Building a Bridge to Improve Student Success

Western Connecticut State University ***(March, 2009)***

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Board of Trustees' Resolution (July 26, 2003)

- Beginning in Fall 2004 – 3 GOALS
  - Successfully complete all remedial courses within first 24 credits
  - Establish what HS Math and English curricula are necessary for students to complete proficiency prior to college
  - Develop action plans to increase the percentage of entering students who are ready for credit-bearing classes

National Studies Assist

- **Mixed Messages** (David Conley, 2003)
  - Inconsistent alignment between secondary and post-secondary standards
- **Overcoming the High School Senior Slump** (Michael Kirst, 2001)
  - Seniors have different ideas about their last year of high school
    - Work more
    - Socialize more
    - Take less demanding coursework
  - Colleges only want Junior grades
  - States don't always require 4 years of coursework in Math
- **The Neglected "R": The Need for a Writing Revolution** (National Commission on Writing/College Board, 2003)
  - Students' writing skills aren't what they should be
  - Curriculum reform is needed at all levels to address this problem
  - Collaboration encouraged between K-12 and higher education

Need for Remediation: A National Problem

National Data:

- More than 30% of entering freshmen needed at least one remedial course *(NCES, 2000).*
- 21% of beginning postsecondary students took at least one remedial education course during their first year (NCES 2008).
  - 15.5% took math (twice as many took Math)
  - 7.9% took writing

Need for Remediation: Our Data

- 1st-year students taking at least one remedial course in Fall 2008
  - 48.28%
- Taking Math
  - 38.28% (twice as many took Math)
- Taking Writing
  - 18.92%

Primary Goal — True Access

- Create true collaborative relationships among schools such that students enter college with the skills, motivation and preparation to take full advantage of all that college offers.
- And, they do!

Project's 6 Goals: 1-3

1. Decrease number of high school students needing remediation upon entering college

2. Clarify college expectations in both English and math to students

3. Look for areas of mismatch

Project's 6 Goals, 4-6

4. Build relationships among the faculty at high schools and university — truly collaborate

5. Increase first-year retention

6. Increase six-year graduation rate

Design:
Two Feeder High Schools

- Danbury High School (9,567 students)
  - Urban Priority One
  - 30% from non-English speaking homes
  - 30% free lunch eligible
  - 43% minority
- Bethel High School (3,228 students)
  - Upper-middle class, suburban
  - 6.1% from non-English speaking homes
  - 6.6% free lunch eligible
  - 14% minority
- Both want to upgrade their HS curricula for the future academic success of their students.

Outline of Project

- **Phase I**: Placement Testing of High School Juniors (Cohort A) and Spring Dinner Meetings *(first collaborations)*
- **Phase II**: 3-Day Summer Faculty Meetings for Planning Curricular Changes for Senior Intervention Year
- **Phase III**: Retesting High School Seniors in Spring of Senior Year (begin Cohort B for Juniors) and Dinner Meetings

Placement Testing

- Writing: Prompted Essay Exam, Holistic Scoring

Essay Scoring Rubric (5 to 1)

- Content, Development
- Organization
- Expression
- Syntax, grammar, dictation, punctuation, mechanics

- Mathematics: Accuplacer Paper/Pencil Test (50-minutes, timed, 35 items)

Initial Plan

- Use senior year to prepare students for college-level expectations
  - Writing
    - augment regularly scheduled classes by collaborating with teachers in the summer prior to the senior year.
    - add university expectations/standards to senior year classes.
  - Math
    - offer use of online "ALEKS" for support during senior year in *after-school* curriculum. (Assessment and Learning in Knowledge Spaces)

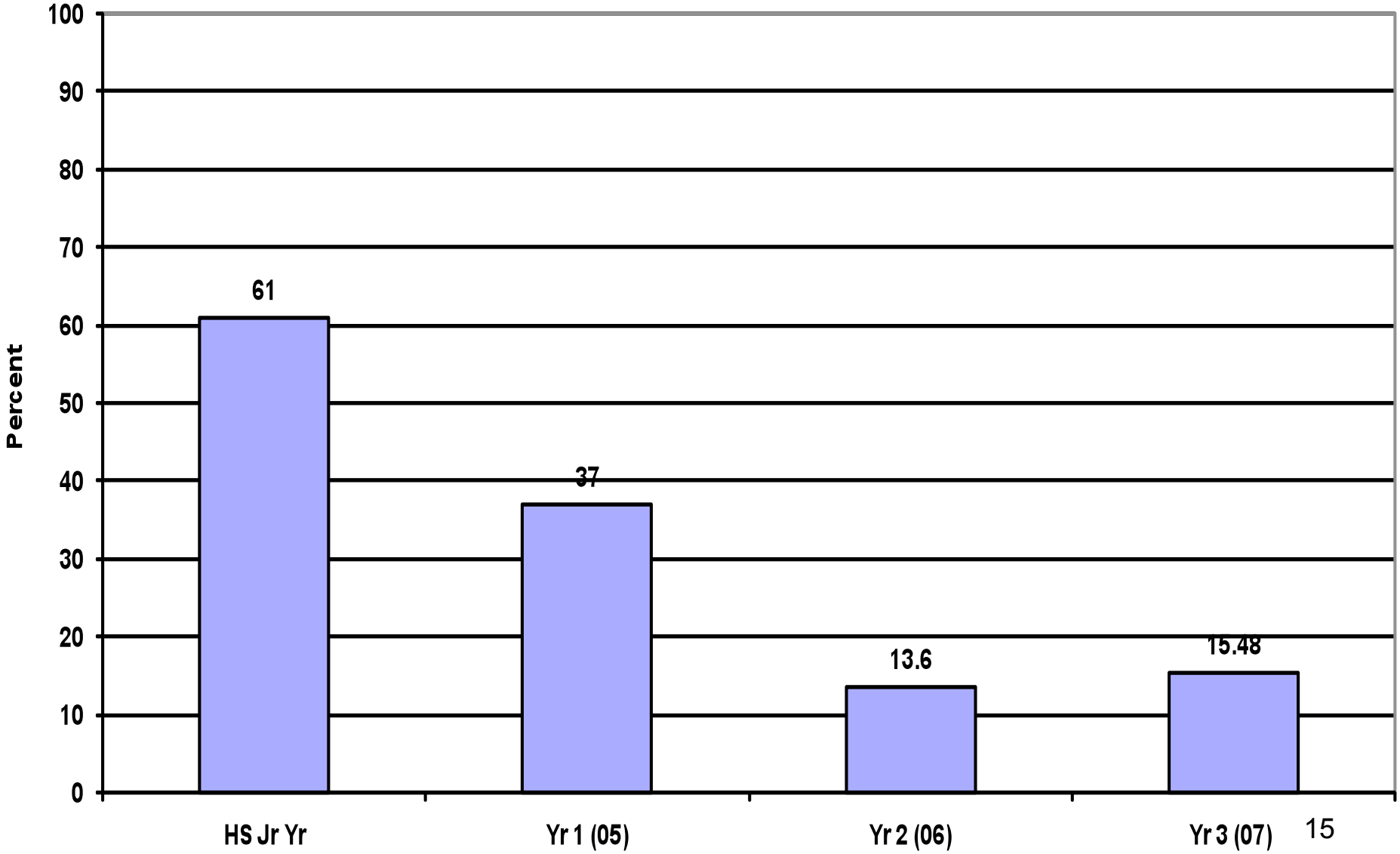
Resulting Changes in High School Writing Classes

- More pre-writing
- More timed writing
- More work on organization and development
- Greater use of writing prompts for practice writing
- Use of university grading rubric
- Posters on walls – use of meaningful acronyms, creating a culture of change

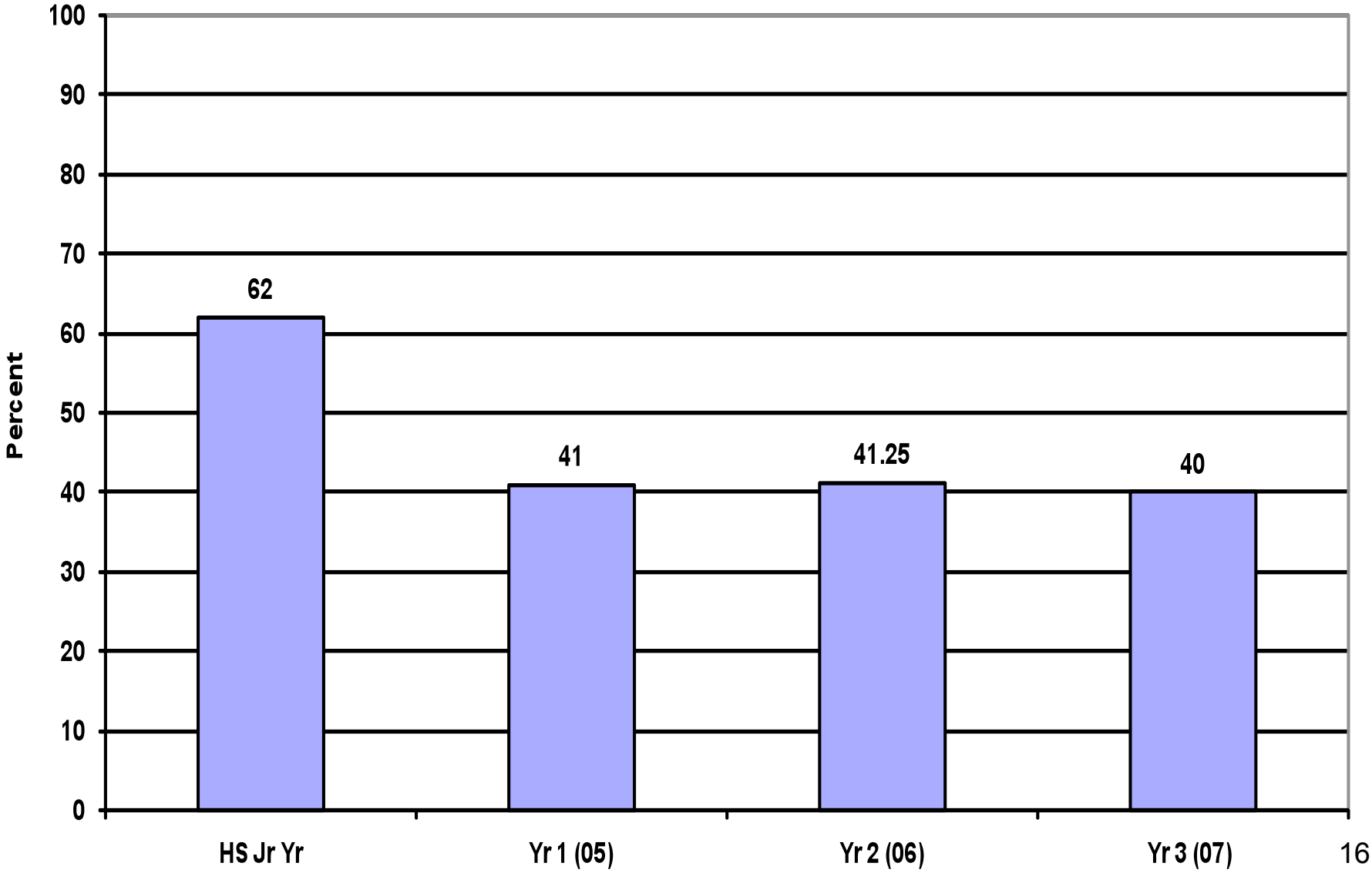
Resulting Changes in High School Mathematics Courses

- Utilized diagnostics from Accuplacer to identify areas of content weakness
  - For individuals (help them)
  - For groups--for example, we could pinpoint specific areas of content weakness to create a curricular boost, as with rational equations: $\frac{2x}{7y} * \frac{3y}{4x^2}$
- Created 10 different 50-item sample tests for regular practice

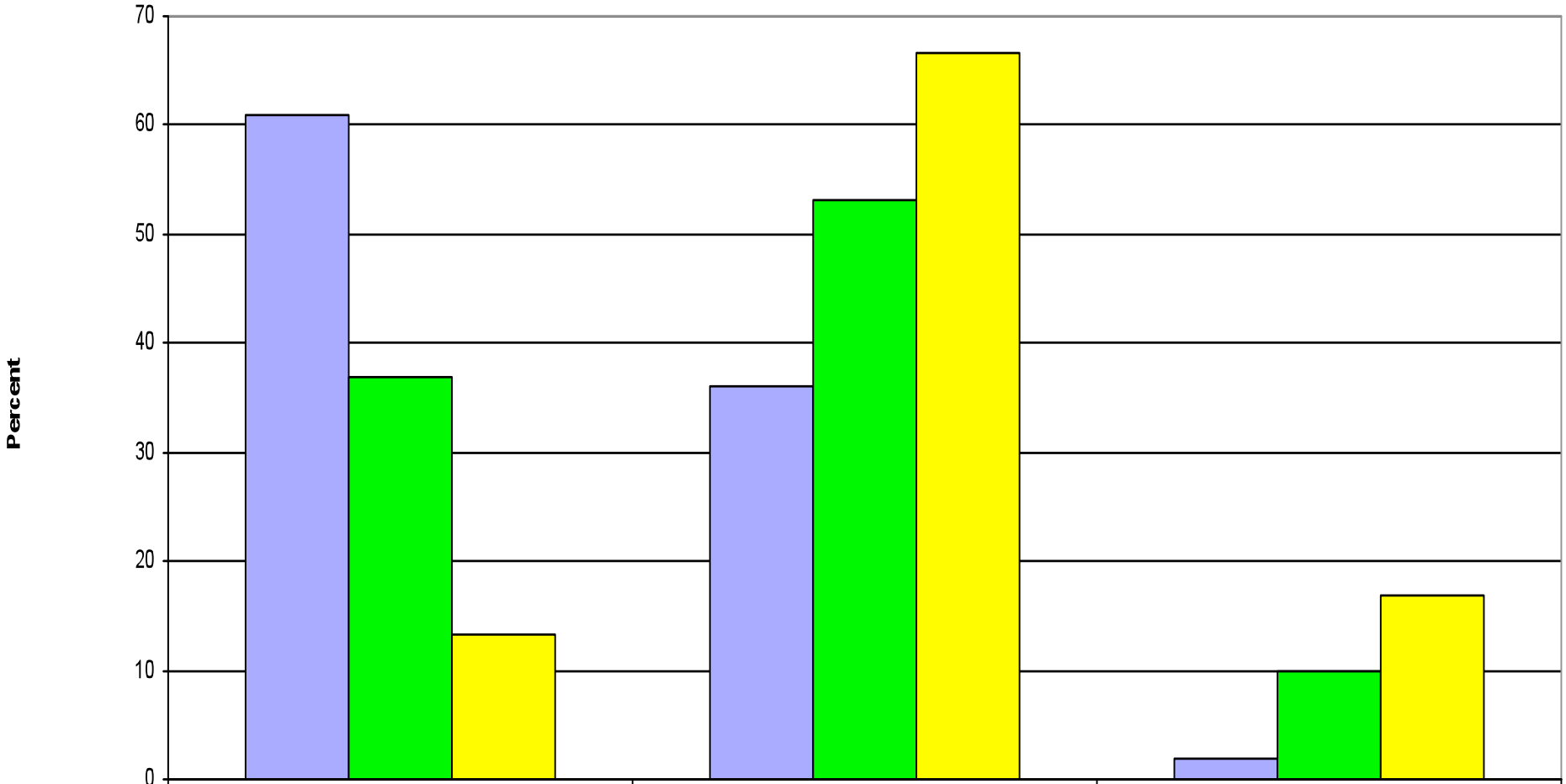
Writing Placement Over Time



Math Placement Over Time

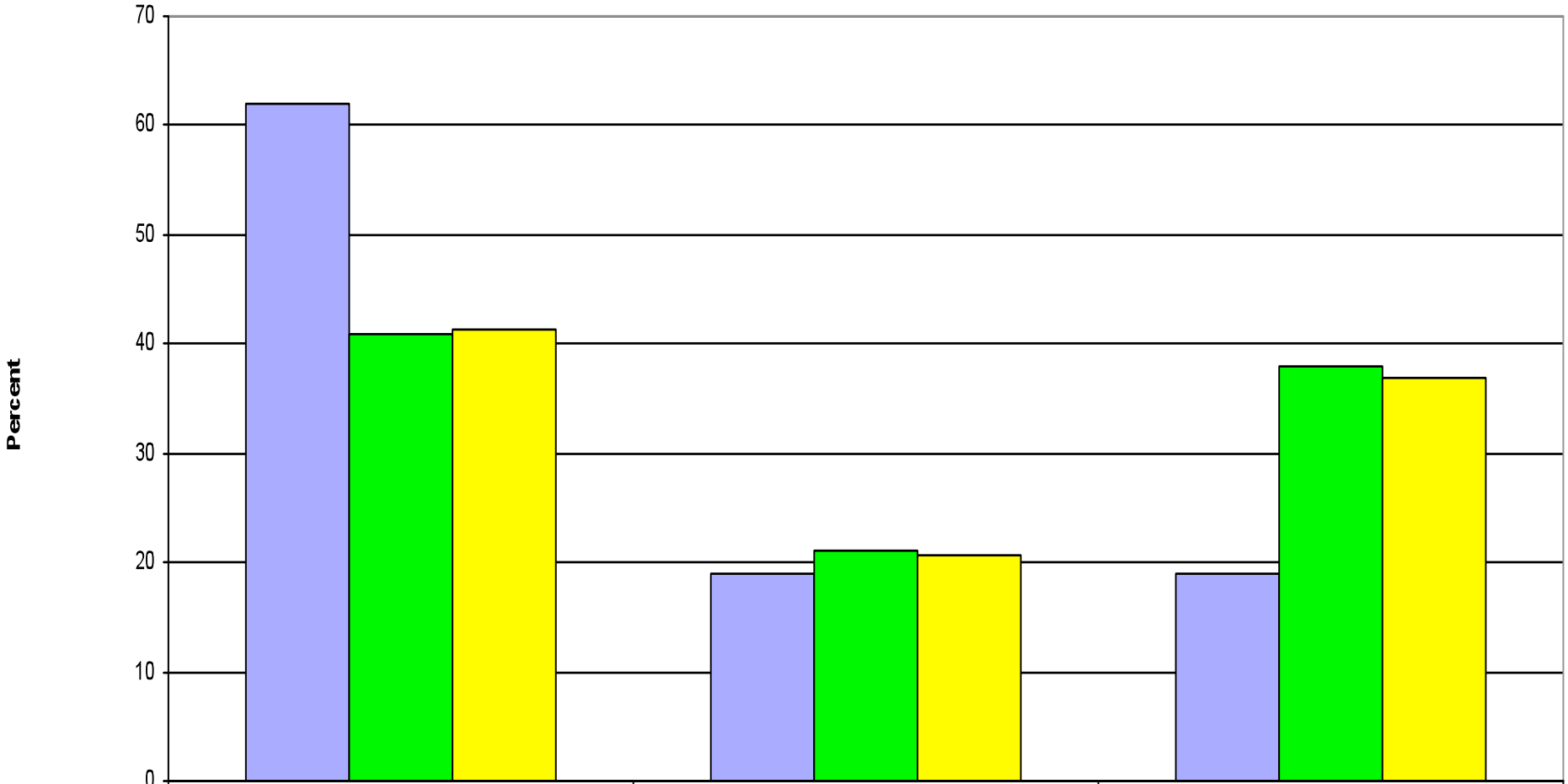


English Writing Placement Across Three Years



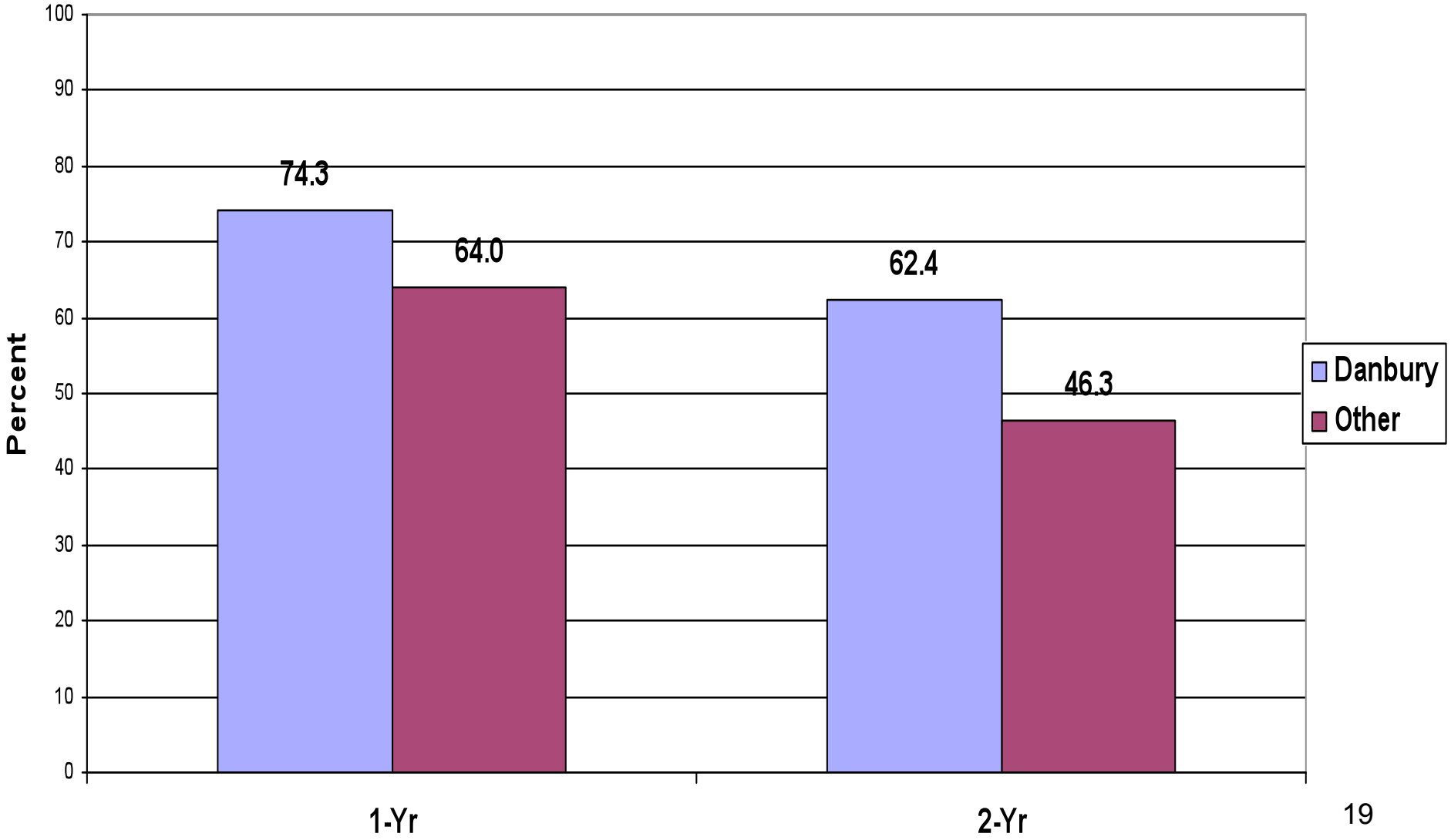
	ENG 098	ENG 101	ENG GE
Junior in HS	61	36	2
Senior, YR 1	37	53.2	10
Senior, YR 2	13.36	66.65	16.9

Math Placement Across Three Years

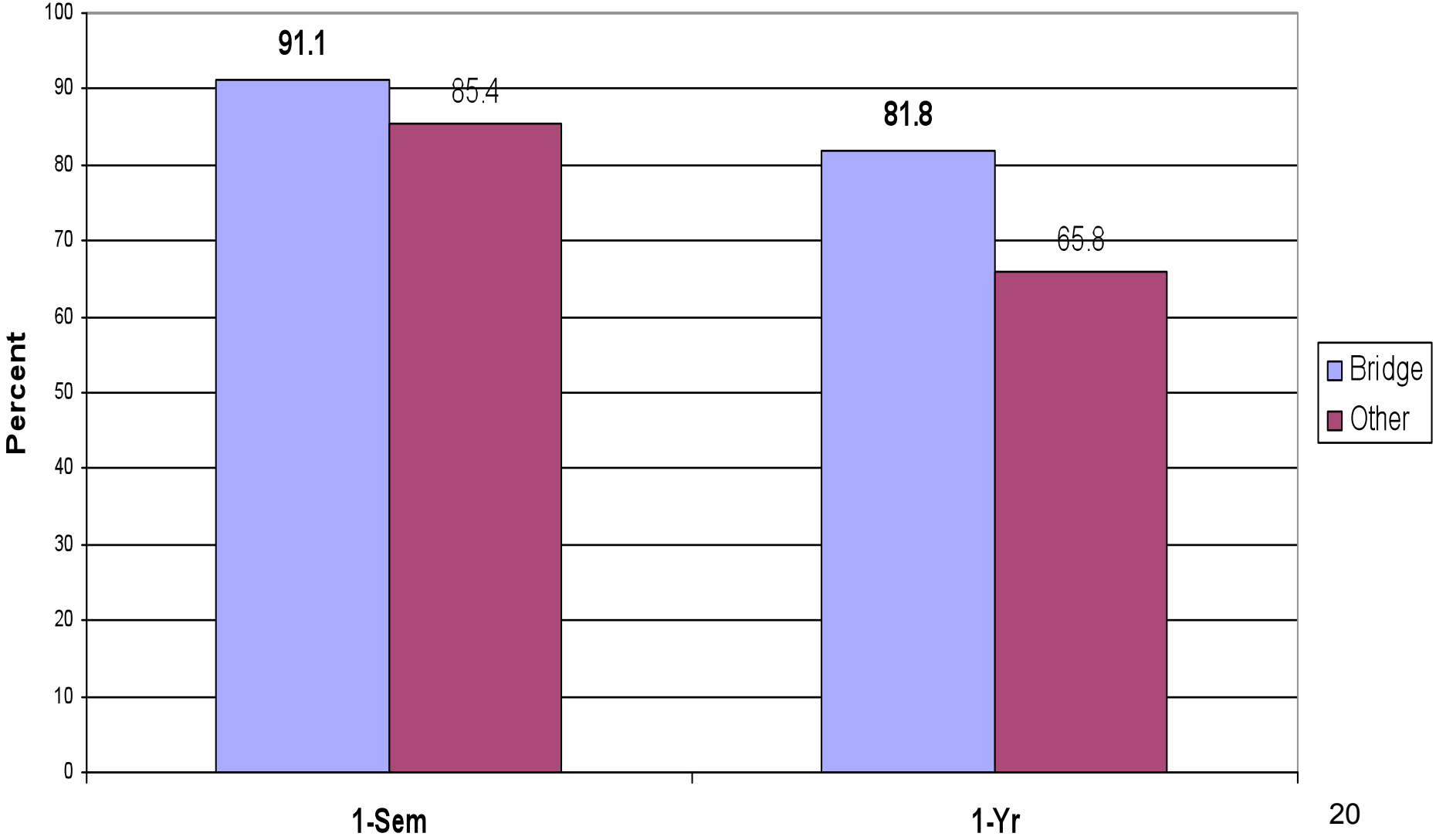


	MTH 098	MTH 100	MTH GE
Junior in HS	62	19	19
Senior, YR 1	41	21	38
Senior, YR 2	41.25	20.7	37

Retention Rates (2005): Danbury versus Others



Retention (2006): Bridge Schools Versus Others



In the Sciences: Collaborate and Intervene

Fall and Spring Dinner Discussions

- Examine current student success data
- Examine diagnostics

Summer Workshops

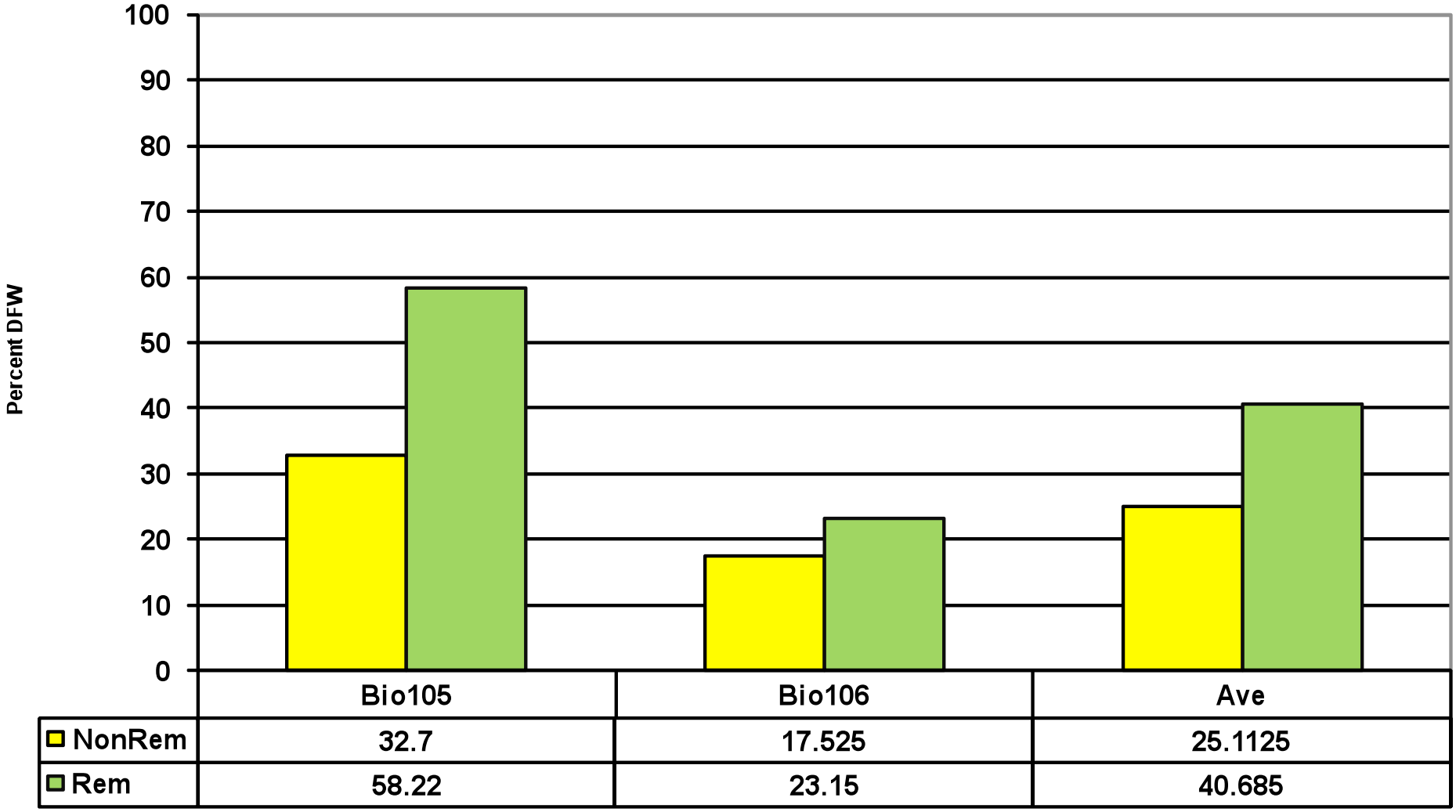
- Three-day workshops
- Plan for upcoming Fall

Biology: An example of how data are leading to changes

Entering students who needed to take remedial courses in Mathematics or Writing were far more likely to make D's, F's, or W's (DFW rate) in their Anatomy & Physiology courses (a first-year course primarily for nursing students) —for these DFW rate differences, most of the differences came from students who withdrew—they simply gave up… not true access!

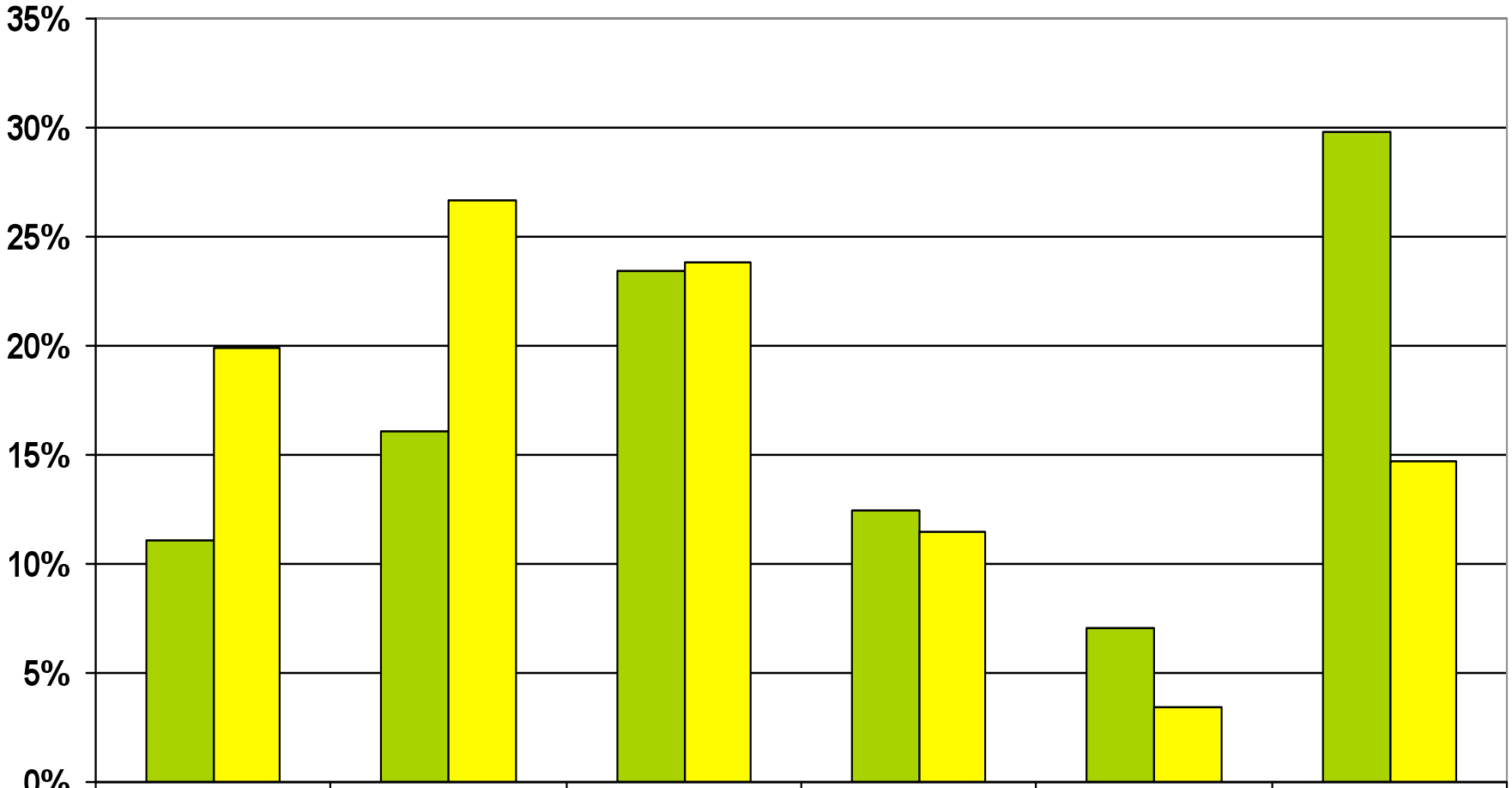
- 25.52% more DFWs in BIO 105
- 5.63% more DFWs in BIO 106
- 16% more DFWs on the average in both courses of A&P

DFW Rates for A&P Students by Remediation Status



	Bio105	Bio106	Ave
NonRem	32.7	17.525	25.1125
Rem	58.22	23.15	40.685

A&P Grades by Remediation Status (2002-2006)



	A	B	C	D	F	W
Rem	11.08%	16.11%	23.46%	12.49%	7.05%	29.81%
NonRem	19.90%	26.70%	23.82%	11.52%	3.40%	14.66%

Percent Grades

In the Sciences:
Determine Available Diagnostics & Better Align Curriculum

- Biology – Based on our data related remedial status and student success in A&P, passing the remedial courses in mathematics and writing is now serving a prerequisite function for A&P. We do not use placement testing in biology yet, but believe that good reading and study habits are very important to student success.

- Chemistry – Our ultimate plan is to use our standardized placement test in the high schools during the junior and senior year spring semesters. We will begin that testing schedule first at the larger of the two schools. Two summers ago, though, we began to gather data when the students took our Chemistry Placement Test on our campus (summer 2007) by asking for useful student information such as the name of each student's high school and last chemistry course taken. Assessments will utilize both types of these data for the current academic year.

- Physics, Astronomy, Meteorology – We discussed the feasibility of giving the current physics placement tests in the Spring 2009 to the local high school (Bethel) students right before their physics finals to form a baseline for future assessment. During the current physics placement testing sessions at the University, the students now are asked to identify when and where they took their high school physics courses.

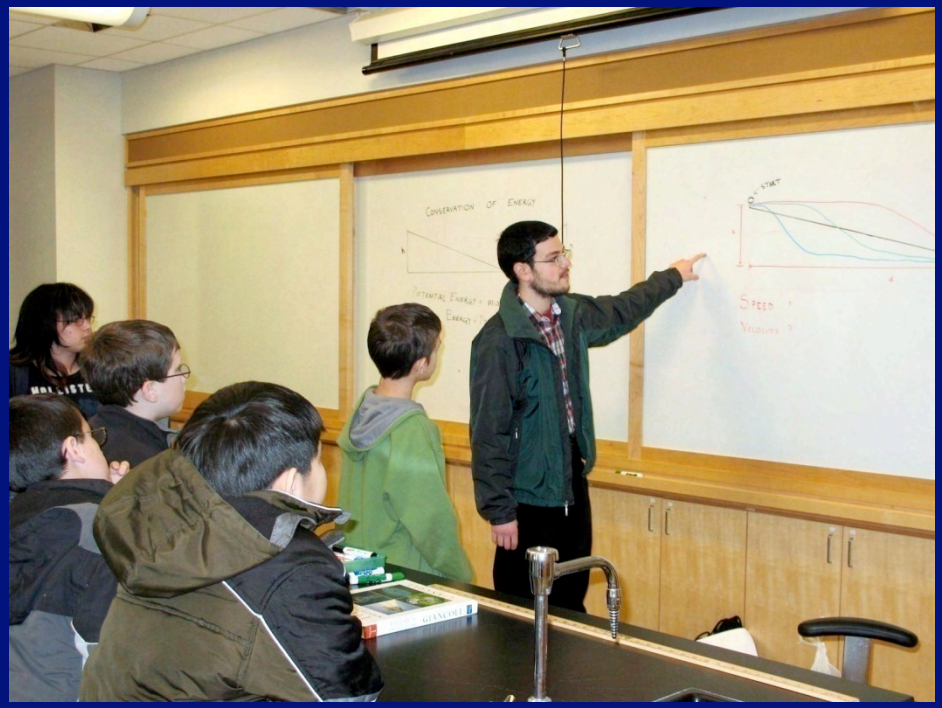
Encouraging Collaboration in the Sciences with Area Schools

We regularly host the
Bethel Middle School Science Fair

Encouraging Collaboration in the Sciences with Area Schools

We Hosted a Danbury Middle School STEM "Exploration Academy" –

100 Students Visited Campus!



Encouraging Collaboration in the Sciences with Area Schools

Mentored WISTR Teachers

Encouraging Collaboration with Area Schools

- Our students tutored Middle School Mathematics students in Danbury to help prepare them for high-stakes testing.
- One Book: One Community
- STEM Academy Plans
- “Exploration Academy”
- Collaborative research
- Shadowing programs

In Summary

- Costs decrease.
- Retention increases.
- Time to graduation should decrease.
- Need for remediation decreases.
- Collaboration works for generating better understanding of what changes need to be made.
- Collaboration clearly improves access for more students, allowing them to utilize their first year in college more effectively and completely.