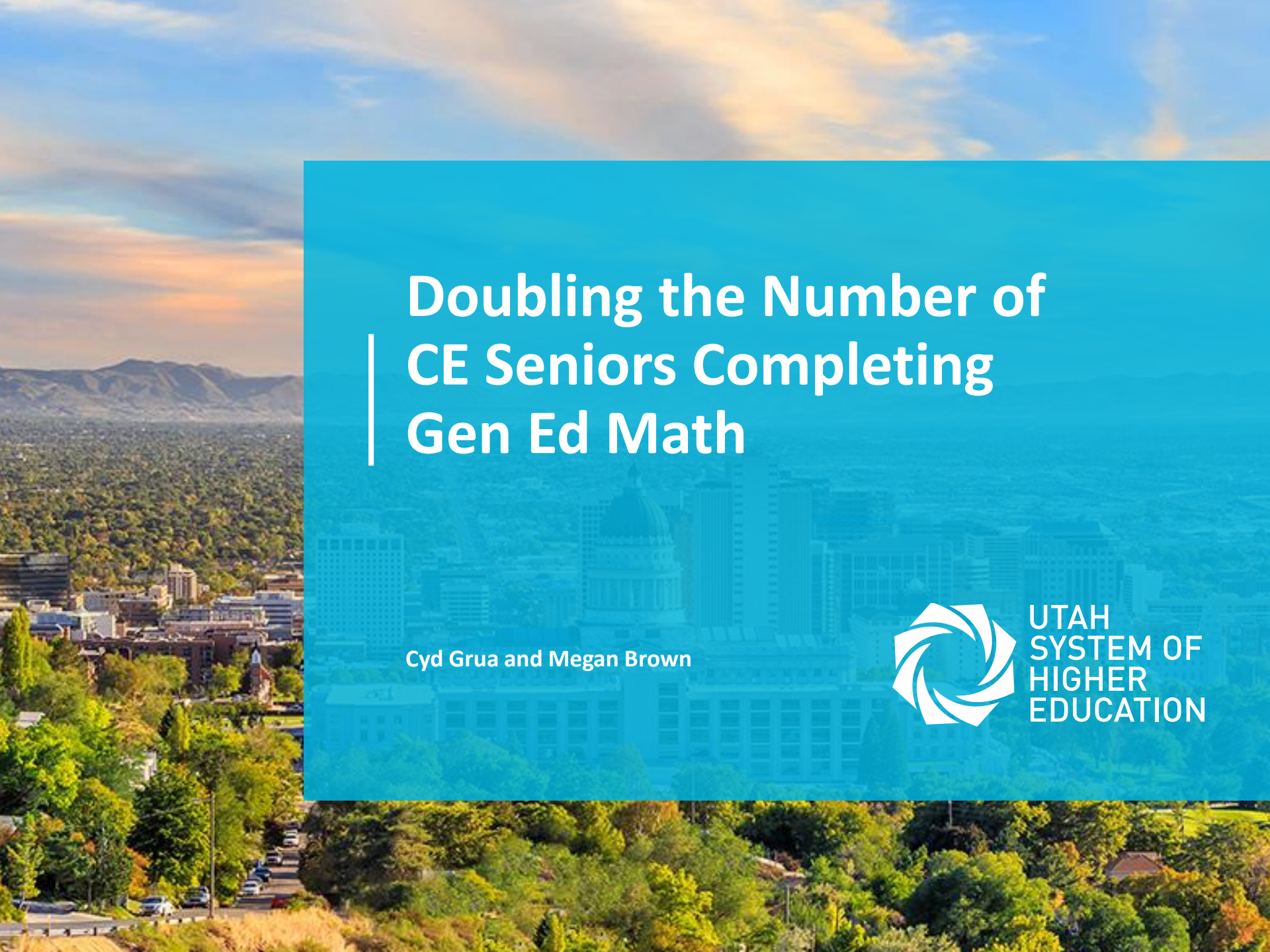


Doubling the Number of CE Seniors Completing Gen Ed Math

Cyd Grua and Megan Brown

UTAH SYSTEM OF HIGHER EDUCATION

Presentation Outline

- 20 minutes: Utah System of Higher Education (USHE) on state math initiatives
- 20 minutes: Utah Valley University (UVU) on institution implementation
- 20 minutes: Panel Discussion and Questions

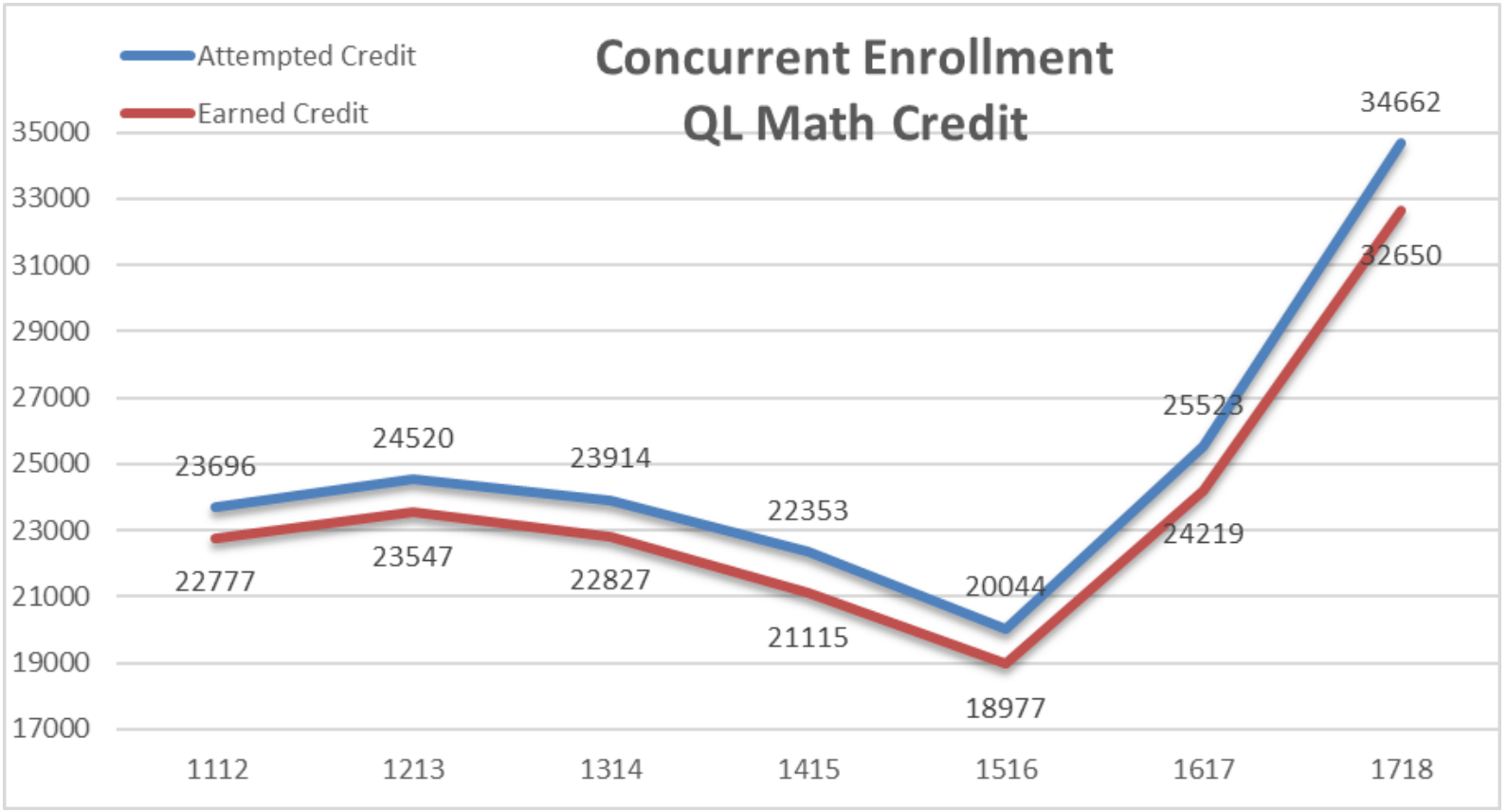
Presentation Outline - USHE

- CE Math Legislation
- Three-year results
- Responses to legislation:
  - Increase number of CE math offerings
  - Recruit high school seniors to take CE math
  - Check the results – teacher and student surveys

SB196 Math Competency Initiative

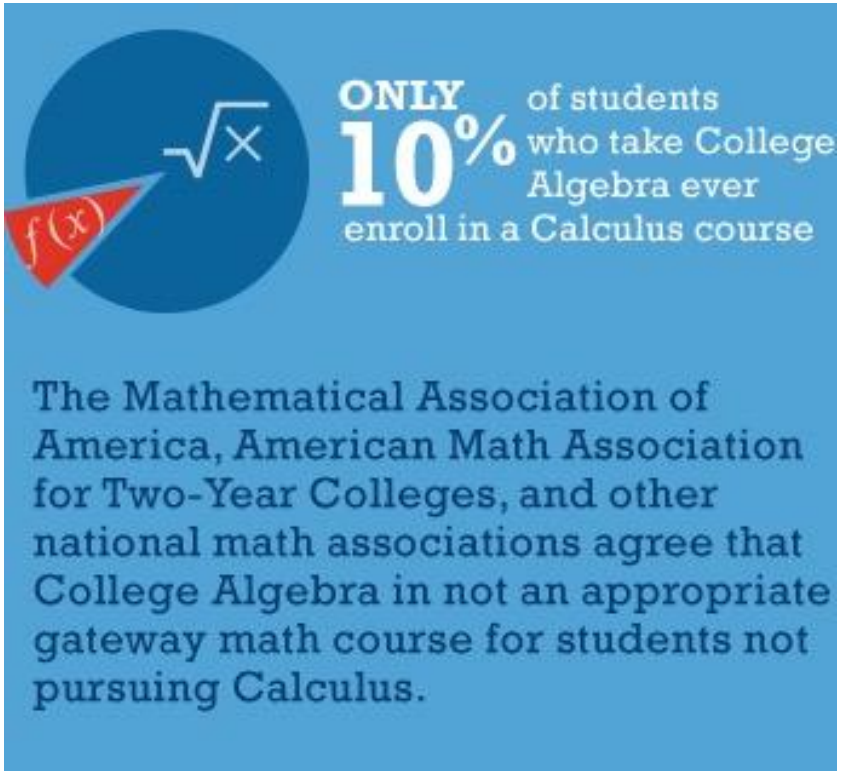
- Utah legislation passed in 2015
- Challenge: get more students to finish college general education math, Quantitative Literacy (QL), prior to graduating high school
- USHE focused on concurrent enrollment (CE) – bill *allows students who complete required high school mathematics courses with a "C" or better entry into a CE math course*
- Fiscal note of $1.925 million ongoing

Three-year Results



Response 1: Increase Number of CE QL Math Offerings

- Mirror national conversations on the appropriate math class for college students
- Three QL classes in USHE catalogs since 1995 but a majority of students still taking MATH 1050 *College Algebra*



Increase Number of CE QL Options Offered by Each Institution

- 8 institutions in the USHE system
- Campus discussions around mapping QLs to academic programs
- Goal: have each USHE institution offer at least two different QLs through CE

USHE Institutions offering primary QL Math courses

Blue = offered FY15

Green = New offer since FY16

	1030	1040	1050
UU	X	X	X
USU		X	X
WSU	X		X
SUU	X	X	X
Snow	X	X	X
DSU	X	X	X
UVU	X	X	X
SLCC	X	X	X

**LEAs in the USU and WSU service areas may use a Right of First Refusal to offer 1040 and 1030, respectively, in the other institution's service area.*

Increase Number of Sections Offered by Existing CE Math Teachers

- A majority of CE math teachers are high school teachers with adjunct status
- SB196 identified “Level IV” math teachers qualified to teach CE Math – only 150 of 1200 teach
- Incentive program to buy teacher prep period to teach an extra CE QL section (MATH 1030 *Quantitative Reasoning*, 1040 *Intro to Statistics*, or 1050 *College Algebra*)
- SUCCESS: Spring 2017 – Spring 2019: 148 extra sections, ~2,940 students enrolled

Increase Number of Teachers Qualified to Teach CE Math

- USHE Math Teacher Preparation Grant– institutions apply for SB196 funding
  - Instructor of Record model – teachers with Level IV math endorsement can teach CE course but grading and grades recorded by institution faculty; various levels of training and supervision
  - Institutions offer tuition support to incentivize teachers to pursue a Masters in Mathematics or 18 graduate credit hours

New Funding Opportunity

- Closed Teacher Prep grant after year 3
- Opened new opportunity for institutions to choose:
  - Continue to offer tuition assistance
  - Contract with teachers to teach their prep period
  - Continue to support the Instructor of Record model and CE Math coordinators
  - Propose new activity
- Single-focused Goal: increase number of students enrolling in CE Math

Response 2: Recruiting High School Seniors to Take CE Math

- Evaluated existing high school and higher education advising messages around math
- Advising Dilemma: Default to MATH 1050 to "keep options open"? No!
  - One USHE 4-Year Institution looked at all degree-seeking enrollments since 2006
  - The majority of students complete within their initial college meta-major
  - Students are 3 ½ times more likely to transfer out of STEM than into it
  - Only 2.9% transferred into a STEM degree

Exploratory Major Pathways

- Advising document explains the three QL options: MATH 1030, MATH/STAT 1040, MATH 1050
- Based on career interest personality, gives options for CE classes in that area, or an exploratory pathway
- Recommends a QL for the exploratory pathway
- Presented to multiple counselor conferences

Exploratory Pathway by Interest Personality	Recommended CE Survey Classes	GenEd*	Institutions Offering CE Class						
CONVENTIONAL "Organizers" Recommended QL: MATH 1050	BA/BSAD/BUS/BUSN/MGMT 1010 (3 credits) Intro to Business/Business Principles	SS	USU	1	SUU	1		UVU	2
	BUS/BUSN/FIN various numbers (3 credits) Personal Finance	SS	1		SUU	Snow	DSU	UVU	1
	ECON 1010 (ECN 1500 at USU) (3 credits) Economics as a Social Science/Economic Institutions	SS	3		SUU			UVU	SLCC

Response 3: Checking the Results – Teacher and Student Surveys

- 199 high school math teachers throughout state participated in the teacher survey
- 2,291 seniors in 11 high schools participated in the student survey

Teacher Survey Results

Why do teachers choose to teach a CE math course?

#1 reason was because the principal asked them to

- Other top reasons:
  - Like teaching college-level mathematics classes
  - Like teaching more academically engaged students
  - Like helping students earn college credit
- Top reasons teachers are not interested in teaching CE math:
  - USHE adjunct requirements keep changing
  - Teachers feel micromanaged/do not feel respected by faculty
  - Prefer teaching different mathematics classes including AP

Teacher Survey Results

How might institutions and LEAs recruit more Level IV teachers to instruct CE math?

- Extoll benefits of CE QL senior mathematics to principals and other administrators who decide teaching assignments
- Clearly articulate and outline the requirements to teach CE math
- Consider that teachers are interested in teaching CE mathematics classes because of: highly motivated students, to help students earn college credit, and desire to teach higher level mathematics
- Respect high school teachers by involving them in decisions about curriculum, assessments, and instruction
- Develop IOR models that afford successful adjunct teachers greater autonomy

Student Survey Results

What advice would students give to future students about senior year math?

- Taking college math classes senior year is worth it especially if you are going to college
- Do what works best for them
- Be consistent in your studies (e.g. listen to the teacher, complete assignments, and ask for help when needed)
- Challenge yourself and take a college math course

Student Survey Results

- 83% of seniors indicated that someone talked to them about taking a math course senior year. The most influential people in making the decision were, in order:
    - High school counselors
    - Parents
    - Math teachers

Student Survey Results

- Top 5 reasons for taking a CE math course senior year
  - College credit requirements*
  - Saving money on tuition*
  - Improve transcript when applying to colleges*
  - Graduate from college early or on-time
  - Great CE math teacher

**Same top three reasons for taking AP Math.*

Student Survey Results

- Top 5 reasons ***not*** to take a math class senior year
  - Not required
  - Wanted an easy senior year
  - Student doesn’t like math
  - Concerned about impact on GPA
  - Did not like the math teacher

Student Survey Results

What info could help students make a decision about taking math senior year? Thematic comments include:

- Counselors need to give more info about the specific math requirements for different college degrees
- Students wish to make the decision to enroll or not enroll in math senior year
- Highlighting money saved on tuition by taking math senior year

Students overwhelmingly said that emphasizing the benefits of taking math senior year -- no gap, keep skills up, complete college math requirements in high school -- would help in deciding whether to take math senior year

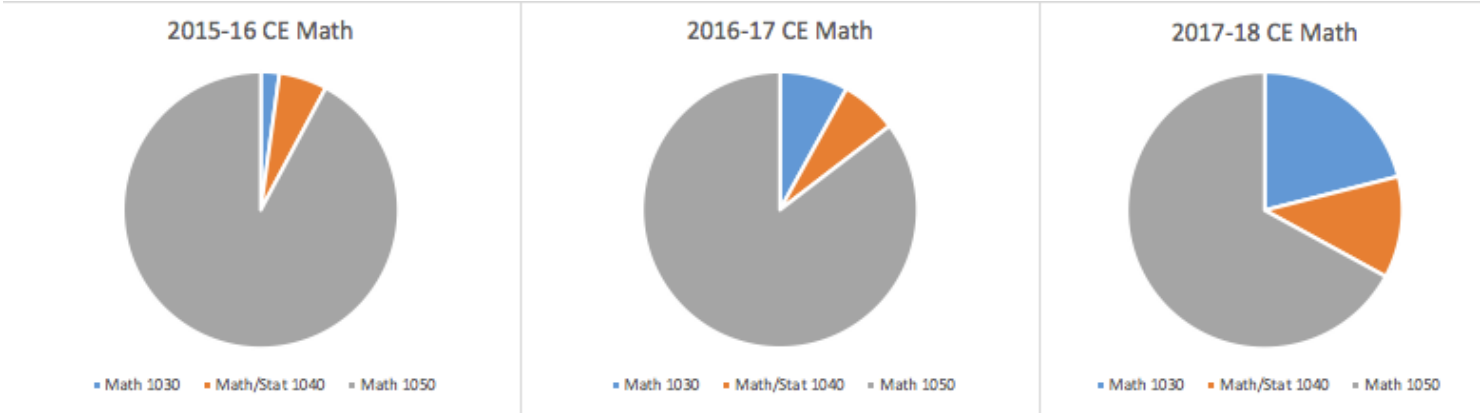
Student Survey Results

How might institutions and LEAs recruit more students to take senior math?

- ID and challenge eligible students to take senior math
- Use various advising pathway docs to reduce confusion on which math is the best choice
- Include influencers, like parents, in discussion about senior math
- Hype senior math to sophomores

SB196 Lessons Learned

- You can accelerate CE enrollments beyond predicted self-selection growth.
- You can influence CE course taking.



Thank You

- This PowerPoint and other resources can be found on UtahCE.org under Concurrent Enrollment Resources.
- Contact Info:
  - Cyd Grua cgrua@ushe.edu
  - Megan Brown mbrown@ushe.edu

UVU UTAH VALLEY UNIVERSITY™

Doubling the Number of CE Seniors Completing Gen Ed Math: UVU's Implementation

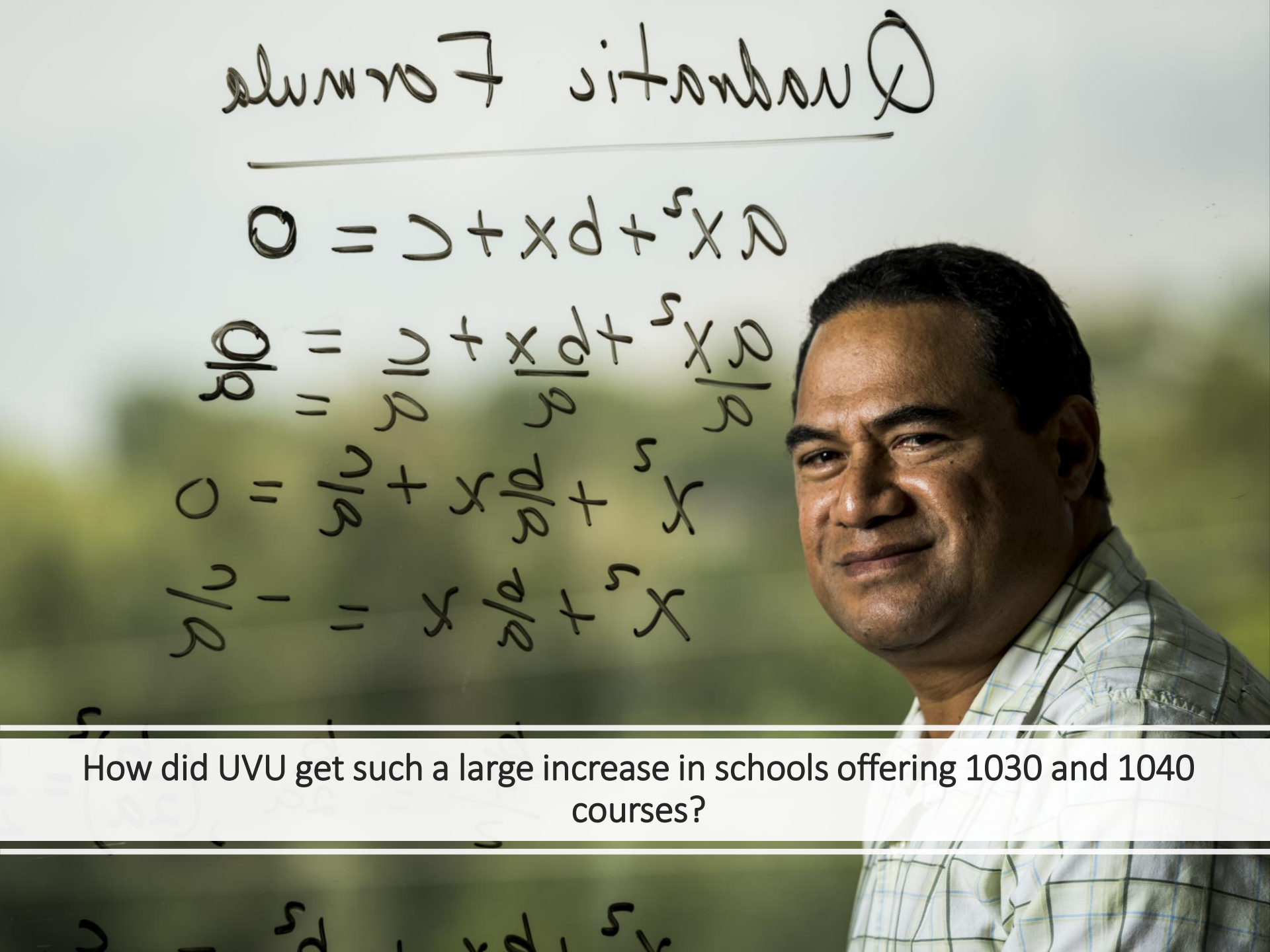
Increase Number of CE QL Math Offerings

2016-2017

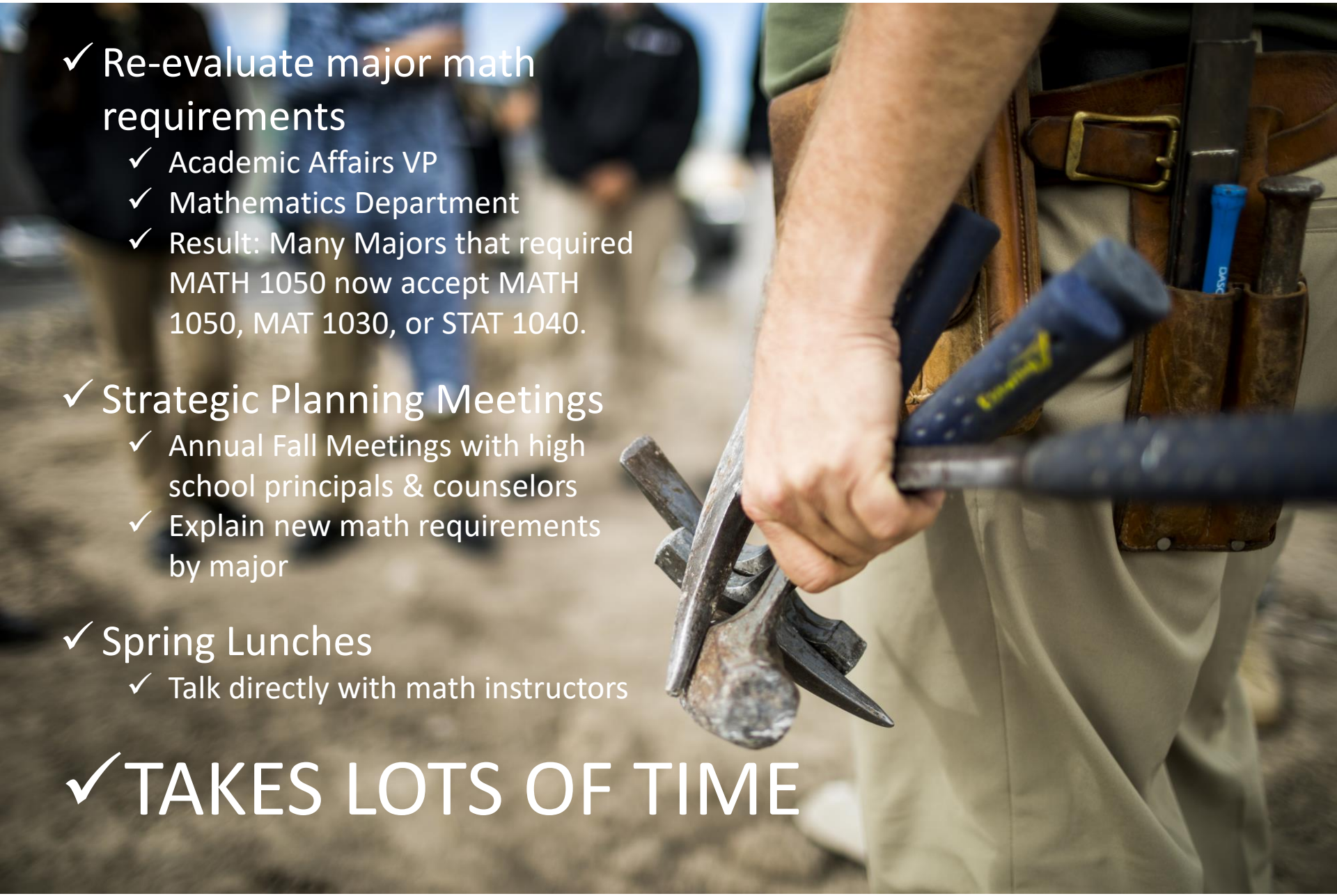
Math	Teachers	Schools
1050	26	21
1030	0	0
1040	1	1

2019-2020

Math	Teachers	Schools
1050	35	26
1030	17	15
1040	8	8

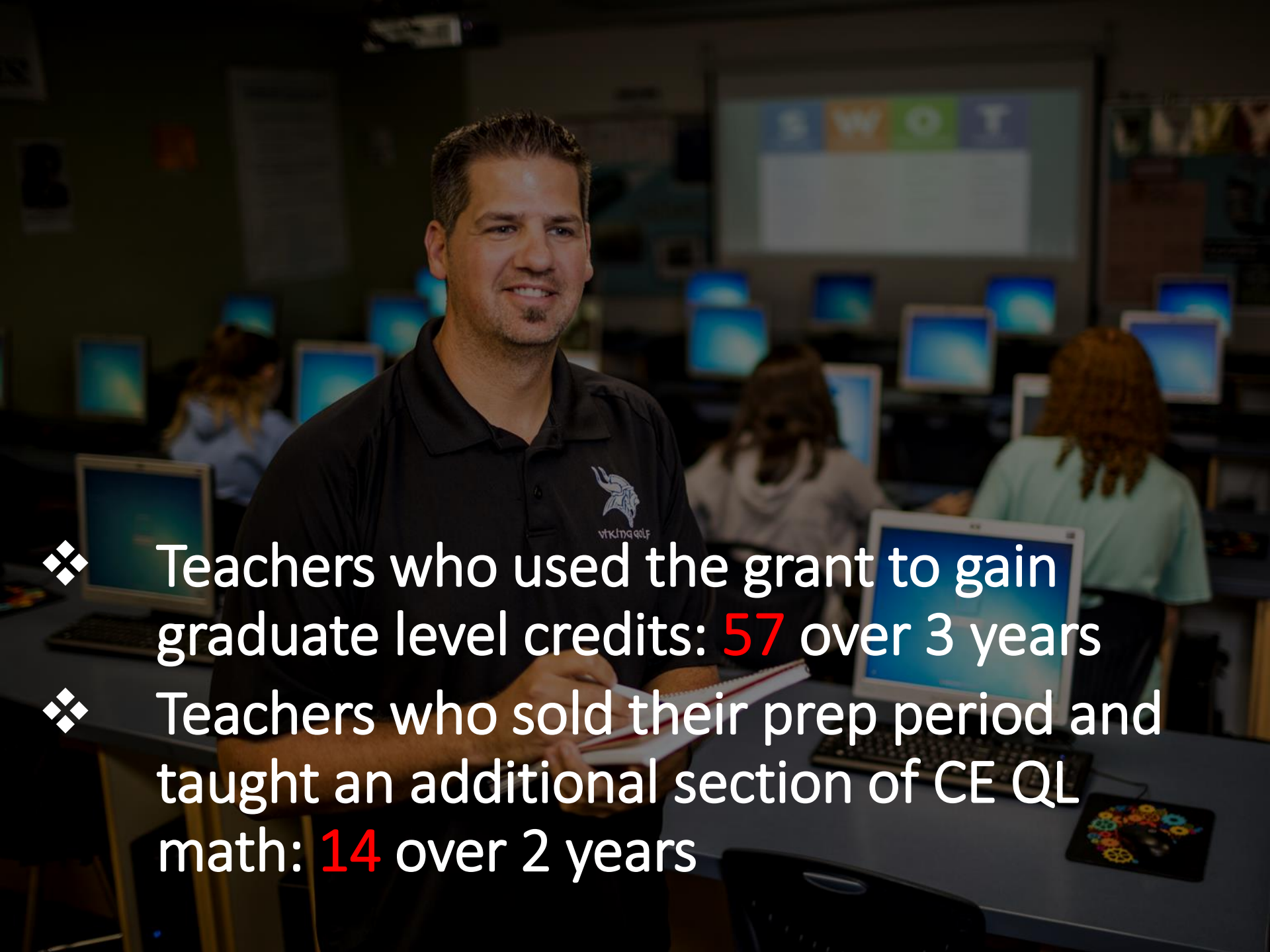


How did UVU get such a large increase in schools offering 1030 and 1040 courses?



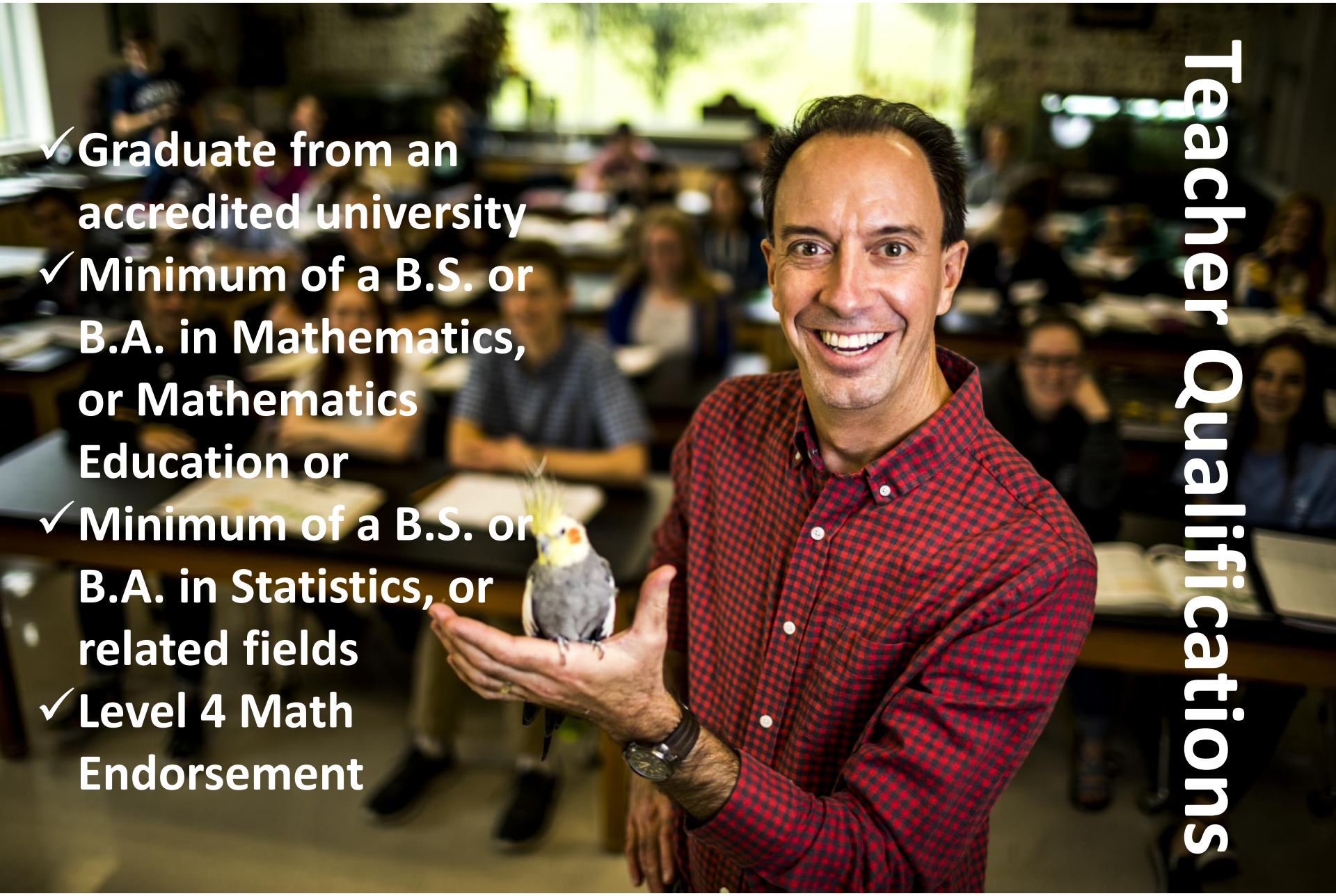
- ✓ Re-evaluate major math requirements
  - ✓ Academic Affairs VP
  - ✓ Mathematics Department
  - ✓ Result: Many Majors that required MATH 1050 now accept MATH 1050, MAT 1030, or STAT 1040.
- ✓ Strategic Planning Meetings
  - ✓ Annual Fall Meetings with high school principals & counselors
  - ✓ Explain new math requirements by major
- ✓ Spring Lunches
  - ✓ Talk directly with math instructors

✓TAKES LOTS OF TIME



- Teachers who used the grant to gain graduate level credits: 57 over 3 years
- Teachers who sold their prep period and taught an additional section of CE QL math: 14 over 2 years

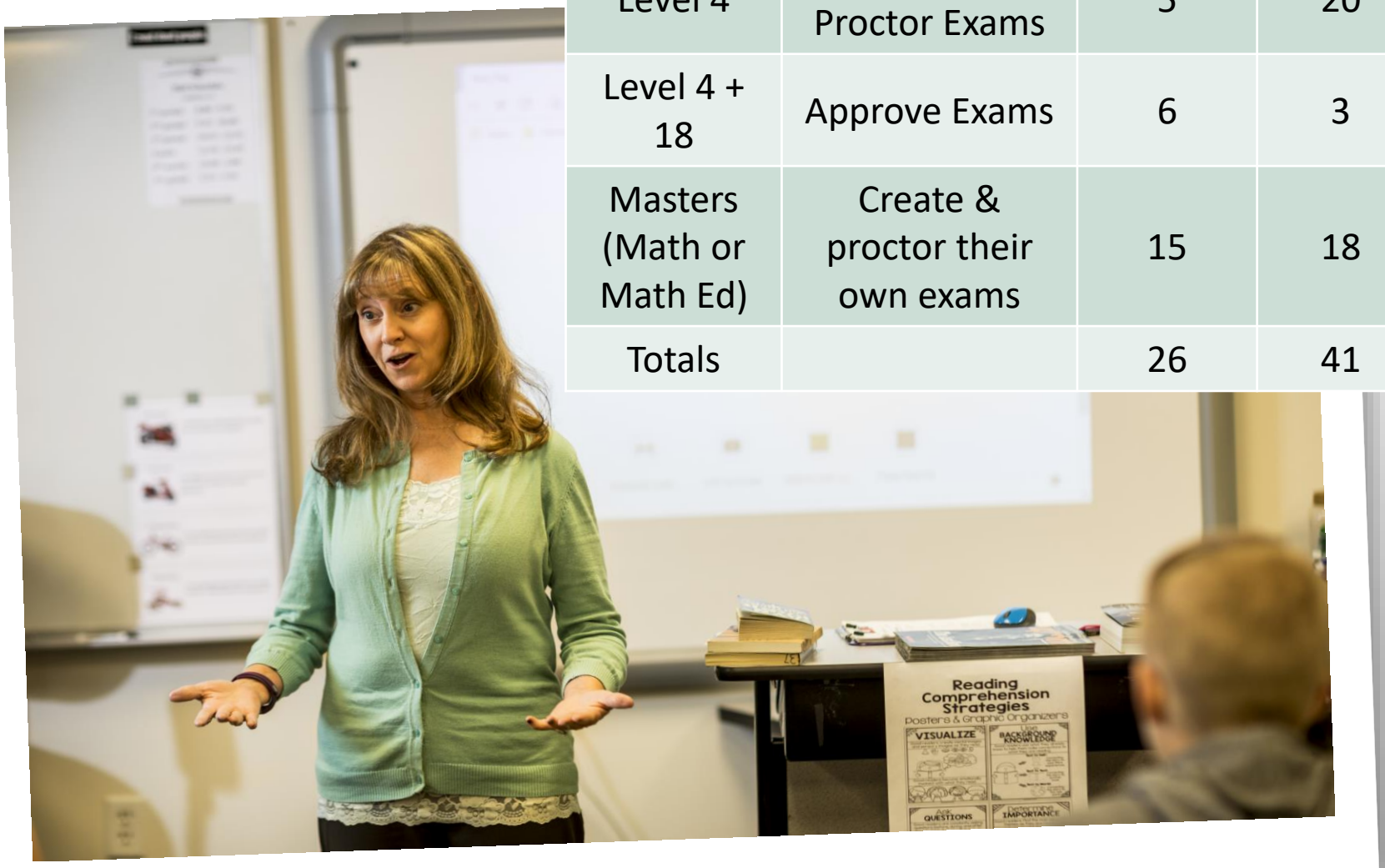
Teacher Qualifications



- ✓ Graduate from an accredited university
- ✓ Minimum of a B.S. or B.A. in Mathematics, or Mathematics Education or
- ✓ Minimum of a B.S. or B.A. in Statistics, or related fields
- ✓ Level 4 Math Endorsement

MATH 1050 & STAT 1040

Qualifier	Oversight	2016-17	2019-20
Level 4	Provide & Proctor Exams	5	20
Level 4 + 18	Approve Exams	6	3
Masters (Math or Math Ed)	Create & proctor their own exams	15	18
Totals		26	41



Math 1030 does not make distinctions between qualifying levels. The Developmental Math Department implements the same level of oversight for all CE MAT 1030 instructors

Site Visits

- The site visit purpose is to ensure that the high school course being taught is consistent in course content, course delivery, and student assessment with the corresponding UVU on-campus course
- The site visit encourages continuing communication and collegial interaction between the high school instructor and the UVU department faculty.
- “New” instructors (first 3 years teaching CE) are visited every year
- “Veteran” instructors (4+ years teaching CE) can be visited once every other year with a phone call visit on the off years
- CE office will pay for up to two site visits per school year
- CE pays mileage reimbursement for site visits, but not for phone visits
- Liaisons must document site and phone visits with the respective form
- The visits are relationship building opportunities
- Site visits must include class instruction time

UTAH VALLEY UNIVERSITY

Concurrent Enrollment Report - MAT 1010		
Teacher's Name:	**High School:**	**Date:**

Textbook	
Title/Author	
Years in Use	
Course Structure	
Course duration	
Prerequisite	
No. sec/No.Students	
Technology	
Homework/Quizzes	
Chapter Tests	
Final Exam	
Course Grading (%)	
Homework	
Quizzes	
Chapter Tests	
Final Exam	
Other	
Faculty Comments	

HS Signature_____ UVU Signature_____

UVU CONCURRENT ENROLLMENT
UTAH VALLEY UNIVERSITY

HIGH SCHOOL SITE VISIT FORM

The purpose of the site visit is to ensure that the high school course being taught is consistent in course content, course delivery, and student assessment with the corresponding UVU on-campus course. The visit encourages continuing communication and collegial interaction between the high school instructor and the UVU department faculty.

Date of visit: _____ Course Title: _____

UVU Department: _____ UVU ID: _____

UVU Faculty: _____ UVU Faculty Direct Supervisor: _____

High School: _____ Instructor Visited: _____

CURRICULUM

☐ The department-approved course syllabus and textbook are used.

CONCURRENT ENROLLMENT INSTRUCTOR

☐ Instruction is at a collegiate level and the delivery method corresponds with department criteria.

ASSESSMENT

☐ Students are actively engaged in presentation, discussion and assigned work.

☐ Student Assessments are rigorous and employ the same methods as on campus.

Observation notes:

_____

_____

_____

_____

_____

_____

Collaboration, questions, concerns, or requests from high school instructor:

_____

_____

_____

_____

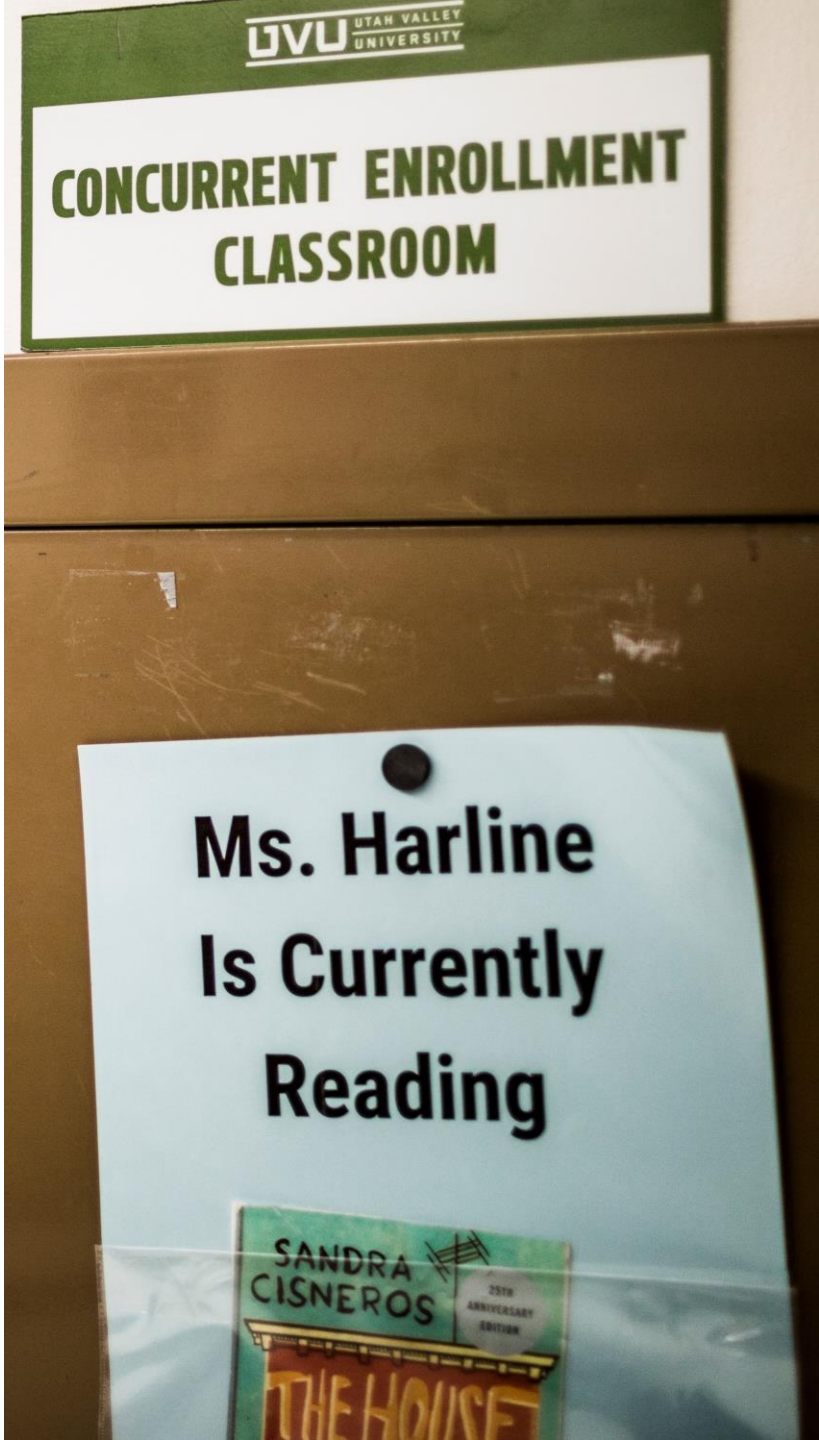
_____

_____

Concurrent Enrollment Instructor Signature: _____ Date: _____

UVU Faculty Signature: _____ Date: _____

Revised 4/2019



Recruiting High School Seniors to Take CE Math

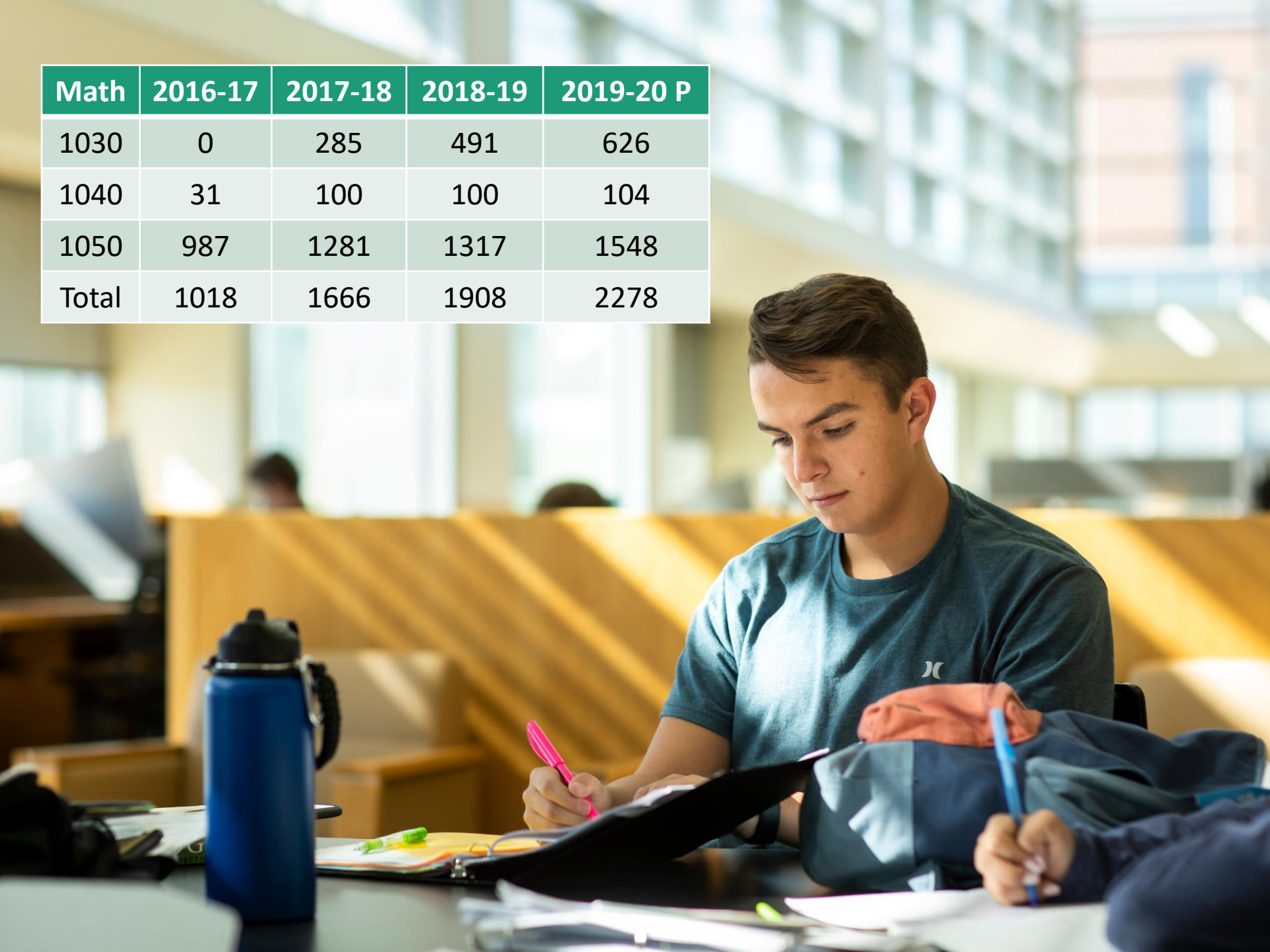
CE QL Math Pre-requisites

- Math 1030/Statistics 1040
  - Complete Secondary Math 1, 2, & 3 courses with a C average each year

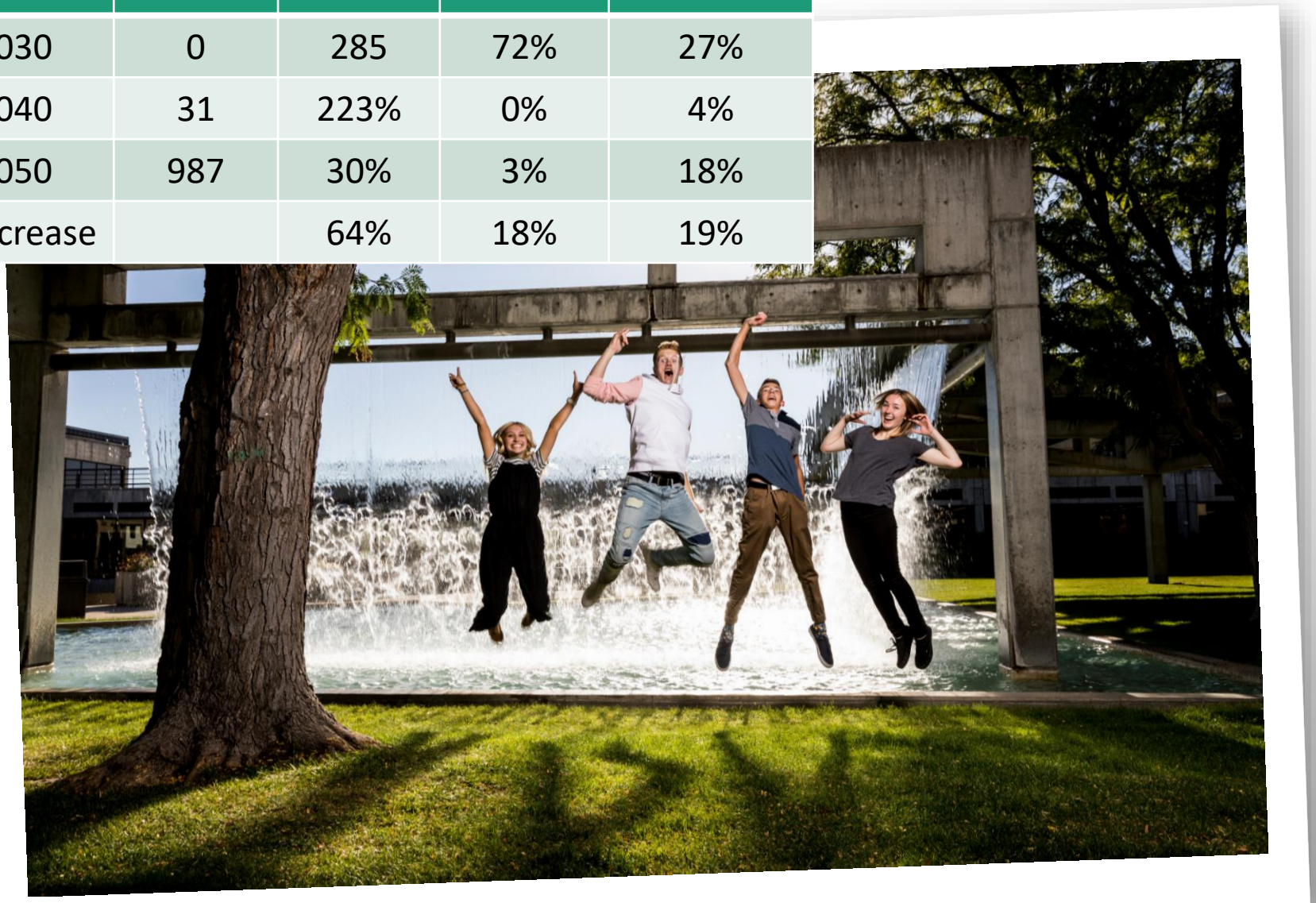
- Math 1050
  - Complete Secondary Math 1, 2, & 3 courses with a C average each year and
  - Have a math ACT score of 23+ or a grade of C or better from a Math 1010 course

Due to pre-requisites, the vast majority of students taking QL math courses through CE are high school seniors

Math	2016-17	2017-18	2018-19	2019-20 P
1030	0	285	491	626
1040	31	100	100	104
1050	987	1281	1317	1548
Total	1018	1666	1908	2278



Math	2016-17	2017-18	2018-19	2019-20 P
1030	0	285	72%	27%
1040	31	223%	0%	4%
1050	987	30%	3%	18%
% Increase		64%	18%	19%



Growth Percentages

UVU VS CE PASSED MAT1010

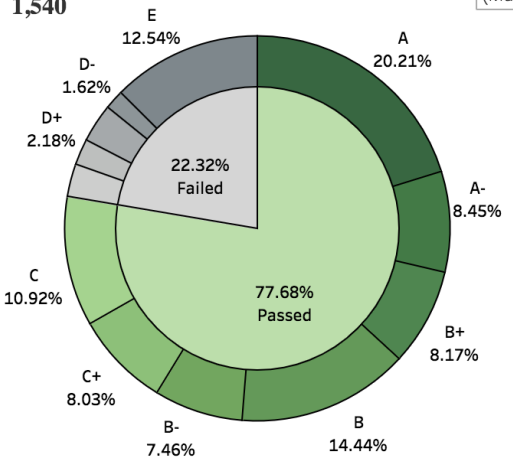
Comparison of Success In MAT1010

** For the purpose of comparing success in MAT 1010 for Concurrent Enrollment Students and UVU Enrollment Student. Both student pass rate and letter grade may be seen.

Calendar Year

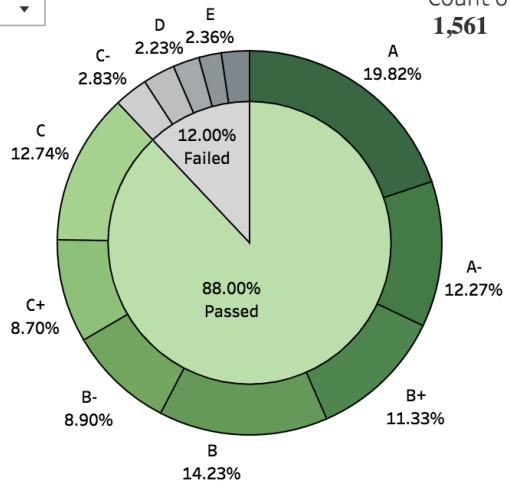
(Multiple values)

Count of Students:
1,540



UVU Enrollment Student Success

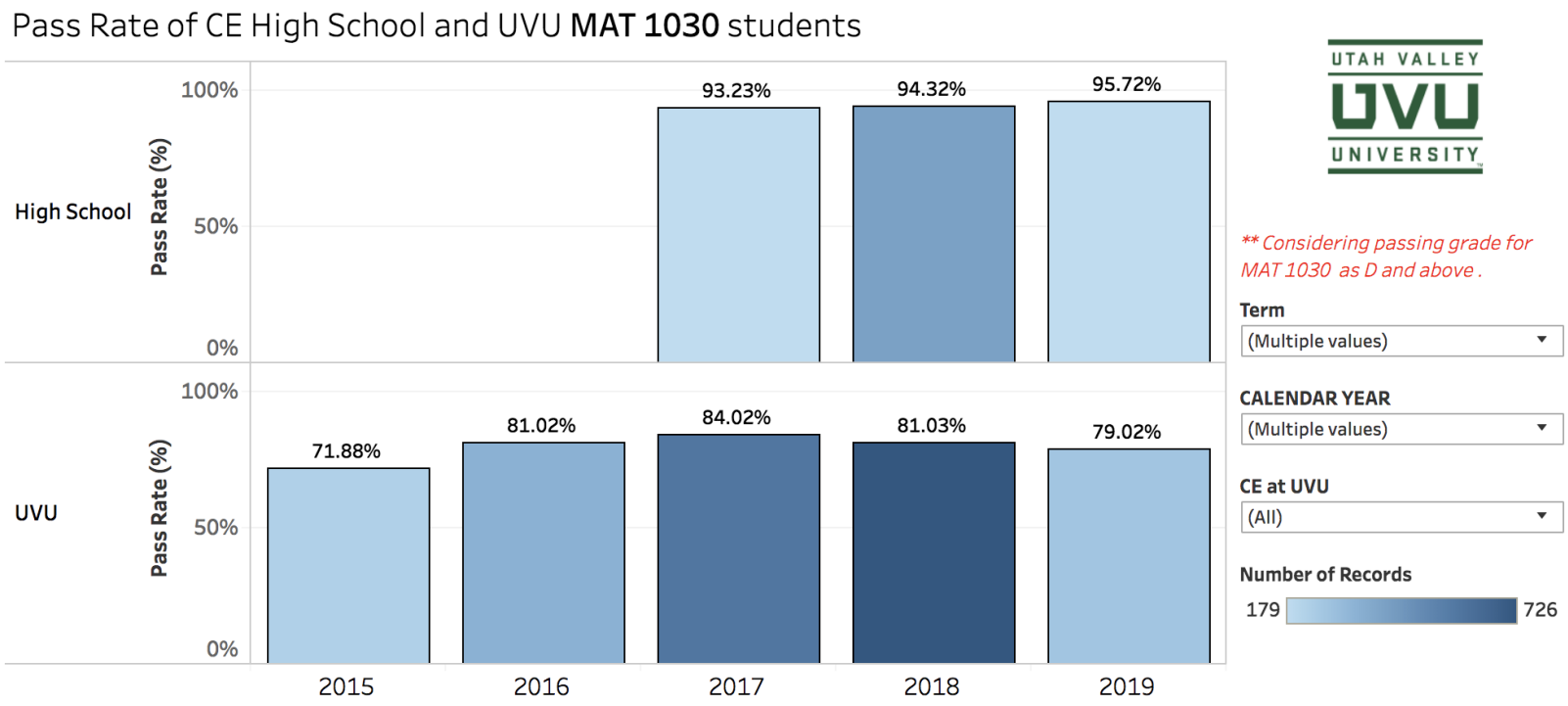
Count of CE Students:
1,561



Concurrent Enrollment Student Success

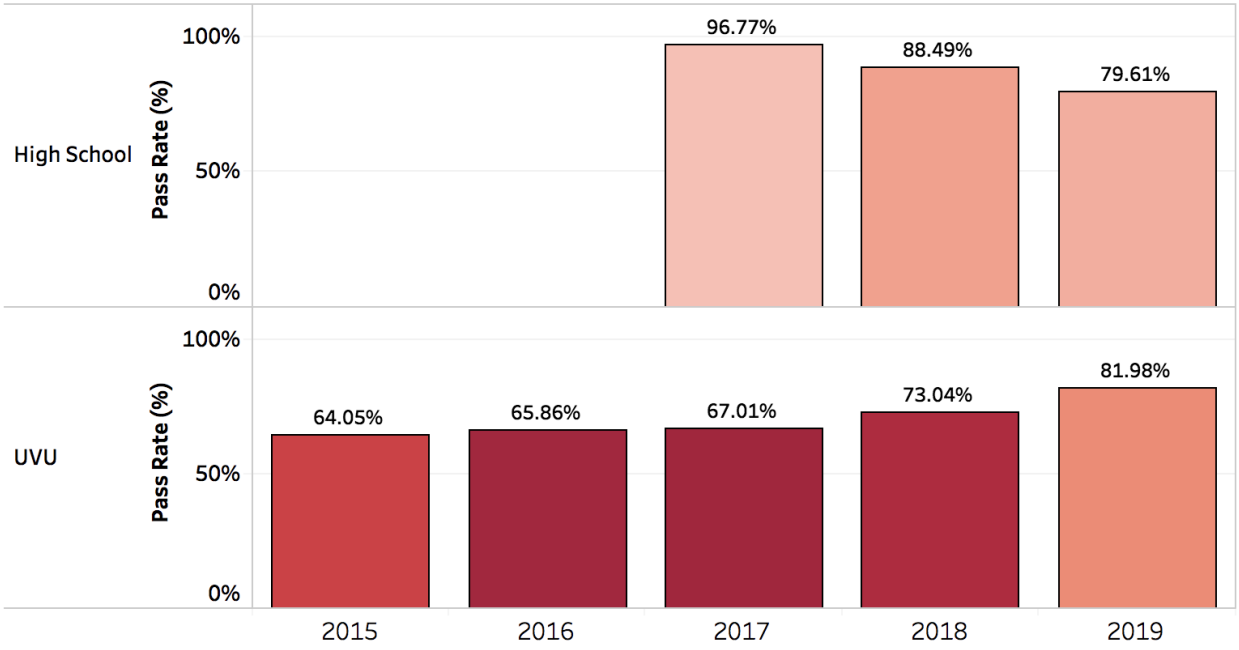
** Use the filters to select which calendar years should be included

UVU VS CE PASSED MAT1030



UVU VS CE PASSED MAT1040

Pass Rate of CE High School and UVU **MAT/STAT 1040** students



UTAH VALLEY UVU UNIVERSITY

*** Considering passing grade for MAT/STAT 1040 as C and above .*

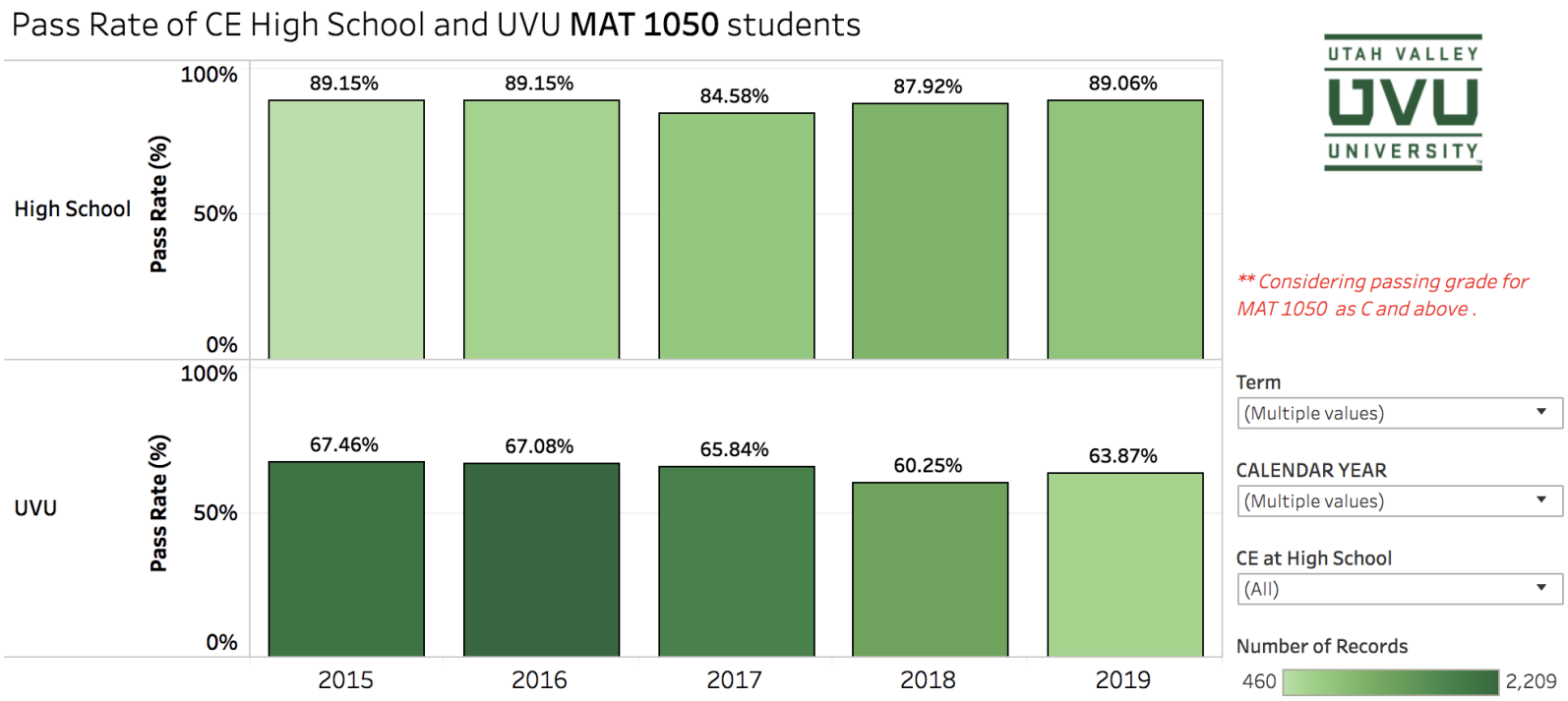
SUBJECT DESC
(All)

Term
(Multiple values)

CALENDAR YEAR
(Multiple values)

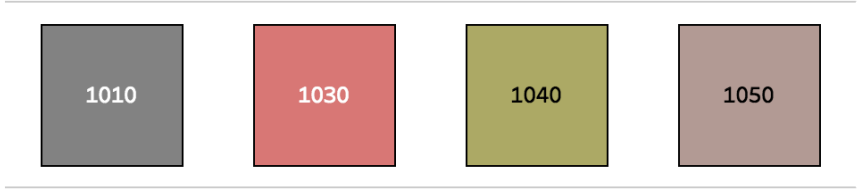
CE at High School
(All)

UVU VS CE PASSED MATH1050



CE Students Ethnicity and UVU Population

Click on each square (Course) to filter out data



Ethnicity

(All)