



# **The Influence of a Summer Bridge Program on College Adjustment and Success: The Importance of Early Intervention and Creating a Sense of Community**

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# Presentation Overview

- Summer Bridge at IUPUI (the Context)
- Summer Bridge Theoretical Framework
- Assessment
- Recommended Strategies



## IUPUI Context

- Large urban, commuter, public university.
- Large number of under-prepared first-year students (33% are admitted conditionally).
- 59% of fall first-year students are first-generation college students (neither parent completed a four year college degree).
- 30% of first-time, full-time students report that they plan to work more than 20 hours per week while attending school
- 76% commute to campus.



# University College

- Academic unit formed in 1998
- Houses numerous first-year programs
- Serves Over 8000 students



# Essential Elements Of Summer Bridge

- Two-week program for incoming freshmen held in August before fall classes begin
- Open to students in specific majors
- Students are divided into groups of 25 based on their interest in pursuing a particular major or in exploring various major options
- Provides a collegiate-level curriculum
- Creates communities of entering students
- Offered free to participants
- Required for all First Generation Scholarship award winners beginning fall 2006
- Weekend program introduced in fall 2006 for First-Generation Scholars



# First-Generation Scholars Fall 2006

- Admitted by March 1, 2006
- Minimum high school cumulative GPA of 3.0 on a 4.0 scale
- Minimum SAT (math and critical reasoning sections only) score of 1000 or a composite ACT score of 21.
- First in their family of origin who will graduate with a bachelor's degree.
- As a condition of their scholarship (which provides them with a \$1,500 annual award for 4-years) they are required to attend the IUPUI Summer Bridge Academy Program.



## **COMMUNITY around learning**

- Uses the powerful elements of learning communities
- Builds strong peer connections
- Provides opportunities for collaborative learning
- Emphasizes multi-disciplinary perspectives
- Incorporates positive interactions with faculty, advisors, and librarians
- Provides individualized support for math
- Connects students with a school and major



# Instructional Teams



- Faculty
- Advisor
- Librarian
- Student Mentor





# Participating Schools

Business  
Education  
Engineering  
Liberal Arts  
Nursing  
Science  
University College

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**Application Materials Inside!!**

IUPUI



# Learning Outcomes

- Develop a comprehensive perspective on higher education
- Develop a community of learners
- Develop communication skills
- Develop critical thinking skills
- Develop study skills
- Develop college adjustment skills
- Understand the demands and expectations of college
- Understand and use university resources
- Understand information technology



# Underlying Theories Guiding Bridge Programs

## ❖ Academic integration:

- The development of a strong affiliation with the college academic environment both in the classroom and outside of class. Includes interactions with faculty, academic staff, and peers but of an academic nature (e.g., peer tutoring, study groups) (Nora, 1993)

## ❖ Social integration:

- The development of a strong affiliation with the college social environment both in the classroom and outside of class. Includes interactions with faculty, academic staff, and peers but of a social nature (e.g., peer group interactions, informal contact with faculty, involvement in organizations) ((Nora, 1993).



# Underlying Theories Guiding Bridge Programs

## ❖ Academic Self-Efficacy

- Students' evaluation of their competence to successfully execute academic tasks necessary to reach desired outcomes (Zajacova, Lynch, Espenshade. 2005; Bandura, 1993).

## ❖ Social Learning Theory

- "Human behavior can be learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action." (Bandura, 1977, p. 22).



# Curriculum

- Writing
- Math
- Communication Studies
- Critical thinking
- Transition skills
- Study skills
- Introduction to major



# Why Assess Summer Bridge Program

- Demonstrate worth and value
- Learn about impacts and goal achievement
- Contribute to course development and improvement
- Obtain student feedback



# Assessment Methods

- Quantitative Analyses of Academic Success  
Outcomes: Retention and Grade Point Averages
  - Quasi-Experimental Designs
  - Examine participants compared to non-participants with regard to academic performance and retention while statistically controlling for background differences
  - Covariates: H.S percentile ranks, SAT scores, Units of H.S math, course load, gender, ethnicity, first-generation, campus housing, other program participation (seminars and Themed Learning Communities).
  - Linear Regression, Logistic Regression, Analyses of Covariance
  - Matched control groups established



# Research Questions

- Do SB participants have higher levels of academic success (retention rates and first semester grade point averages) compared to non-participants even while controlling for pre-college academic preparation variables, background characteristics, and other program participation?
- Do the most at-risk students (e.g., conditionally admitted students) benefit from the program and experience higher levels of academic success compared to non-participating at-risk students?
- Do first-generation scholars (with high levels of academic preparation) benefit from participating in the SB program? Does adding a program component to gift aid increase their levels of academic success?





# Research Questions

- Do students react positively to the program in terms of self-reported learning outcomes in the following areas: critical thinking, academic skills, study skills, knowledge of campus resources, college adjustment, awareness of college expectations, quality of instructional team/faculty interactions, social integration, and sense of community?
- What factors most significantly predict overall satisfaction with the program when considering self-reported program attributes and outcomes?
- Were there differences in students' perceptions of the program and self-reported learning outcomes as a function of the year the students participated in the program?



# Limitations

- No experimental control group (not randomly assigned). Self-selection bias is an issue.
- Maturation could account for the results.
- Correlational research – can't infer cause and effect relationships
- Common method variance may have contributed to the results.
- Effect sizes were small.



# Characteristics of 2005 Cohort

- 175 Students Participated
- 70% Women
- 9% African American
- 53% First-Generation College Student
- 18% First-Generation Scholars
- 22% Admitted Conditionally
- 1016 Average SAT Score
- 69% Average High School Percentile Rank
- 39% Campus Housing
- 18-19 Primary Ages. Average=18.17



# Characteristics of Fall 2006 Two-Week Cohort

- 209 Students Participated
- 71% Women
- 8% African American
- 89% First-Generation College Student
- 70% First-Generation Scholars
- 7% Admitted Conditionally
- 1000 Average SAT Score
- 75% Average High School Percentile Rank
- 27% Campus Housing
- 18-19 Primary Ages. Average=18.75



# Characteristics of Fall 2006 Weekend Bridge Cohort

- 47 Participated
- 77% Women
- 4% African American
- 98% First-Generation College Student
- 98% First-Generation Scholars
- 1 Student Admitted Conditionally
- 978 Average SAT Score
- 76% Average High School Percentile Rank
- 51% Campus Housing
- 18-19 Primary Ages. Average=18.75



# Characteristics of Fall 2007 Two-Week Cohort

- 361 Students Participated
- 72% Women
- 7% African American
- 91% First-Generation College Student
- 78% First-Generation Scholars
- 10% Admitted Conditionally
- 982 Average SAT Score
- 3.31 Average High School GPA
- 34% Campus Housing
- 18-19 Primary Ages. Average=18.77



# Characteristics of Fall 2007 Weekend Bridge Cohort

- 68 Participated
- 78% Women
- 16% African American
- 99% First-Generation College Student
- 91% First-Generation Scholars
- 1 Student Admitted Conditionally
- 1009 Average SAT Score
- 3.40 Average High School GPA
- 40% Campus Housing
- 18-19 Primary Ages. Average=18.86



## Impact of Participation 2005

Type of Admit	Summer Bridge	N	Fall GPA	Adjusted Fall GPA
Regular	Participants	120	2.94	<b>2.87</b>
	Non-Participants	858	2.65	<b>2.68</b>
	Overall	978	2.69	
Conditional	Participants	33	2.61	<b>2.59</b>
	Non-Participants	461	2.06	<b>2.06</b>
	Overall	494	2.09	





## Impact of Participation 2005

Type of Admit		N	Average Adjusted Retention
Regular	Participants	127	74%
	Non-Participants	936	70%
	Overall	1263 (70%)	
Conditional	Participants	32	<b>77%</b>
	Non-Participants	480	<b>56%</b>
	Overall	612 (57%)	

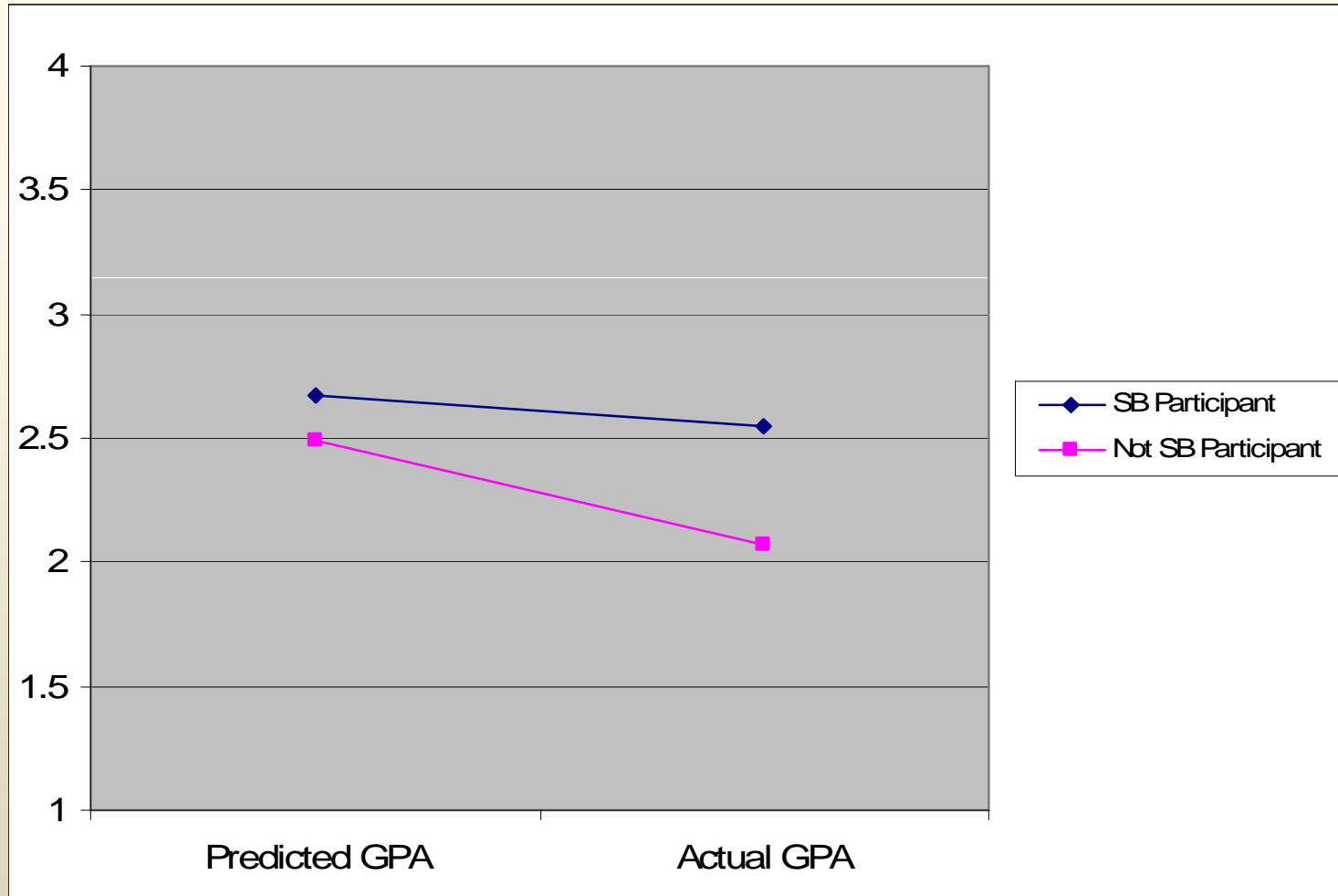


## Two-Week Summer Bridge Participants Compared to Non-Bridge Participants: Conditional Admits

	N	Avg. Fall GPA	Avg. Predicted GPA <sup>a</sup>	Difference	% below a 2.0 GPA	Fall to Fall Retention Rate IU
2005 Bridge	37	2.53	2.66	-0.12	27%	78%
No-Bridge	648	2.08	2.49	-0.40	41%	53%
2006 Bridge	15	1.58	2.40	-0.81	53%	40%
No Bridge	713	2.08	2.26	-0.16	41%	53%
2007 Bridge	36	2.11	2.21	-0.06	29%	n/a
No Bridge	639	2.15	2.29	-0.14	37%	n/a

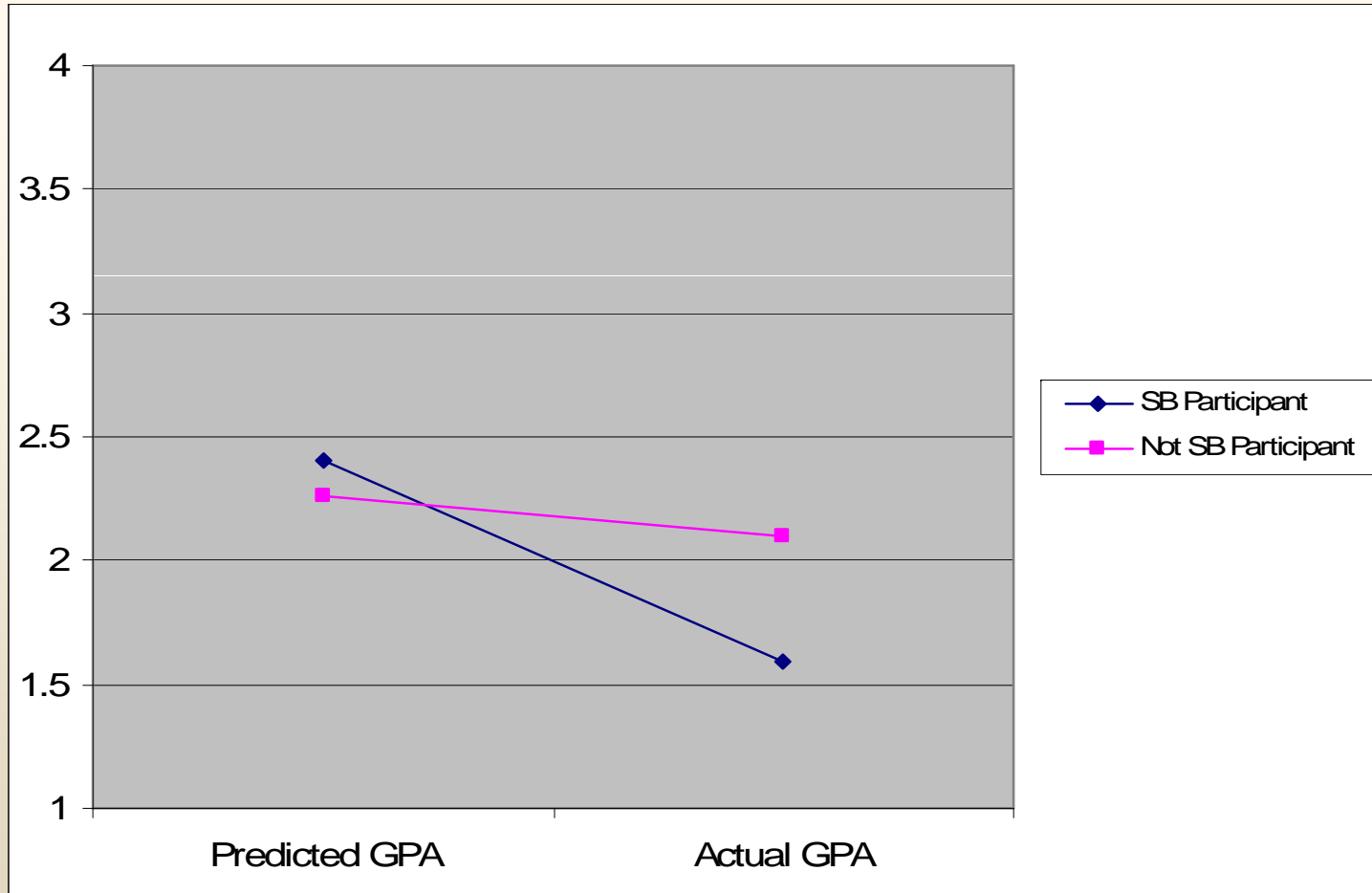


## Conditional Admits Predicted vs. Actual GPAs 2005



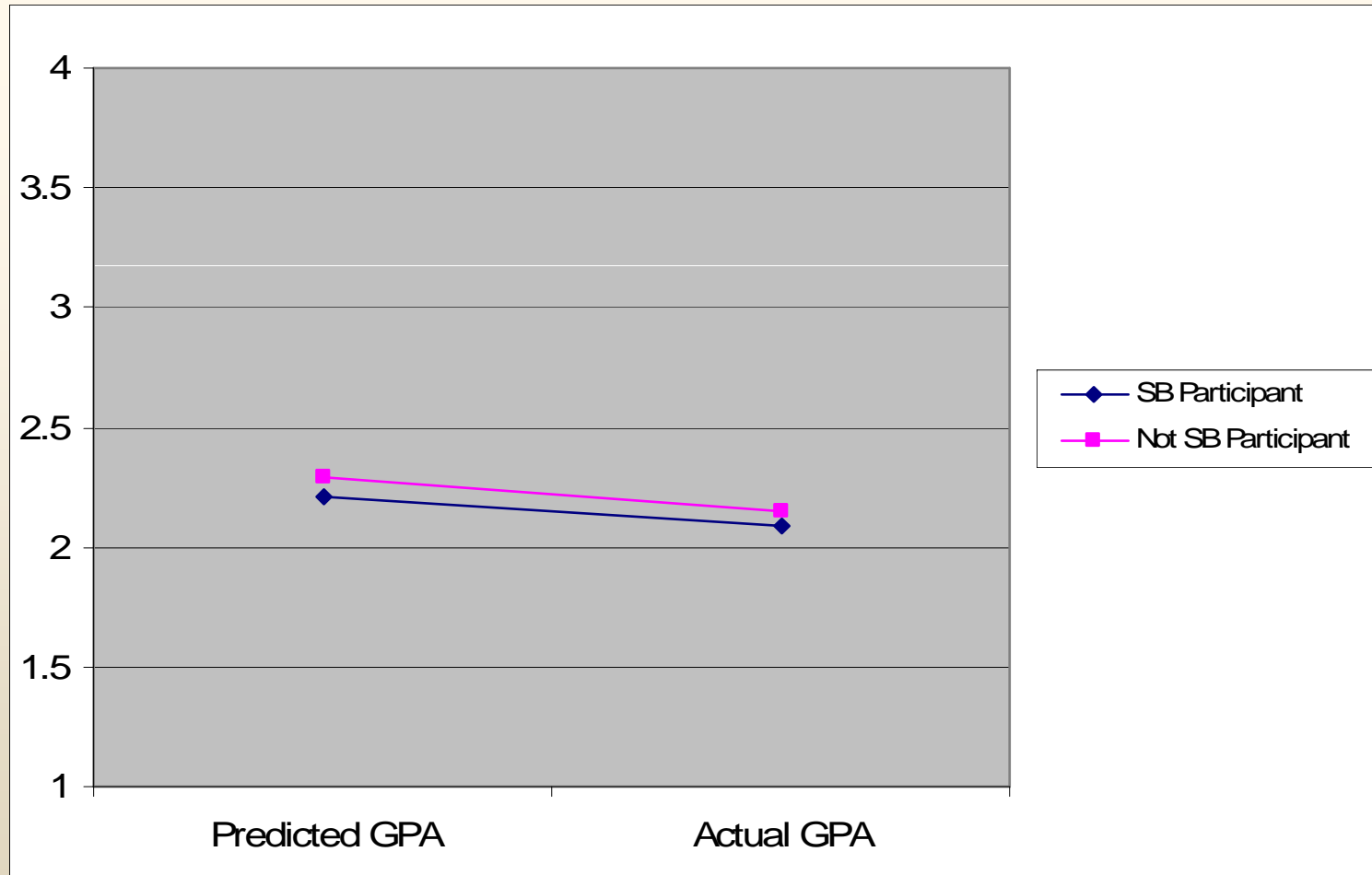


## Conditional Admits Predicted vs. Actual GPAs 2006





## Conditional Admits Predicted vs. Actual GPAs 2007



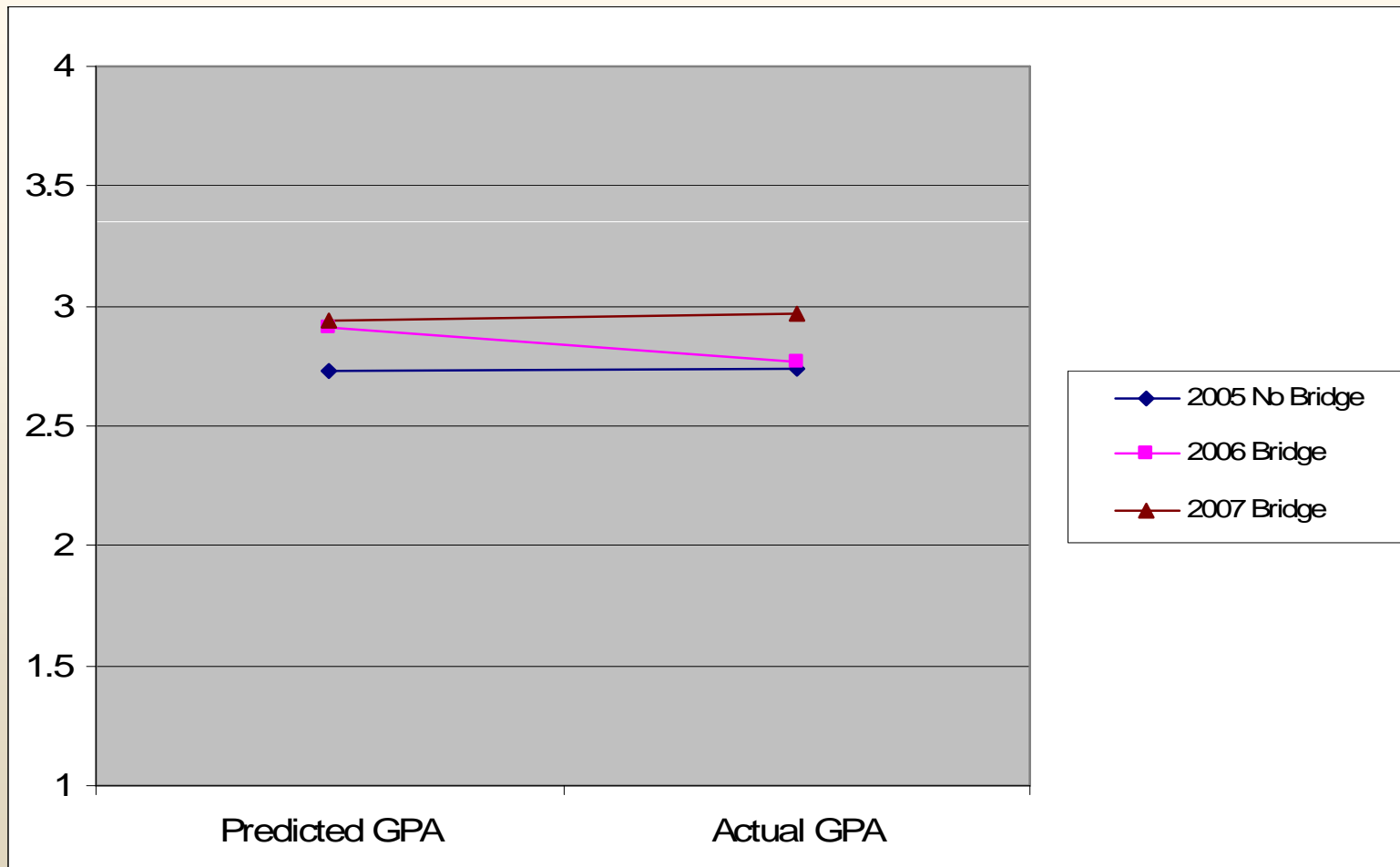


## Impact of Participation in the Summer Bridge Program (First-Generation Scholars)

	N	Avg. Fall GPA	Avg. Predicted GPA <sup>a</sup>	Difference	% below a 2.0 GPA	Fall to Fall Retention Rate IU
2005 NO Bridge	114	2.77	2.73	0.01	19%	73%
2006 Two-Week Bridge	147	2.78	2.91	-0.12	14%	72%
2006 Weekend Bridge	46	2.78	2.94	-0.81	15%	70%
No Bridge	50	2.66	2.94	-0.16	20%	70%
2007 Two-Week Bridge	281	2.96	2.94	0.03	11%	n/a
2007 Weekend Bridge	62	2.96	3.00	-0.04	15%	n/a
No Bridge	12	2.59	2.93	-0.34	17%	n/a



# First Generation Scholars Summer Bridge vs. No Bridge





## Hierarchical Multiple Regression: 2007 Two Week Summer Bridge and GPA

<i>Step</i>	<i>Variables</i>	<i>Std. Beta</i>	<i>t</i>	<i>Prob.</i>	<i>df</i>	<i>R<sup>2</sup> Change</i>
1	Course load	.13	5.90	.0001	4, 1976	.204
	SAT score	.07	2.76	.0001		
	High School GPA	.34	14.33	.0001		
	Female	.07	3.50	.0001		
2	Summer Bridge	.06	3.08	.002	1, 1975	.004
	F-value = 103.78					
	Adj R <sup>2</sup> = .21					





## 2007 Bridge-Themed Learning Community Combination has Positive Effects

	N	Avg. Fall GPA	Avg. Predicted GPA	Difference	% below a 2.0 GPA	DFW Rate
Bridge-TLC	200	2.96	2.86	0.11	11%	13.13%
TLC	354	2.71	2.69	0.03	16%	18.16%



	N	Average Fall GPA	Avg. Predicted GPA <sup>a</sup>	Difference
Business Bridge	35	2.97	2.94	0.01
Business Seminar	287	2.47	2.69	-0.21
Education Bridge	23	2.84	2.78	0.04
Education TLC	44	3.05	2.57	0.48
ENGR Bridge	20	2.46	2.93	-0.48
ENGR Seminar	119	2.59	2.96	-0.44
Nursing Bridge	69	3.33	2.87	0.28
Nursing Majors	216	2.57	2.68	-0.12
Psychology Bridge	18	2.33	2.74	-0.33
Psychology Majors	65	2.31	2.76	-0.48
Liberal Arts Bridge	23	2.78	2.93	-0.12
Liberal Arts Seminar	42	2.70	2.73	-0.11
Science Bridge	56	2.77	2.99	-0.22
Science Seminar	173	2.57	3.20	-0.61
Public and Env. Affairs Bridge	18	2.47	2.73	-0.26
Public and Env. Affairs Seminar	24	2.00	2.59	-0.52
Engr & Tech Bridge	19	2.62	2.64	-0.01
Engr & Tech Seminar	111	2.56	2.64	-0.11
UCOL Bridge	86	2.96	2.79	0.22
UCOL Seminar	746	2.45	2.64	-0.19

<sup>a</sup> predicted based on High School GPA and SAT Score (excludes missing cases).



# Summer Bridge Questionnaire

- Designed to assess self-reported learning outcomes
- Provides instructional teams with valuable feedback concerning students' perceptions of course benefits
- Reports display findings by instructional team and in the aggregate
- Includes actual comments from students
- Response rates high for 2004 (97%), 2005 (97%), 2006 (94%), 2007 (98%)



# **Nine Constructs Emerged (PCA Analysis)**

- 1. Critical Thinking**
- 2. Academic Skills**
- 3. Study Skills**
- 4. Knowledge of Campus Resources**
- 5. College Adjustment**
- 6. Awareness of College Expectations**
- 7. Instructional Team/Faculty Interactions**
- 8. Social Integration/Sense of Community**
- 9. Class Assignments and Activities**



## Top Rated Benefits

	N	Mean	Std. Deviation
Social Integration/Sense of Community	916	4.41	.55
Campus Resources	896	4.40	.44
College Adjustment	894	4.22	.53
Interactions with Instructional Team	899	4.17	.60
College Expectations	886	4.17	.56
Class Activities	923	4.16	.68
Study Skills	911	4.04	.64
Critical Thinking	908	4.01	.65
Academic Skills	909	3.92	.64



# Factors that Significantly Predict Overall Satisfaction with Course

- Course Activities
- College Adjustment
- Campus Resources
- Interactions with Instructional Team Members

adjusted  $R^2 = .215$ ,  $F(9, 756) = 23.97$ ,  $p < .0001$ ).



## Mean Differences by Year N=934

	2004 (167)	2005 (170)	2006 (197)	2007 (357)
Critical Thinking	<b>3.82</b>	<b>3.82</b>	4.21	4.06
Academic Skills	<b>3.66</b>	<b>3.79</b>	4.06	4.01
Study Skills	<b>3.80</b>	<b>3.84</b>	4.17	4.13
Knowledge of Campus Resources	<b>4.25</b>	4.41	4.52	4.40
College Adjustment	<b>4.05</b>	<b>4.11</b>	4.30	4.28
Awareness of College Expectations	<b>3.97</b>	<b>4.03</b>	4.25	4.26
Instructional Team Interactions	<b>3.99</b>	4.11	4.32	4.21
Social Integration/Sense of Community	4.33	<b>4.25</b>	4.44	4.48
Class Assignments and Activities	<b>3.97</b>	<b>3.94</b>	4.34	4.22



# Summer Bridge (Two-Week) Student Questionnaire Results



98% of students surveyed  
said they would  
recommend the Summer  
Bridge program to other  
first-year students.

2006 = 99%

2005 = 96%,

2004 = 98%



# Longer Term Impacts

Beginning Freshman Year		Fall 2001	% Retained	Fall 2002	% Retained	Fall 2003	% Retained	Fall 2004	% Retained	Fall 2005	% Retained	Fall 2006	% Retained
<b>Original Number of Bridge Students</b>		16		78		187		172		173		266	
<b>1-Year Retention</b>	Enrolled	14	88%	62	79%	142	76%	130	76%	133	77%	189	71%
	Graduated	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
	<b>Total Retained</b>	14	88%	62	79%	142	76%	130	76%	133	77%	189	71%
<b>2-Year Retention</b>	Enrolled	12	75%	46	59%	121	65%	114	66%	113	65%		
	Graduated	0	0%	0	0%	0	0%	1**	1%**	0	0%		
	<b>Total Retained</b>	12	75%	46	59%	121	65%	115**	67%**	113	65%		
<b>3-Year Retention</b>	Enrolled	11	69%	39	50%	110	59%	101	59%				
	Graduated	0	0%	1	1%	0	0%	2**	1%**				
	<b>Total Retained</b>	11	69%	40	51%	110	59%	103**	60%**				
<b>4-Year Retention</b>	Enrolled	9	56%	40	51%	87	47%						
	Graduated	1	6%	2	3%	18*	10%						
	<b>Total Retained</b>	10	63%	42	54%	105*	56%*						
<b>5-Year Retention</b>	Enrolled	5	31%	10	13%								
	Graduated	4	25%	28*	36%								
	<b>Total Retained</b>	9	56%	38*	49%*								
<b>6-Year Retention</b>	Enrolled	1	6%										
	Graduated	6	38%										
	<b>Total Retained</b>	7	44%										



# Implications

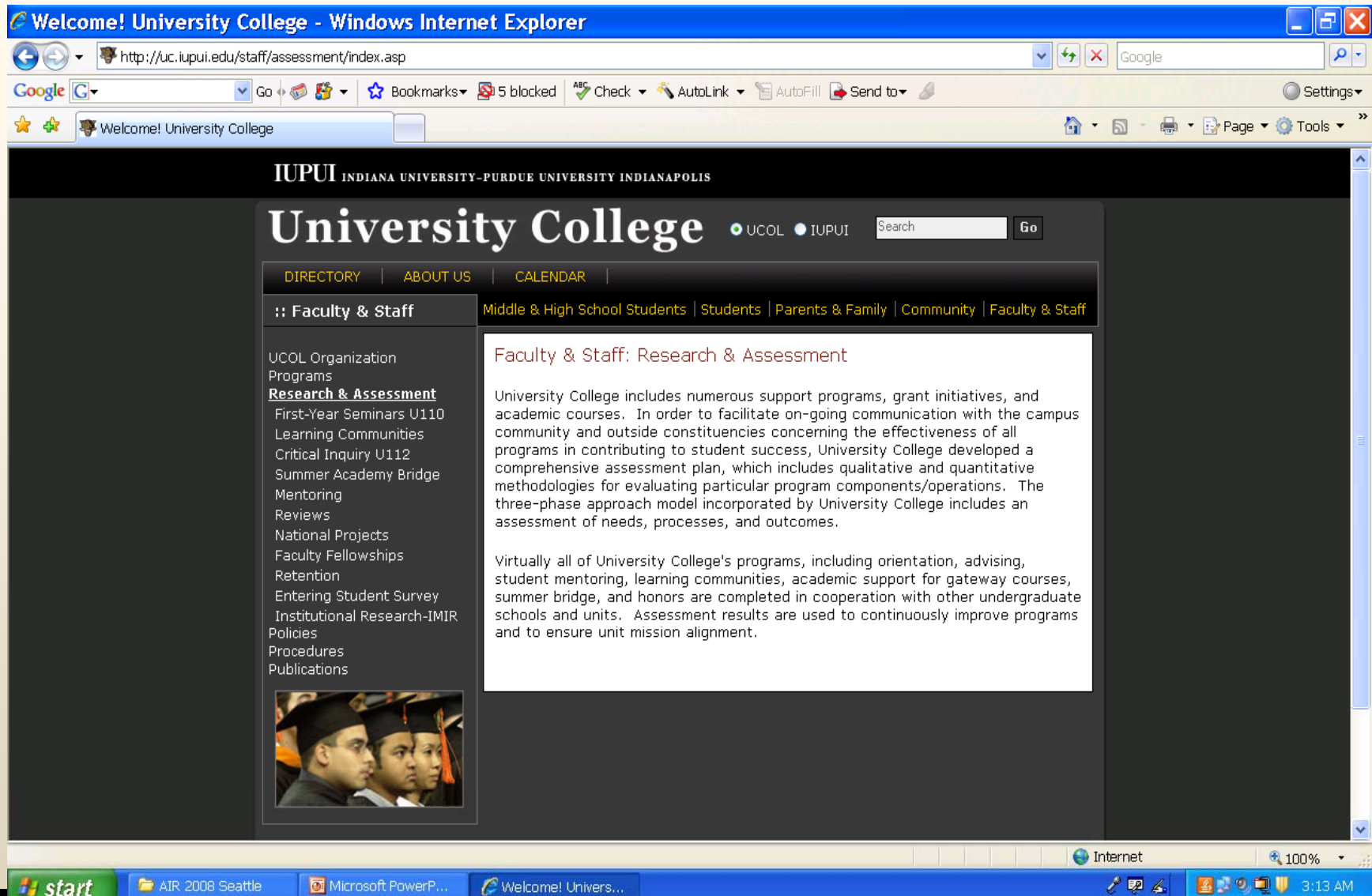
- Summer Bridge implementations that are tailored to meet the diverse needs of students are optimal.
- Students seem react positively to early interventions that facilitate positive connections, interactions, and equip them with skills necessary to effectively adjust to college.
- Early interventions can have positive long term impacts.



# Assessment Challenges

- Defining and measuring learning.
- Using assessment results to improve teaching and learning.
- Identifying what program components have the most positive educational outcomes and for what groups of students.
- Knowing how to best serve the most at-risk students.
- Communicating results in a timely manner so they are used when decisions are made.
- Communicating and publicly reporting the bad news.
- Assessing programs that are experiencing or will experience significant growth or change.

<http://uc.iupui.edu/staff/assessment/index.asp>



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## Faculty & Staff: Research & Assessment

University College includes numerous support programs, grant initiatives, and academic courses. In order to facilitate on-going communication with the campus community and outside constituencies concerning the effectiveness of all programs in contributing to student success, University College developed a comprehensive assessment plan, which includes qualitative and quantitative methodologies for evaluating particular program components/operations. The three-phase approach model incorporated by University College includes an assessment of needs, processes, and outcomes.

Virtually all of University College's programs, including orientation, advising, student mentoring, learning communities, academic support for gateway courses, summer bridge, and honors are completed in cooperation with other undergraduate schools and units. Assessment results are used to continuously improve programs and to ensure unit mission alignment.



AIR Forum: Seattle, WA – May 26, 2008



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