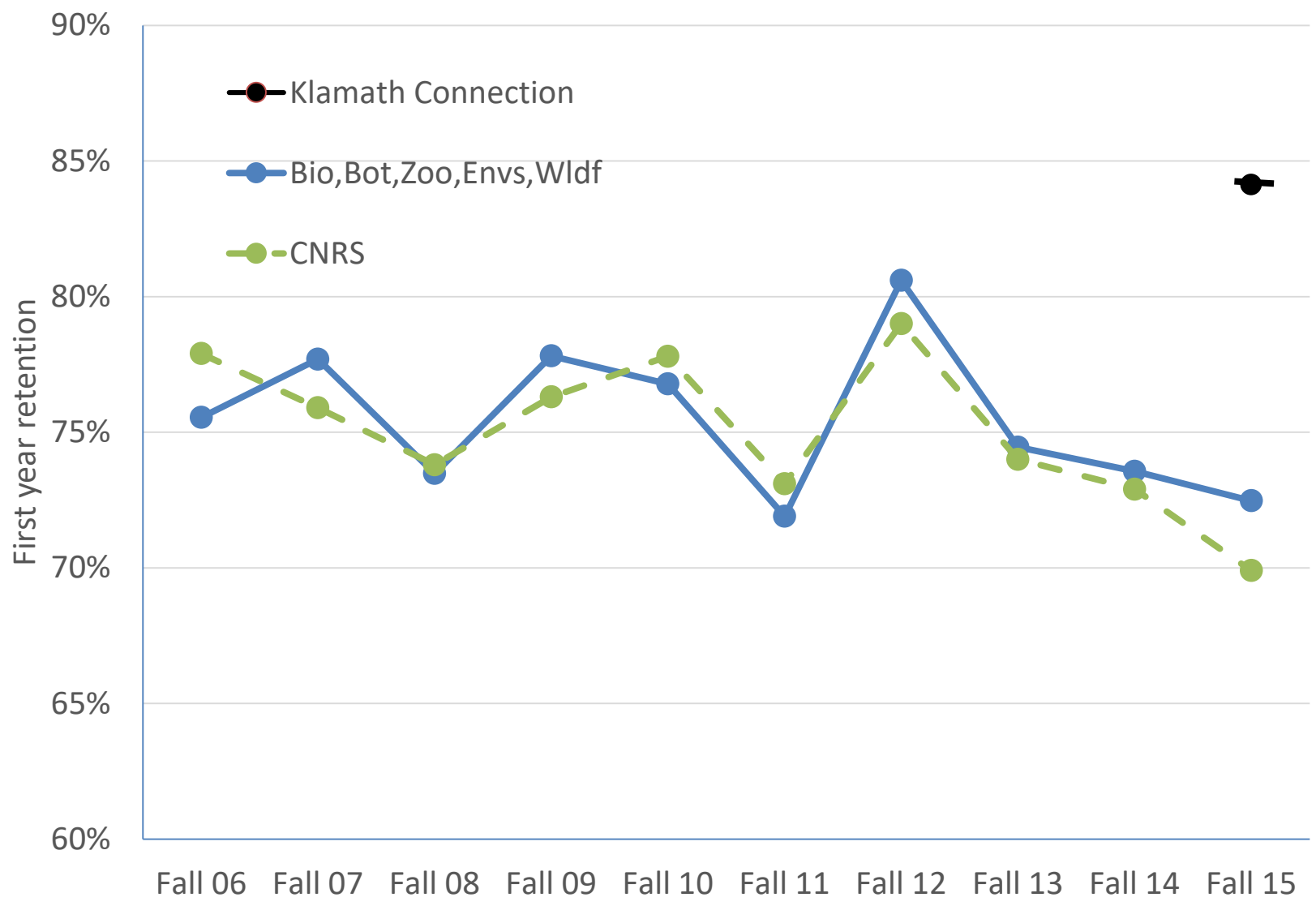
## KC raised grades in Intro Chemistry





## KC raised grades and eliminated gaps in Intro Botany







***Summary:*** *When compared to non KC freshman of the same major, KC students:*

- Reported increased self efficacy, sense of belonging, and improved study skills and habits (Mapworks)
- Had higher final scores and lower non-success rates in Core Science and Math courses as well as GEs
  - Botany, Chemistry, Math, Comm 100
- Had diminished gaps in course scores between student groups
- Had higher first year GPAs (2.77 vs 2.47)
- Had lower rates of academic probation (11% vs. 32%)
- Completed more units toward degree (14.5 vs. 11.1)
- Increased retention into the second year
  - 84% vs. 72%

# Caveats


- Gaps in grades reduced, retention gaps lingers
- “Hawthorne effect”
- Self-selection
  - No sig difs in composition of participants and non-participants
  - No difs in fall MapWorks survey of belonging, skills, and attitudes (difs emerged by spring)
  - HS GPA as covariate
- ‘Group thinking’





*A new majority*

67%



# The HSI STEM Grant 2016/17 – 2020/2021

## Increase URM STEM Graduates with 4 Primary Activities

Expansion of PBLCs

Increased  
articulation and  
recruitment with HSI  
Community Colleges

Enhanced and  
Integrated Tutoring  
Services

Co-Requisite Math

# Expansion of PBLCs

Proposed (tentative) expansion of PBLCs

Proposed Community Name	Associated Majors	# incoming Freshmen	16-17 <sup>2</sup>	17-18	18-19	19-20	20-21
Klamath Connection	Env. Science, Fisheries, Forestry, Range, Wildlife	210	100	100	100	160	160
Klamath Connection	Env. Engineering	45		20	20	40	40
Stars to Rocks	Chemistry, Physics, Geology (+Math & Comp. Sci?)	50			20	20	40
?	Biology (except Marine), Botany, Zoology	130			60	100	100
?	Oceanography, Marine Biology	95				40	80
<b>Total # students</b>		<b>530</b>	<b>100</b>	<b>120</b>	<b>200</b>	<b>360</b>	<b>420 (80%)</b>

HUMBOLDT STATE UNIVERSITY

# STARS To ROCKS

← **HSU**

Chemistry • Geology • Physics & Astronomy

# Streamline Transfer with HSI Community Colleges



Major cluster	Av. # transfers per year	% Hispanic
Natural Resource Sciences	180	35%
Life Sciences	241	49%
Engineering	42	41%
Earth, Ocean, and Physical Sciences	52	48%
Math and Computer Science	13	61%
<b>Total</b>	<b>528</b>	<b>44%</b>

# Improving and Expanding Tutoring Services for Gateway STEM courses

Gateway Course	Success Rate (AY '13-14 – '15/16)		Existing Tutoring Offerings
	Not URM	URM	(Y/N)
<i>Introductory Courses</i>			
BOT 105 General Botany	72%	61%	Y
CHEM 107 Fundamentals of Chem	86%	76%	Y
CHEM 109 General Chem I	83%	68%	Y
MATH 105 Calculus/Bio Sci and Nat Res	71%	68%	Y
MATH 109 Calculus I	72%	55%	Y
MATH 113 College Algebra	70%	61%	Y
MATH 115 Algebra and Elem. Functions	73%	62%	Y
OCN 109 Intro to Oceanography	86%	73%	N
<i>Intermediate Courses</i>			
BIOL340 Genetics	80%	71%	Y
BIOL330 Plant Ecology	87%	77%	Y
BIOL350 Plant Taxonomy	79%	68%	Y
CHEM 321 Organic Chemistry	90%	71%	N
CHEM 328 Brief Organic Chemistry	74%	65%	N
ZOOL 312 Human Anatomy	91%	75%	N
ZOOL 356 Mammalogy	71%	69%	N



# NEED HELP?

## Learning Center

**SUPPLEMENTAL INSTRUCTION**  
Available for students in:  
BIOLOGY, CHEM, ENG & SAS  
COMPUTER, ECON, LIT & SOC  
NURSING, PSYCH, SOC, LING  
PHYED, POL, MATH, LEE  
and more!

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Open to all students  
Courses:  
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Free Walk-in Tutoring  
Library 1 - First  
Mon: 10:00 AM - 6:00 PM  
Tue: 10:00 AM - 6:00 PM  
Wed: 10:00 AM - 6:00 PM  
Thu: 10:00 AM - 6:00 PM  
Fri: 10:00 AM - 6:00 PM  
Sat: 10:00 AM - 6:00 PM  
Sun: 10:00 AM - 6:00 PM



# Co-Curricular Approach to Developmental Math

- 27% of incoming STEM students need math remediation
- Higher for URM (42%) and low-income (38%)
- Leaky pipeline: for every 100 students needing remediation
  - 47 complete college algebra
  - 23 complete calculus

Student group (% needing math remediation)	Need	1 <sup>st</sup> year retention	6-year graduation rate
Non-Hispanic (23%)	No math remediation	80%	55%
	Math remediation	71%	39%
Hispanic (39%)	No math remediation	74%	38%
	Math remediation	73%	34%
Not Low-income (22%)	No math remediation	81%	54%
	Math remediation	72%	39%
Low-income (38%)	No math remediation	75%	43%
	Math remediation	76%	36%





<http://www2.humboldt.edu/klamathconnection/>

<https://drive.google.com/file/d/0B1ob9nzSkQTIRzRBVGY5Sk02aGs/view>