Validating Nevada’s College Readiness Standards
Today’s Presentation

- **History** – how were Nevada’s College Readiness Standards established?

- **Data, data, and more data** – validating the standards
  - Statewide Longitudinal Data System (NPWR)
  - NSHE and NDE data
  - ACT data

- **Math Pathways** – some math is better than others

- **Science Pathways** – it’s not all about math 😊
The College Readiness Task Force

- An ad hoc 16-member task force – established in December 2009
- NSHE and the Nevada Department of Education led the way with the support of West Ed
- *IES Practice Guide: Helping Students Navigate the Road to College* provided the momentum for establishing college readiness standards for Nevada

The courses students take in high school have important consequences for their academic preparation and access to college.
Charge of the Task Force

. . . to identify and define
college readiness standards

Establishing a framework for communicating with students, parents, and high school counselor what it means to be college ready

. . . workforce standards were to come later
Background Work

- **Review of existing standards**
  - Millennium Scholarship
  - University admissions
  - NSHE remedial policy

- **Review of other state actions**
  - Outline of a High School Course of Studies (KY, KS)
  - Definition of Content Standards (TX, NE, VA)
  - Use of Standardized Tests (OK, KY)

- **State Scholars Initiative**
  - Recommends “two years of a language other than English”
The State Scholars Initiative is a national program, operating in states across the country, which utilizes business leaders to motivate students to complete a rigorous course of study in high school, one that will give them a boost in college and their careers.
“College readiness” means the demonstrated proficiency of a high school graduate to participate and succeed in an academic program leading to completion of a 2-year or 4-year college degree program.

Definition and standards ultimately codified in *Nevada Administrative Code 389.830 – 389.845*
1. The Nevada Advanced Diploma, and

2. At least 2 years of course work in the same foreign language or demonstrated proficiency to speak at least two languages.
## The Nevada Advanced vs. Standard Diploma

*Nevada Administrative Code 389.663 and 389.664*

<table>
<thead>
<tr>
<th>Courses</th>
<th>Units Advanced*</th>
<th>Units Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>English, including reading, composition, and writing</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Science</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>History/Social Science</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Arts &amp; humanities, or career and technical vocation</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Health education</td>
<td>½</td>
<td>½</td>
</tr>
<tr>
<td>Use of computers</td>
<td>½</td>
<td>½</td>
</tr>
<tr>
<td>Physical education</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL UNITS</strong></td>
<td><strong>18</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

*awarded after attainment of 3.25 GPA on a 4.0 grading scale*
National research shows that foreign language studies in high school have many benefits beyond the academic content of the courses themselves.

- Higher academic performance at the college level;
- Higher scores on standardized tests;
- Increased ability to hypothesize in science; and
- Improved linguistic skills, memory, problem-solving ability, and verbal and spatial abilities.

Source: American Council on the Teaching of Foreign Languages
The successful completion of the standards for college readiness (Advanced diploma + 2 years foreign language) is considered to be a strong indication that a student is ready to participate successfully as a freshman in college.

**Acquired Skill Set**

- Cognitive skills such as logical reasoning,
- Study habits and self-direction,
- Expectations for behavior in an academic environment, and
- Adequate test scores enabling a pupil to avoid being placed in remedial classes as a postsecondary student (*Title 4, Ch. 16, Sec. 1*).
DATA, DATA, DATA

Data used in this analysis

- **NDE data**: high school graduating class of 2014
  - 70% received Standard Diploma
  - 30% received Advanced Diploma

- **NSHE-wide data**

- **ACT scores from senior year administration**
  - 12th grade assessment only, not statewide assessment of all 11th graders

- **High school course taking patterns**

This data only scratches the surface, we are just beginning our analysis of the data . . . more to come.
What we plan to do next

- Race/ethnicity breakdown
- District breakdown
- Class of 2016 data – statewide administration of the ACT in junior year of high school – broader data set
- And more . . . . providing detailed data for policymakers and school districts
College Continuation Rates

Percent of Nevada High School Graduates who Continued to NSHE by Diploma Type Within the First Year Following Graduation
Class of 2014

<table>
<thead>
<tr>
<th>Diploma Type</th>
<th>% Continued to NSHE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>34.5%</td>
</tr>
<tr>
<td>Advanced</td>
<td>59.5%</td>
</tr>
</tbody>
</table>

Percent of Nevada High School Graduates who Continued to NSHE by Diploma Type + 2 years of a foreign language
Class of 2014

<table>
<thead>
<tr>
<th>Diploma Type</th>
<th>w/2 years foreign language</th>
<th>w/out 2 years foreign language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>44.6%</td>
<td>31.2%</td>
</tr>
<tr>
<td>Advanced</td>
<td>61.3%</td>
<td>57.8%</td>
</tr>
</tbody>
</table>
## College Continuation Rates

### Fall-to-Fall Persistence by Diploma Type
#### Class of 2014

<table>
<thead>
<tr>
<th>Diploma Type</th>
<th>Of those who Continued to NSHE, % Persisted to Fall 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>64.4%</td>
</tr>
<tr>
<td>Advanced</td>
<td>83.9%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diploma Type</th>
<th>w/2 years foreign language</th>
<th>w/out 2 years foreign language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>69.3%</td>
<td>62.1%</td>
</tr>
<tr>
<td>Advanced</td>
<td>85.7%</td>
<td>82.2%</td>
</tr>
</tbody>
</table>
Remedial Placement Rates

Placement Rates into Remedial Math and/or English by Diploma Type
Class of 2014

- Standard: 70.4%
- Advanced: 38.9%
Remedial Placement Rates

Placement Rates into Remedial English and Math by Diploma Type + two years of foreign language
Class of 2014

- Standard: 66.8% (with 2 years) vs. 35.4% (w/out 2 years)
- Advanced: 72.1% (with 2 years) vs. 42.4% (w/out 2 years)
### NSHE Credit Load (Enrollment) by Diploma Type
High School Class of 2014

<table>
<thead>
<tr>
<th>Completion Type</th>
<th>Enrolled in Less than 24 Credits During 1st Year at NSHE</th>
<th>Enrolled in 24 to 29 Credits During 1st Year at NSHE</th>
<th>Enrolled in 30 or More Credits During 1st Year at NSHE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Diploma</td>
<td>50.7%</td>
<td>30.2%</td>
<td>19.1%</td>
</tr>
<tr>
<td>Standard Diploma w/2 yrs FL</td>
<td>45.8%</td>
<td>32.6%</td>
<td>21.6%</td>
</tr>
<tr>
<td>Standard Diploma w/o 2 yrs FL</td>
<td>53.1%</td>
<td>29.0%</td>
<td>18.0%</td>
</tr>
<tr>
<td>Advanced Diploma</td>
<td>18.6%</td>
<td>29.8%</td>
<td>51.5%</td>
</tr>
<tr>
<td>Advanced Diploma w/2 yrs FL</td>
<td>16.1%</td>
<td>27.8%</td>
<td>56.1%</td>
</tr>
<tr>
<td>Advanced Diploma w/o 2 yrs FL</td>
<td>21.2%</td>
<td>31.8%</td>
<td>47.1%</td>
</tr>
</tbody>
</table>

FL = foreign language
Placement Rates into College-Level Math based on Highest Level Math Completed in High School (Class of 2014)

- Algebra II: 36.8%
- Probability and Statistics: 43.8%
- Trig and Pre-Calculus: 67.0%
- Trig, Pre-Calculus, and Probability & Statistics: 77.7%
- Calculus AP: 86.9%
- Calculus AP and Statistics AP: 90.8%

Average ACT Math Score (College Readiness = 22)
- Algebra II: 17.9
- Probability and Statistics: 18.8
- Trig and Pre-Calculus: 21.8
- Trig, Pre-Calculus, and Probability & Statistics: 23.3
- Calculus AP: 26.1
- Calculus AP and Statistics AP: 28.1

Years of math:
- 3
- 3-4
- 4
Placement Rates into College-Level Math based on Highest Level Math Completed in High School (Class of 2014)

- Trigonometry or Trigonometry Honors: 52.8%
- Pre-Calculus or Pre-Calculus Honors: 64.4%
- Trigonometry and Pre-Calculus: 67.0%
- Higher Level Mathematics Course: 81.7%

Years of math: 3-4, 4
Placement Rates into College-Level Math based on Highest Level Science Completed in High School (Class of 2014)

Average ACT Science Score
(College Readiness = 23)

- Biology or Biology Honors: 31.4%
- Chemistry or Chemistry Honors: 50.5%
- Physics or Physics Honors: 57.1%
- Chemistry and Physics (incl honors): 66.1%
- Chemistry AP: 83.2%
- Physics AP: 92.0%
Placement Rates into College-Level Math based on Highest Combined Levels of Math & Science Completed in High School (Class of 2014)
Most Common Math & Science (highest) Completed in High School for Students Enrolling as STEM Majors at NSHE Institutions One Year Following High School Graduation (High School Class of 2014)

<table>
<thead>
<tr>
<th>Math / Science</th>
<th>Percent of Students who Continued to NSHE that Majored in STEM</th>
<th>Percent of STEM Majors who Persisted to Following Fall in STEM Major</th>
<th>Average ACT Math</th>
<th>Average ACT Science</th>
<th>Placed into College Level Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algebra II / Biology</td>
<td>34.0%</td>
<td>51.3%</td>
<td>16.5</td>
<td>17.6</td>
<td>30.6%</td>
</tr>
<tr>
<td>Trig &amp; Pre-Calculus / Chem</td>
<td>39.5%</td>
<td>77.9%</td>
<td>21.2</td>
<td>20.6</td>
<td>61.7%</td>
</tr>
<tr>
<td>Probability &amp; Stats / Chem</td>
<td>42.9%</td>
<td>70.7%</td>
<td>18.4</td>
<td>19.1</td>
<td>43.1%</td>
</tr>
<tr>
<td>Trig &amp; Pre-Calculus / Chemistry &amp; Physics</td>
<td>48.1%</td>
<td>77.1%</td>
<td>22.3</td>
<td>22.0</td>
<td>75.2%</td>
</tr>
<tr>
<td>Calculus AP / Chemistry &amp; Physics AP</td>
<td>72.7%</td>
<td>84.6%</td>
<td>28.1</td>
<td>26.6</td>
<td>96.2%</td>
</tr>
</tbody>
</table>
## College Readiness Assessment

### Average ACT Scores* by Diploma Type (Class of 2014)

<table>
<thead>
<tr>
<th></th>
<th>Number Students</th>
<th>Math</th>
<th>English</th>
<th>Science</th>
<th>Reading</th>
<th>Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard</strong></td>
<td>2,441</td>
<td>18.6</td>
<td>17.4</td>
<td>19.0</td>
<td>19.4</td>
<td>18.7</td>
</tr>
<tr>
<td><strong>Advanced</strong></td>
<td>3,370</td>
<td>23.4</td>
<td>22.7</td>
<td>23.0</td>
<td>23.9</td>
<td>23.4</td>
</tr>
<tr>
<td><strong>College Readiness Benchmark</strong></td>
<td>--</td>
<td>22</td>
<td>18</td>
<td>23</td>
<td>22</td>
<td>n/a</td>
</tr>
</tbody>
</table>

**College Readiness Benchmark Scores** – a benchmark score is the minimum score needed on an ACT subject-area test to indicate a 50% chance of obtaining a B or higher or about a 75% change of obtaining a C or higher in the corresponding credit-bearing college courses, which include English Composition, Algebra, Social Science and Biology. Benchmarks are empirically derived based on nationwide ACT data using actual performance of students in college.

*Average Scores include highest score achieved on each subject area for those with more than one test administration reported.*
### College Readiness Assessment

#### Average ACT Scores* by Diploma Type (Class of 2014)

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<td>18.6</td>
<td>17.4</td>
<td>19.0</td>
<td>19.4</td>
<td>18.7</td>
</tr>
<tr>
<td>w/2yrs FL</td>
<td>793</td>
<td>19.0</td>
<td>18.0</td>
<td>19.2</td>
<td>19.2</td>
<td>19.2</td>
</tr>
<tr>
<td>w/o 2 yrs FL</td>
<td>1,648</td>
<td>18.4</td>
<td>17.1</td>
<td>18.9</td>
<td>18.9</td>
<td>18.5</td>
</tr>
<tr>
<td>Advanced</td>
<td>3,370</td>
<td>23.4</td>
<td>22.7</td>
<td>23.0</td>
<td>23.9</td>
<td>23.4</td>
</tr>
<tr>
<td>w/2yrs FL</td>
<td>1,744</td>
<td>23.9</td>
<td>23.2</td>
<td>23.3</td>
<td>24.2</td>
<td>23.8</td>
</tr>
<tr>
<td>w/o 2 yrs FL</td>
<td>1,626</td>
<td>22.9</td>
<td>22.2</td>
<td>22.6</td>
<td>23.5</td>
<td>22.9</td>
</tr>
<tr>
<td>College Readiness Benchmark</td>
<td>--</td>
<td>22</td>
<td>18</td>
<td>23</td>
<td>22</td>
<td>n/a</td>
</tr>
</tbody>
</table>

FL = foreign language

*Average Scores include highest score achieved on each subject area for those with more than one test administration reported.
Conclusions

- Students are less likely to require remediation and more likely to continue on to college with an **Advanced** diploma compared to the **Standard** diploma.

- Students with an **Advanced** diploma on average achieve college readiness benchmarks defined by ACT, **Standard** diploma recipients do not.

- Two years of a **foreign language** give students an additional edge when it comes to college readiness.

- Not all **math** is created equal in terms of preparing students for college – more and higher levels of math is always better.

- More analysis to do . . . stay tuned!
www.nevada.edu
College Readiness by Diploma Type Data Tables