

Technical Issues Related to Multi-State Assessments



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This Morning's Presenters

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Presentation Overview

- Introduction
- Building a Consortium
- Vendor Procurement and Financial Responsibilities
- Effective Communication
- Content Standards and Test Design
- Logistics
- Reporting and Continued Research Support

American Diploma Project

- The American Diploma Project (ADP) was created to ensure all graduates leave high school ready for college and careers.
- Early research by ADP sought to identify “must-have” knowledge and skills graduates will need to be successful in college and the workplace.
- Found a convergence between the skills that high school graduates need to be successful in college and those they need to be successful in a job that supports a family and offers career advancement.
- Developed ADP benchmarks that include the core content and skills in mathematics and English all students should have when they graduate high school.

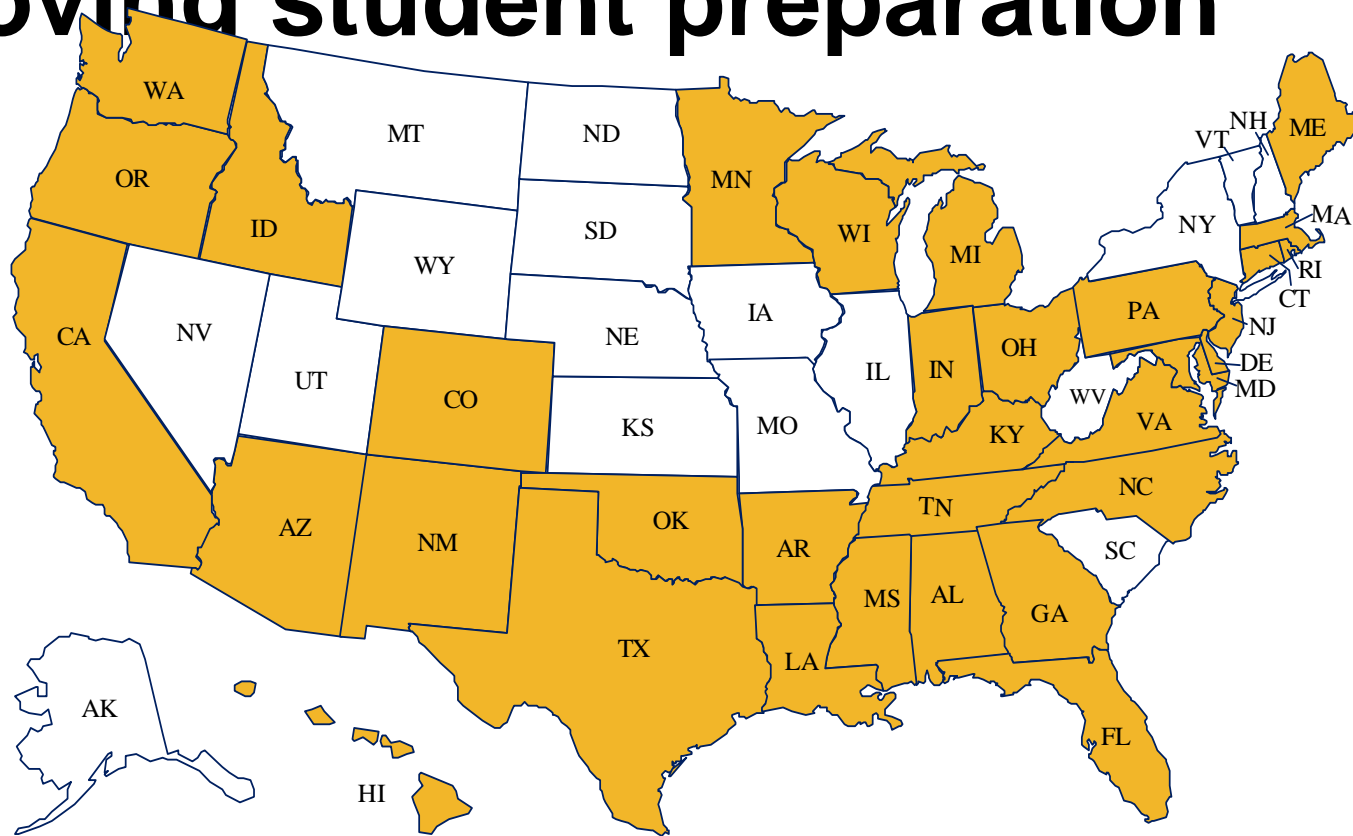
Key Findings

- In mathematics, graduates need strong computation skills, ability to solve challenging problems, reasoning skills, geometry, data analysis, statistics, and advanced algebra.
- Essentially, they need the content and skills *typically taught* in courses such as Algebra I, Algebra II and Geometry, as well as data analysis and statistics.
- In English, graduates need strong reading, writing and oral communication skills equal to four years of grade-level coursework, as well as research and logical reasoning skills.

ADP Policy Agenda: Close the Expectations Gap

- Align high school standards with college and career expectations.
- Require all students to take curriculum aligned with standards.
- **Include “college-ready” tests, aligned with state standards, in high school assessment system.**
- Hold high schools accountable for graduating students college- and career-ready, and hold postsecondary institutions accountable for student success.

ADP Network: 33 states committed to improving student preparation

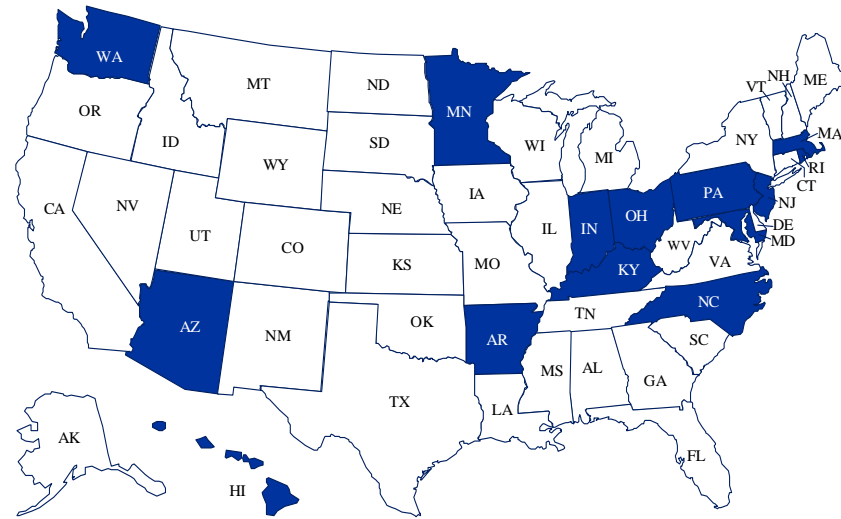


ADP Multi-state exam: History & Timeline

In summer 2006, nine states issued RFP for development of Algebra II exam:

Arkansas, Indiana, Kentucky, Maryland, Massachusetts, New Jersey, Ohio, Pennsylvania, Rhode Island

- Ohio acted as “lead state” in unprecedented multi-state procurement arrangement
- Vendor (Pearson) selected in Feb, 2007
- 5 additional states join in 2007: Arizona, Hawaii, Minnesota, North Carolina, and Washington



More states expressing interest in the exam joining the consortium...

Purposes of Exam

- To measure “college-ready” content
- To ensure consistent content and rigor in Algebra II courses within and among states
- To enable comparisons in performance among the states
- To reduce test development costs by working together
- *To be considered for postsecondary placement purposes*

How Will States Use the Exam?

- This exam is still in the early stages of implementation
- States are contemplating how to use the exam and determining/refining the policy surrounding it.
- **Current Plans**
 - Some states will require all students who take Algebra II to take the Exam
 - Some states will allow districts to make decisions about whether to require the Exam
 - Some states will make the Exam optional, allowing students to decide whether to take it
 - Some states will make the Exam part of certain state initiatives

Building a Consortium

Role of Achieve

- Multifaceted
 - Facilitator
 - Facilitate project, make sure it is a success
 - Quality Control
 - Serve as extra set of eyes, fresh set of ideas
 - The “Glue”
 - Act as go-between between states and vendor, test manager
 - Make sure everyone’s needs are met
 - Work with Higher Ed for buy-in
 - Keep Chiefs informed

Role of Achieve

- Provide support in the development of the tests
- Provide leadership by helping member states share and develop tools and strategies for improving teaching and learning in high school math
- Provide annual report of performance of participating states on the Algebra II test
- Promote the idea of the consortium to non-member states in order to build interest and eventual membership

Why States Join—ARKANSAS

- Interstate and Intrastate Comparison—valuable information within state and throughout nation
- Financial Efficiency—multi-state consortium would cushion costs associated with assessment development
- Proactive Policymaking—any future move to national standards would be best devised through state consortium

Why States Join—INDIANA

- ADP Standards central to our HS reform
- Hold schools accountable for delivering course
- Buy-in from higher education – idea resonates
- The “grand” experiment – can states come to agreement on standards and a test?
- Efficiency - better use of staff & resources
- Test that serves both K-12 and Higher Ed

State Leadership Commitment— ARKANSAS

- Commissioner James was involved with the process from the beginning
- Arkansas has aligned its Algebra II curriculum to American Diploma Project (ADP) standards as one of the original ADP states
- This effort is a good fit with legislation and policy in Arkansas, especially in regards to the Smart Core Curriculum
- Dr. James was committed to working through the procurement issues among the states, serving on the RFP selection committee, determining the appropriate language in contract, and devoting resources from Arkansas to ensure smooth implementation

State Leadership Commitment— ARKANSAS

- Dr. James has met with higher education officials in the state to determine possible uses of test results for placement purposes for students entering into post-secondary institutions or any other ways in which the test can be utilized by higher education officials
- Dr. James actively promotes the consortium as a positive endeavor among his many constituencies
- Funding provided for the continuation of participation in the consortium will be designated through state funds

State Leadership Commitment-INDIANA

- State Superintendent and the Commissioner for Higher Education were both directly involved in the decision to participate
- Education Roundtable – (statewide policy makers) has strongly supported ADP efforts
- Next step in ramping up expectations for students and schools

Organizational Teams

- Coordination and Direction Team, CDT
- Research Alliance, RA
- Content Leadership

The CDT and Decision Making

- The Coordination and Direction Team (CDT) is responsible for overseeing the production and implementation of the Algebra II program
- The CDT ensures that all applicable legislation and policies associated with each state are given proper consideration during team deliberations and decision making
- The CDT includes assessment directors or other high-ranking policy-making officials from each member state in the consortium

The CDT and Decision Making

- Decision making in the CDT is a process of consensus, collaboration, and compromise
- Each member of the CDT has one voice and one vote
- Issues are discussed relating to the policies of each state; many times, these discussions result in give and take
- For legal matters, decisions must be unanimous

New State Members

- Membership is extended to any state who wants to be part of the consortium
- New members must agree to terms stated in the contract, but may add language
- Membership includes participation in all CDT meetings and item development and review meetings

Vendor Procurement & Financial Responsibilities

Legal Requirements and Advice

- Start early can be a lengthy process
 - Have a lawyer shepherd the process
- Can your state enter into a joint purchasing agreement?
- Multiple levels of legal review and approval needed both for the joint purchase and for the RFP/contract
 - Department of Ed
 - Procurement Division

Role of Lead State

- Appoint a procurement officer
- Conduct procurement
- Provide guidance to the CDT
- Administer the contract

States' Commitments

States must be able to make firm long range commitments

- Contractual
- Personnel
- Financial

RFP Process

- Development and review of drafts needs to be strongly managed
- Can be challenging because of varying state experiences/practices/expectations
- Actual evaluation of Proposal more complex than “normal” process
 - Pre proposal conference
 - Evaluation of proposals
 - Consensus meeting
 - Clarification questions to top bidder
 - Contract award

Vendor Compensation

- Cost recovery basis
- Price breaks
- Pricing options
- States are invoiced for operational testing
- Optional and enhanced services

Cost/Pricing Summary Tables

Number of Tests Ordered	Spring 2008
	PRICE (\$)
*Less than 100,000	\$25.56
100,000 – 149,999	\$20.56
150,000 – 199,999	\$19.08
200,000 – 249,999	\$17.56
250,000 – 299,999	\$16.56
300,000 and greater	\$15.56

Number of Tests Ordered	Price beginning December 2009 - 2011	**2012 - 2013**
	PRICE (\$)	PRICE (\$)
Less than 100,000	\$26.06	\$23.56
100,000 – 149,999	\$21.06	\$17.96
150,000 – 199,999	\$19.58	\$15.94
200,000 – 249,999	\$18.06	\$14.17
250,000 – 299,999	\$17.06	\$13.05
300,000 and greater	\$16.06	\$11.97

DESCRIPTION	ADDITIONAL COST PER TEST
Scoring and reporting of the entire test on an expedited basis (within one [1] week).	\$3.99
Scoring and reporting of the entire test on an expedited basis (within two [2] weeks).	\$0.49
Scoring and reporting of only the multiple choice responses on an expedited basis (remaining test items scored in a more extended time period).	\$0.00
On-line test administration.	\$4.49
Data and Statistics Module.	\$7.49
Iterative Processes Module.	\$7.49
Probability Module.	\$7.49
Trigonometry Module.	\$7.49
Matrices Module.	\$7.49
Conics Module.	\$7.49
Logarithms Module.	\$7.49
Administration, scoring, and reporting of non-English language versions of the Exam (Spanish).	\$9.99
Administration, scoring, and reporting of Braille versions of the Exam.	\$9.99
Administration, scoring, and reporting of audio versions of the Exam.	\$9.99

Cost/Pricing Summary Tables

TRAINING OPTIONS	ADDITIONAL COST
Test Administrator Training Video	\$15.00 per DVD, plus shipping
Regional Test Administrator Training Workshop	\$48,610 per workshop (up to 100 participants)
On-line Self-paced Training	\$92.66 per use for a one-year subscription

Effective Communication

Multiple Layers of Communication

Project Level:

- Achieve – Pearson
- Achieve – Coordination & Direction Team (CDT)
- CDT – Pearson – Achieve
- Achieve – Pearson – Research Alliance
- Achieve – State Content Leads
- Achieve – Pearson – State Content Leads
- ?? Other

Many communications lines were opened in response to an issue

Additional layers of communication

- Between participating states
- Between states and districts
- Between states and the public

Communications with the Research Alliance

- The purpose of the Research Alliance is to provide high level expert advice to Achieve and Pearson on a variety of issues, almost like a “TAC+”
- Meet up to 3 times per year
- Ad hoc meeting and phone calls as necessary
- CDT is welcome to join meetings and phone calls

Web Sites

- Achieve.org
- PEMSolutions.com *
- States have information posted on their individual sites

* includes Released Item Set

Content Standards and Test Design

Content Considerations

The Players

- Achieve (owner)
 - CDT
 - Content Leads
 - Higher Ed
- Agreed to....
- calculator component; graphing
 - emphasize functions other than quadratics
 - one-third of points from open ended items
 - 'core' curriculum
 - disagree on parts of curriculum

Test Design

57 Items

46 multiple choice, 7 short answer, 4 extended response

- Operations and Expressions (~15%)
- Equations and Inequalities (20)
- Polynomial and Rational Functions (30)
- Exponential functions (20)
- Functional Operations and Inverses (15)

Test Design

Modules

8 Items

6 multiple choice, 1 extended response, 1 short response

- Data and Statistics
- Probability
- Trigonometry
- Logarithms
- Matrices
- Conics
- Iterative Processes

Content Meetings (IR and RF)

- Representation of Participants
- Representation of Items

- Standards Revision
- Calculator Policy

- Rubric Type
- Scoring Consistency

Logistics

Pre Identification of Answer Documents

- Pre-ID is required for operational testing; determination to be made regarding which demographics need to be on the answer document vs. pre-ID
- Students who are not pre-identified will require resolution prior to reporting

Field Test Participation Recruitment Efforts

- Pearson-supplied incentives
 - Professional development CD—“behind the scenes access” to the scoring process
 - PASeries, Algebra I (a one-year subscription to online formative assessment)
- Individual states’ recruitment efforts
 - Arkansas
 - Massachusetts
 - New Jersey

FT Participation—Fall 2007

STATE	COUNT	PAPER/ ONLINE
AR	15,873	PAPER
IN	871	ONLINE
KY	4,728	PAPER
	350	ONLINE
MD	1,953	PAPER
	854	ONLINE
MA	1,494	PAPER
	84	ONLINE
NJ	11,761	PAPER
	657	ONLINE
OH	21,281	PAPER
PA	2,641	PAPER
RI	467	PAPER
MN	791	PAPER
	93	ONLINE
TN	948	PAPER
WA	579	ONLINE
Total:	65,425	61,937 PAPER
		3,488 ONLINE

FT Participation—Winter 2008

State	Count	O/L or Comp. Study
MD	118	Comparability Study
MD	355	Online
MA	74	Comparability Study
MA	1,153	Online
MN	289	Comparability Study
MN	1,389	Online
NJ	125	Comparability Study
NJ	911	Online
IN	190	Online
KY	260	Online
Total	4,864	4,258 Online
		606 Comparability Study

Attrition Rates

- Fall field test (paper): 41%
- Fall field test (online): 71%
- Winter field test (primarily online): 60%
- High attrition rates suggest incentives not successful at retaining field test volunteers
- Spring operational exam (paper): TBD, although likely to be low attrition rate as school, district, or state paying per order

Paper/Pencil Operational Test Participation—Spring 2008

	Number of Tests Ordered	Required or Optional?	State or District Purchase?
AZ	1,319	District Option	State Pays
AR	25,996	Required	State Pays
HI	8,077	Required	State Pays
IN	4,478	Required Subset	State Pays
KY	2,568	District Option	State Pays
MN	231	District Option	District Pays
NJ	12,504	District Option	State Pays
NC	1,436	District Option	State Pays
OH	44,002	District Option	State Pays
PA	10,845	Required Subset	State Pays
RI	2,658	District Option	State Pays
WA	238	District Option	District Pays
Total	114,352		

Operational Test Windows

- May 1–June 13, 2008:
first operational paper/pencil test
- December 8–19, 2008 & January 12–23, 2009:
both modes (first operational online test)
- May 1–June 12, 2009:
both modes

Lessons from First Administration

- Time for administration of each section
- Pre-meeting communications
- Travel logistics

- Comparability Study

Comparability Study

- Purpose: establish relationship between paper/pencil and online administrations
- Focus: compare performance of MC items administered in both modes
- Two groups within participating schools
 - One took paper/pencil version
 - One took online version

Results of Comparability Study

- Results indicated small and statistically non-significant differences between the paper/pencil and online groups.
- Study suggested the need for continued monitoring of paper/pencil and online performance, as the online operational test is introduced.

Reporting and Continued Research Support

The Research Alliance

- Members from diverse backgrounds: technical, policy, higher education
- how to interpret the results of the comparability study between the paper and online assessments
- what accommodations need to be considered
- what validity studies are required so that the exam gains credibility among postsecondary faculty
- how to ensure the standard setting process produces standards that truly indicate college readiness; and support the other purposes

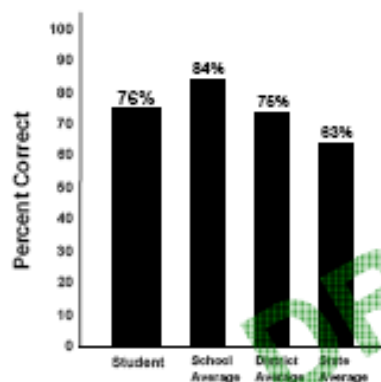
Reports of Results

- Reporting Raw Scores in 2008
- Standard Setting in Summer 2009

American Diploma Project Algebra II End-of-Course Exam

This report provides information about your student's performance on the American Diploma Project (ADP) Algebra II End-of-Course (EOC) Exam. This exam covers material your child will need to be ready for many freshman mathematics courses at 2- and 4-year colleges. For more information about the exam, please see page 2 of this report or the websites at the bottom of both pages.

How did ALYSSA perform on the exam?



Student's Total Percent Correct: 76%

Your student's overall performance on the ADP Algebra II End-of-Course Exam is shown to the left. The graph also shows how your student performed in comparison to other tested students in the same school, district, and state.

The Algebra II EOC exam includes multiple-choice, short-answer, and extended-response items. Over one-third of your student's score is based on the short-answer and extended-response items.

Students must respond to at least one multiple-choice item in section 1 and one multiple-choice item in section 2 to receive a score. If your student did not answer enough items to receive a score, the student bar will be replaced with "No Score Available."

NA^S = Student score is Not Available.
 NA^D = District information is Not Available.
 NAST = State information is Not Available.

ALYSSA'S performance in each content area

Algebra II EOC Content Standards*	Points Earned	Points Possible	Percent Correct
Operations on Numbers and Expressions	10	11	91
Equations and Inequalities	14	16	88
Polynomial and Rational Functions	14	22	64
Exponential Functions	10	15	67
Function Operations and Inverses	10	12	83
TOTAL	68	78	78

* Detailed descriptions of the ADP Algebra II End-of-Course Content Standards are listed on page 2 of this report.

Additional Resources and State Related Information

Visit *Achieve* online for more information about the exam at: www.achieve.org.
 For state specific information about the exam and other resources, please visit:
www.achieve.org/Algebra2stateinformation.

Content Standards

Operations on Numbers and Expressions

Successful students will be able to perform operations with rational, real, and complex numbers, using both numeric and algebraic expressions, including expressions involving exponents and roots. There are a variety of types of test items including some that cut across the objectives in this standard and require students to make connections and, where appropriate, solve contextual problems.

Equations and Inequalities

Successful students will be able to solve and graph the solution sets of equations, inequalities, and systems of linear equations and inequalities. The types of equations are to include linear, linear absolute value, quadratic, exponential, rational, radical, and higher order polynomials; the types of inequalities are to include linear and quadratic. There are a variety of types of test items including some that cut across the objectives in this standard and require students to make connections and, where appropriate, solve contextual problems. In contextual problems, students will be required to graph and interpret their solutions in terms of the context. (Contextual test items will be limited to inequalities, systems of equations and inequalities, and those equations that do not represent a function.)

Polynomial and Rational Functions

Successful students will be able to use tables, graphs, verbal statements and symbols to represent and analyze quadratic, rational, and higher order polynomial functions. They will be able to recognize and solve problems that can be modeled using these functions. There are a variety of types of test items including some that cut across the objectives in the standard and require students to make connections and solve rich contextual problems.

Exponential Functions

Successful students will be able to use tables, graphs, verbal statements and symbols to represent, analyze, model, and interpret graphs of exponential functions. While some facility with the properties of logarithms may be helpful, it is not required on the core exam. There are a variety of types of test items including some that cut across the objectives in the standard and require students to make connections.

Function Operations and Inverses

Successful students will be able to perform function operations of addition, subtraction, multiplications, division, and composition and to combine several functions defined over restricted domains to form a piecewise-defined function. They will be able to determine, graph and analyze the inverse of a function and use composition to determine whether two functions are inverses. There are a variety of types of test items including some that cut across the objectives in the standard and require students to make connections.

Additional Resources and Information from the Testing Company

Visit Pearson online

Go to the Pearson Access Web site at: www.PearsonAccess.com. Under the section "Does your State Have Access?" click on ADP in the drop-down menu and then the Support tab to access the ADP Algebra II EOC Exam Reporting Interpretive Guide and related content materials.

School Summary Report

American Diploma Project (ADP) Algebra II End-of-Course Exam – Spring 2008

School report for:
SCHOOL NAME MAXXX LEN 35 CHARACTERS

CDS Code: 12345678901234567890
DISTRICT NAME MAX LEN 35 CHARACTERS

ARKANSAS

STUDENT POPULATION/GROUP	Number of Students with Valid Scores	Average Percent Correct	AVERAGE PERCENT CORRECT BY CONTENT STANDARD				
			Operations on Numbers and Expressions	Equations and Inequalities	Polynomial and Rational Functions	Exponential Functions	Function Operations and Inverses
ALL STUDENTS	999,999	999	999	999	999	999	999
RACE/ETHNICITY							
African American or Black (not of Hispanic origin)	999,999	999	999	999	999	999	999
American Indian or Alaska Native	999,999	<	<	<	<	<	<
Chinese	999,999	999	999	999	999	999	999
Japanese	999,999	999	999	999	999	999	999
Korean	999,999	<	<	<	<	<	<
Vietnamese	999,999	<	<	<	<	<	<
Asian Indian	999,999	<	<	<	<	<	<
Laotian	999,999	<	<	<	<	<	<
Cambodian	999,999	<	<	<	<	<	<
Other Asian	999,999	<	<	<	<	<	<
Filipino	999,999	<	<	<	<	<	<
Hispanic or Latino	999,999	999	999	999	999	999	999
Native Hawaiian	999,999	<	<	<	<	<	<
Part-Hawaiian	999,999	<	<	<	<	<	<
Guamanian	999,999	<	<	<	<	<	<
Samoan	999,999	<	<	<	<	<	<
Tahitian	999,999	<	<	<	<	<	<
Other Pacific Islander	999,999	<	<	<	<	<	<
White (not of Hispanic origin)	999,999	999	999	999	999	999	999
Decline to state	999,999	999	999	999	999	999	999
GENDER							
Male	999,999	999	999	999	999	999	999
Female	999,999	999	999	999	999	999	999
IEP	999,999	999	999	999	999	999	999
504 PLAN	999,999	999	999	999	999	999	999
LEP/ELL	999,999	999	999	999	999	999	999

< indicates fewer than 10 students in this student population/group. No results are reported to protect the privacy of these students.

Bridging K-12 with Higher Ed

Inclusion of Higher Ed in

- Development
- Research Alliance
- Validity and other Research Studies

Thank You for Attending

Wes, Pat, Mark, John, Gayle, and Laura