

Implementing Change on Campus: Building a Learning Analytics Culture & Practice

Mark Largent

Associate Dean of Undergraduate Studies &
Director of Learning Analytics
Michigan State University

UNIVERSITY INNOVATION ALLIANCE

Our Partners



Our Universities



Our member
universities and
board members

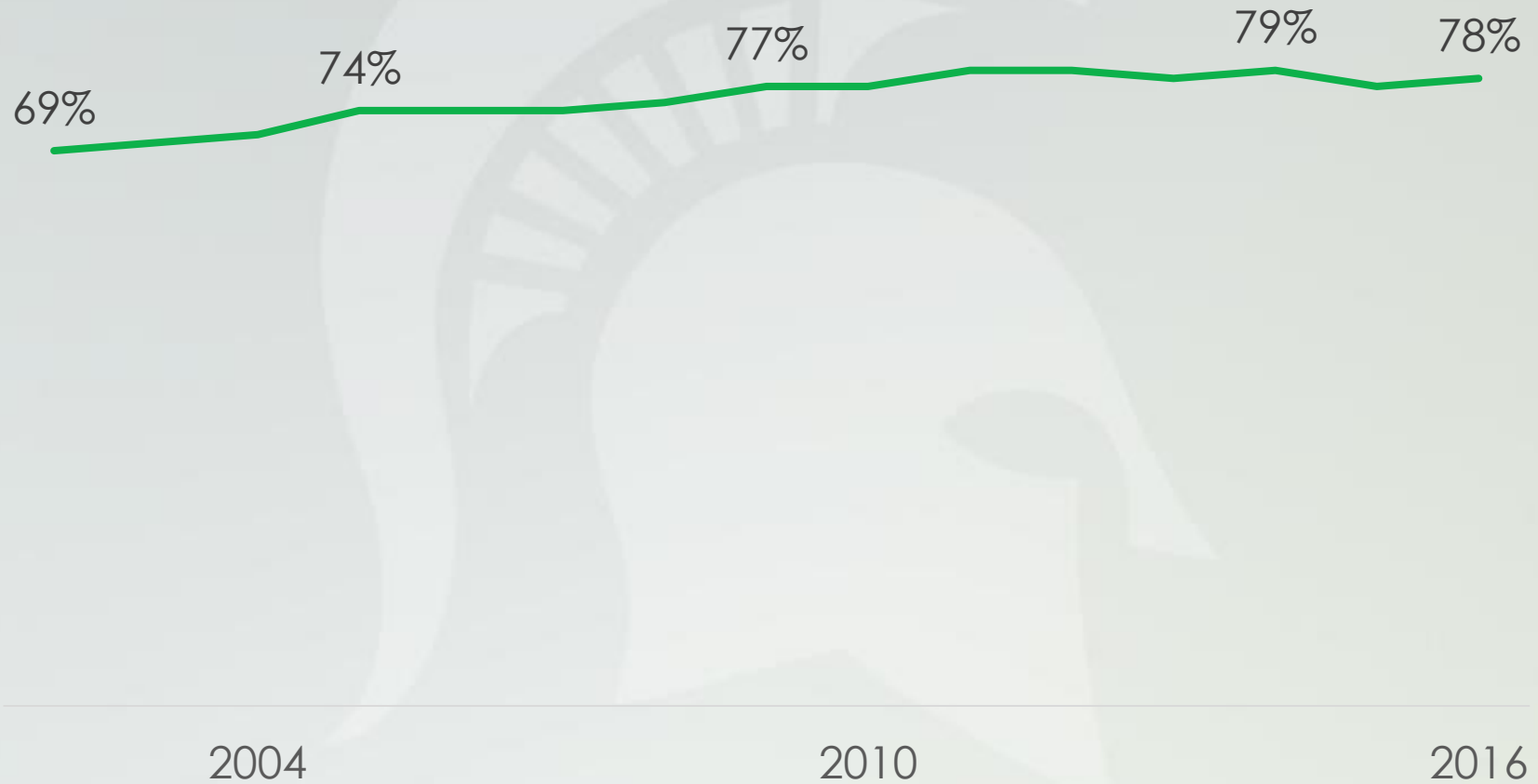
The University Innovation
Alliance is:

Oregon State University
UC Riverside
Arizona State University
University of Texas at Austin
University of Kansas
Iowa State University
Purdue University
Michigan State University
Ohio State University
Georgia State University
University of Central Florida

Michigan State University's commitment to the University Innovation Alliance:

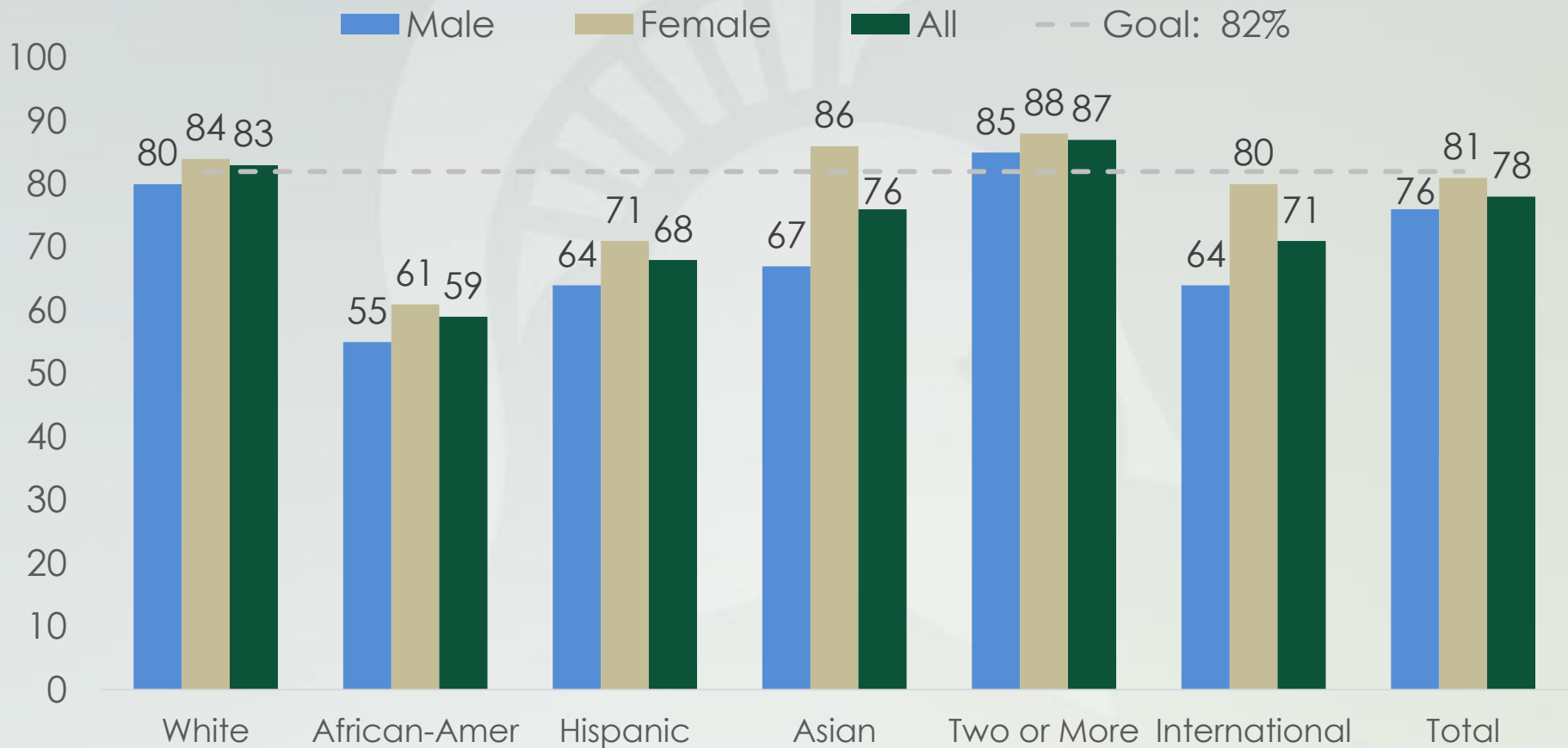
- Increase its overall 6-year graduation rate to 82%
- Reduce the opportunity gap in its 6-year graduation rate

MSU's 6-Year Graduation Rate



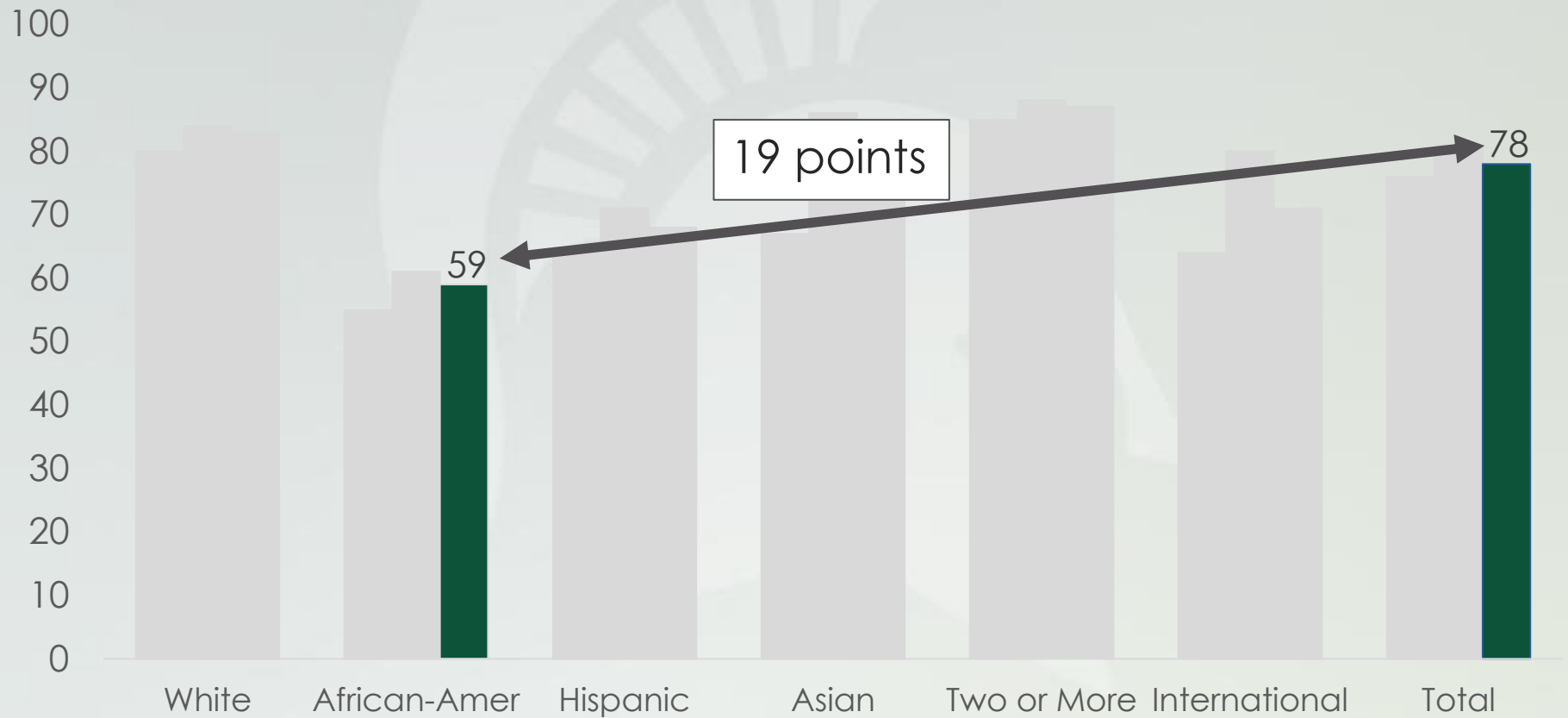
Graduation Rates

2010 Entering Cohort - 6-Year Graduation Rates

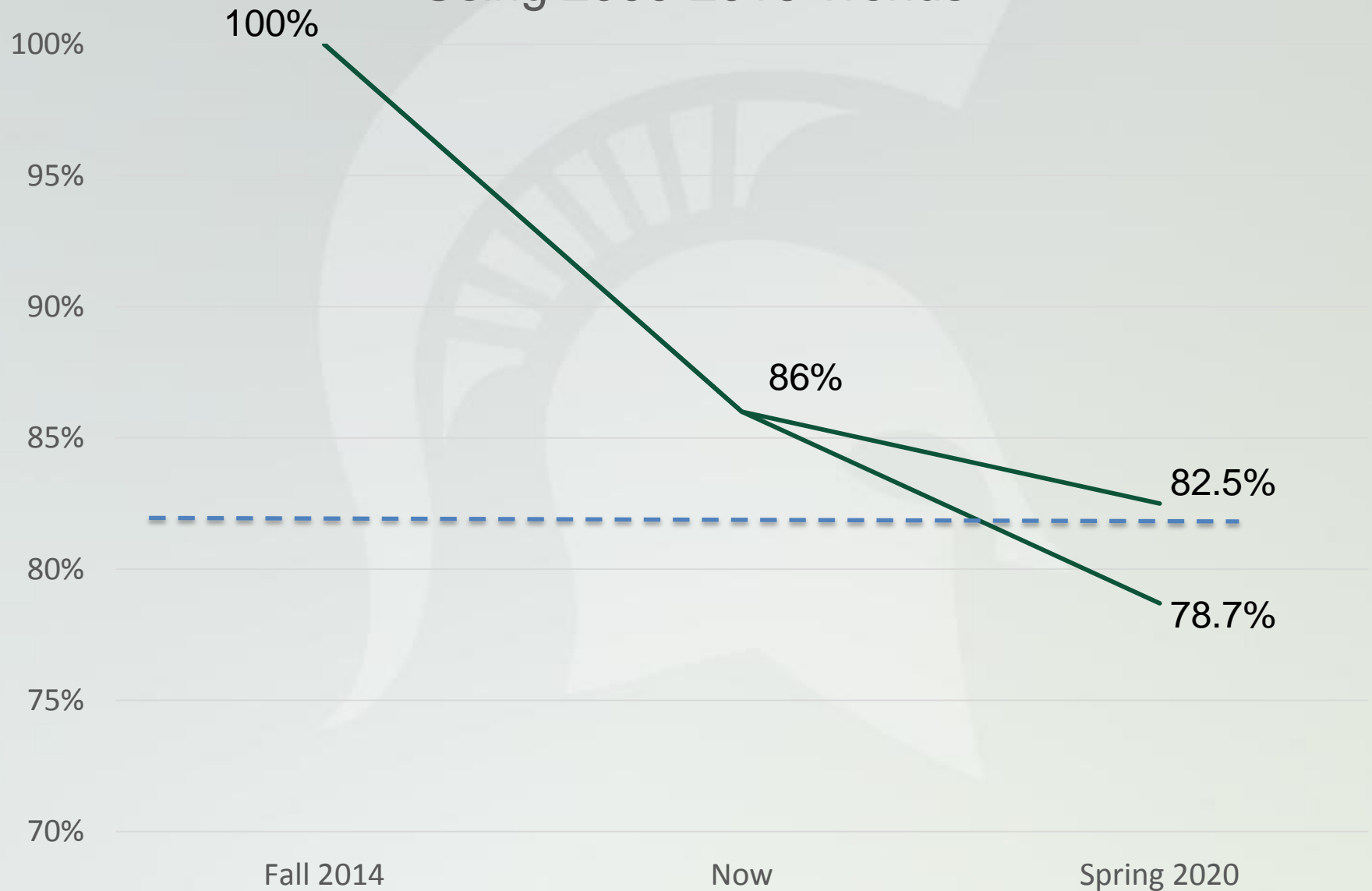


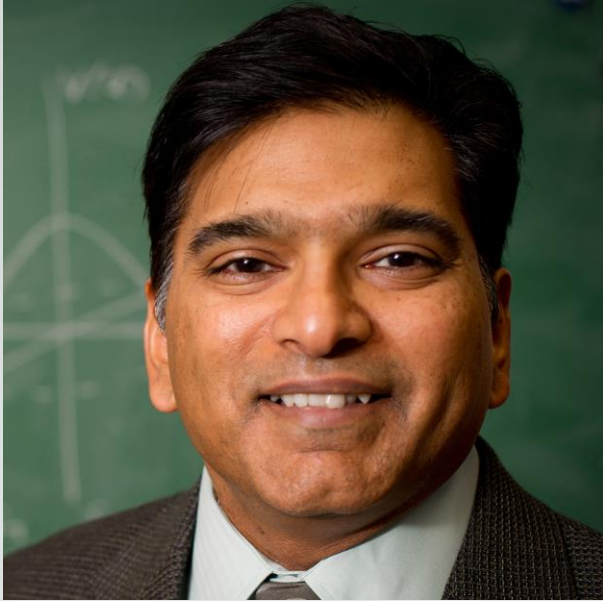
Graduation Rates

2010 Entering Cohort - 6-Year Graduation Rates



Forecasting 6-Year Graduation Rate Using 2000-2016 Trends

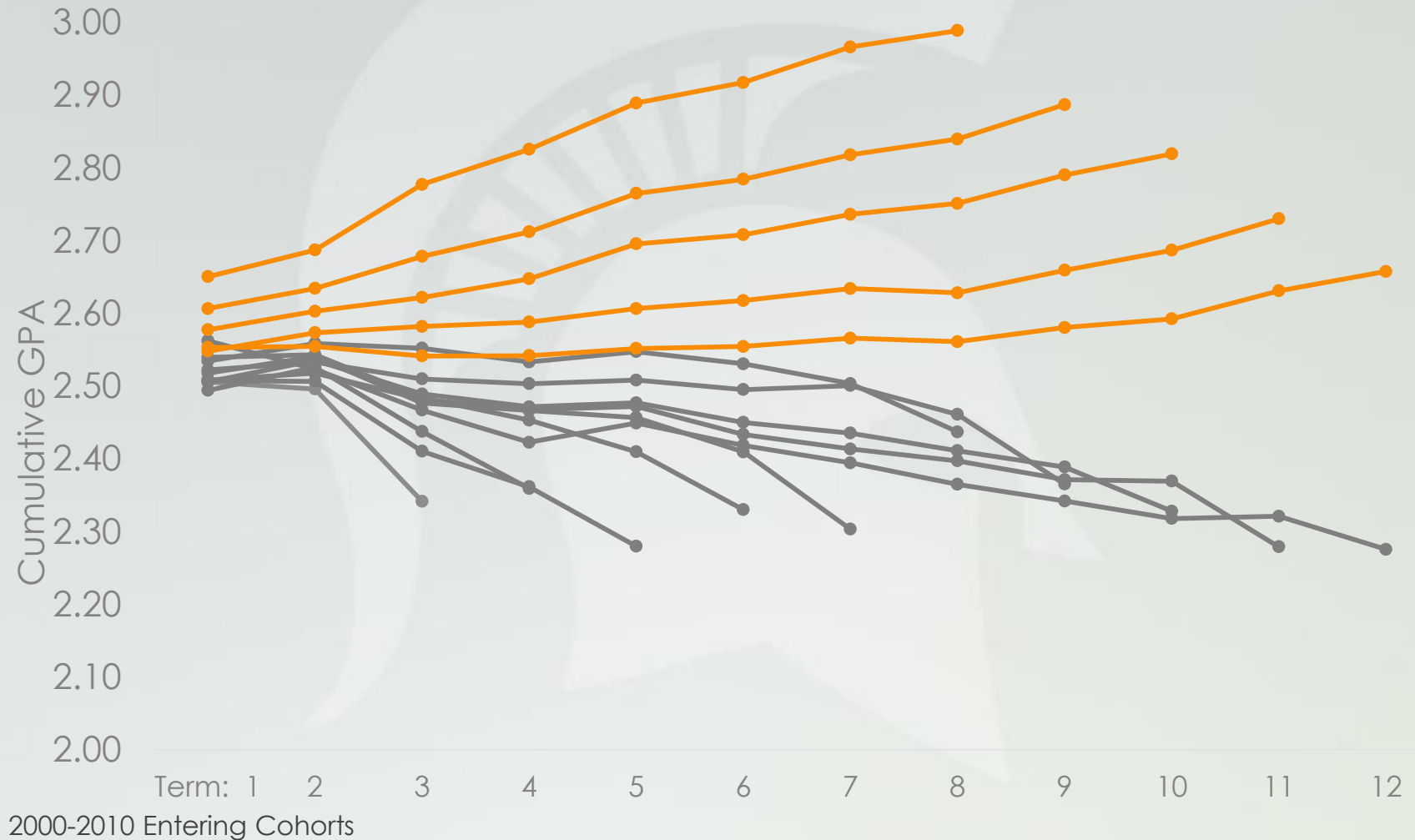




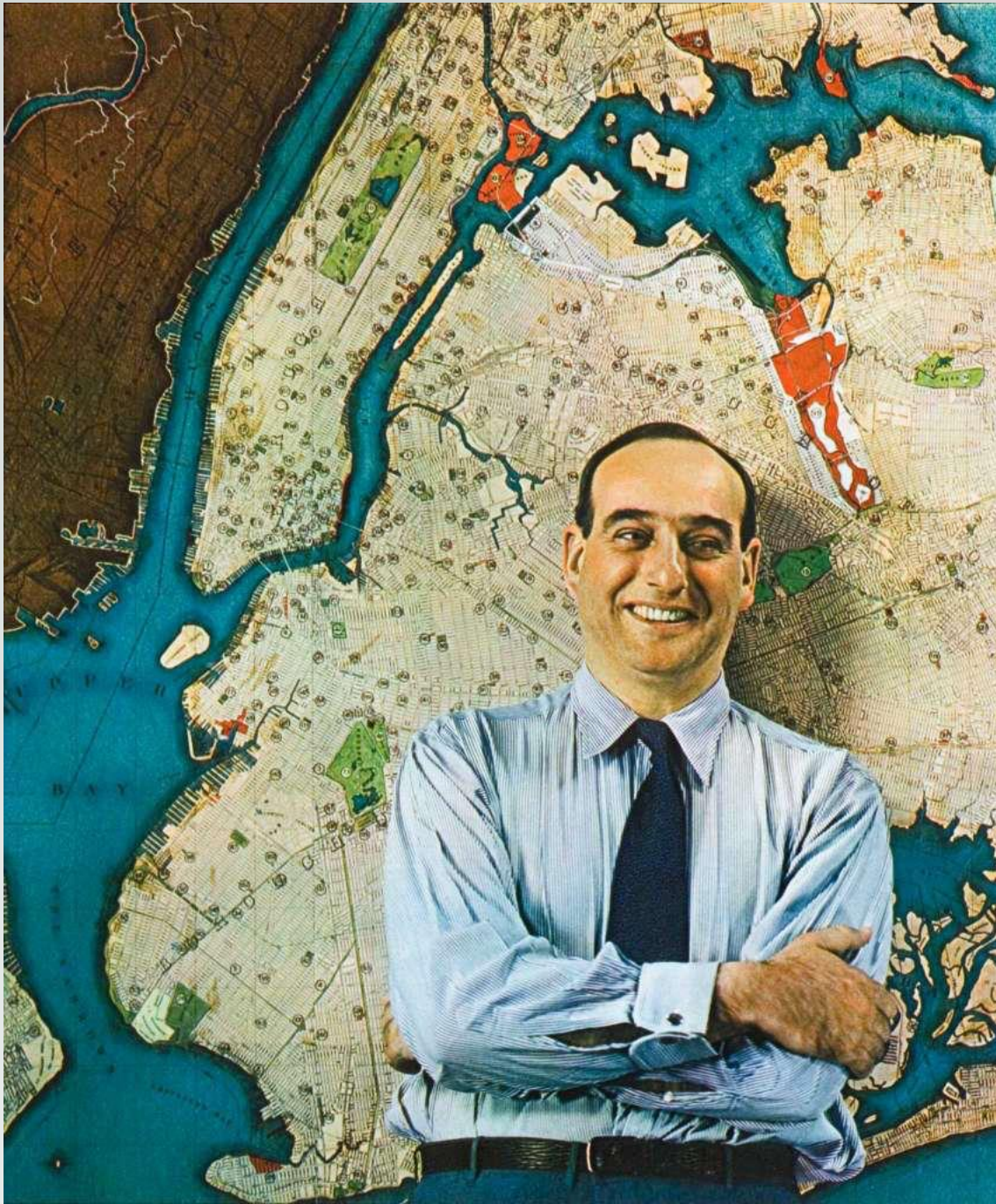
Sekhar Chivukula
Associate Provost for
Undergraduate Education

“At MSU, we believe that every undergraduate student who is admitted has the ability to learn, thrive, and earn a Bachelor’s degree from Michigan State. We believe that student success is the responsibility of everyone at MSU.”

Pathways Through MSU







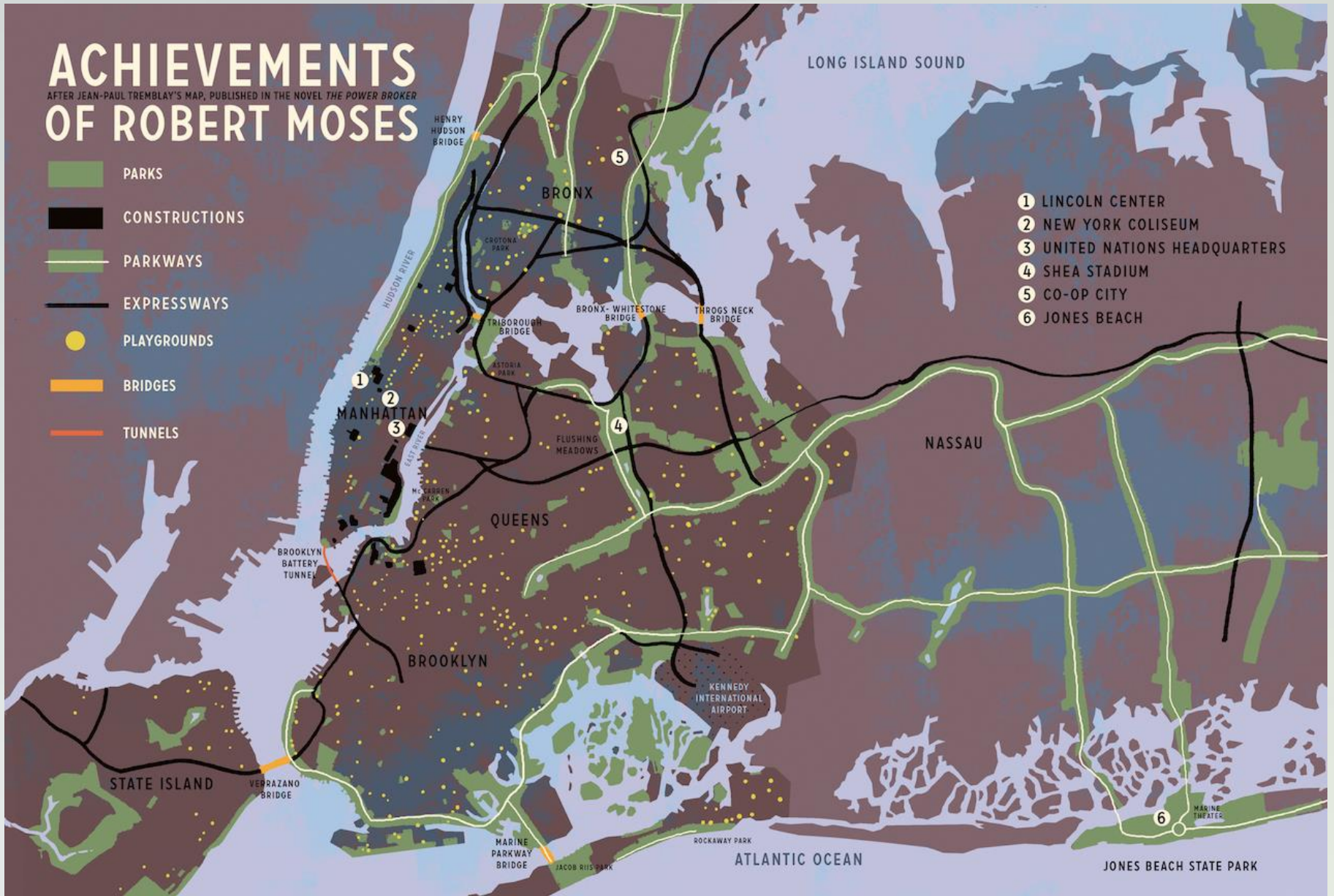
Robert Moses
1888-1981

ACHIEVEMENTS OF ROBERT MOSES

AFTER JEAN-PAUL TREMBLAY'S MAP, PUBLISHED IN THE NOVEL *THE POWER BROKER*

- PARKS
- CONSTRUCTIONS
- PARKWAYS
- EXPRESSWAYS
- PLAYGROUNDS
- BRIDGES
- TUNNELS

- 1** LINCOLN CENTER
- 2** NEW YORK COLISEUM
- 3** UNITED NATIONS HEADQUARTERS
- 4** SHEA STADIUM
- 5** CO-OP CITY
- 6** JONES BEACH



ATLANTIC OCEAN

JONES BEACH STATE PARK







“Mr. Moses had an instinctive feeling that someday politicians would try to put buses on the parkways. . . . He used to say to us fellows ‘Let’s design the bridges so the clearance is all right for passenger cars but not for anything else.’”

-Sid Shapiro



“Mr. Moses did this because he knew that something might happen after he was dead and gone. He wrote [the original] legislation [that kept buses off the parkways], but he knew you could change the legislation.”

-Sid Shapiro



“You can’t change a bridge after it’s up.”

-Sid Shapiro



“...that old son of a gun had made sure that buses would *never* be able to use his goddamned parkways.”

-Lee Koppelman









Our goal is to use MSU's data to:

1. Uncover artificial barriers to student success
2. Challenge the myths on which our curricula, our policies, and our practices are based
3. Identify successful interventions
4. Realize which students face particular challenges and for whom particular interventions work

Some of the challenges MSU faces in this effort:

1. Resource-constrained environment
2. Continually rising research and grant-winning expectations
3. Siloed data and college-centric governance
4. High standards for student data privacy
5. Low levels of collaboration with data between data-holders, analysts, administrators, advisors, and faculty

How?

1. Build a culture of evidence-based decision-making
2. Build trust and self-reliance
3. Use vendors and consultants sparingly, build capacity
4. Embrace project-based education and culture-building endeavors
5. Share with external partners

How?

1. Using data to expose student success (or lack thereof)

Incoming MSU Students are Each Assigned a Set of University Mathematics Requirements



Incoming MSU Students are Each Assigned a Set of University Mathematics Requirements

High Math Performing Students:

Medium Math Performing Students:

Low Math Performing Students:

Incoming MSU Students are Each Assigned a Set of University Mathematics Requirements

High Math Performing Students: No Classes

Medium Math Performing Students:

Low Math Performing Students:

Incoming MSU Students are Each Assigned a Set of University Mathematics Requirements

High Math Performing Students: No Classes

Medium Math Performing Students: 1-2 Courses

Low Math Performing Students:

Incoming MSU Students are Each Assigned a Set of University Mathematics Requirements

High Math Performing Students: No Classes

Medium Math Performing Students: 1-2 Courses

Low Math Performing Students: Remedial Algebra Course + 1-2 Courses

Of the MSU Students Who:

- 1) Are required to take the remedial mathematics course, and

Of the MSU Students Who:

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- 2) Attempt to pursue a STEM major

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- 6% successfully complete a STEM major at MSU

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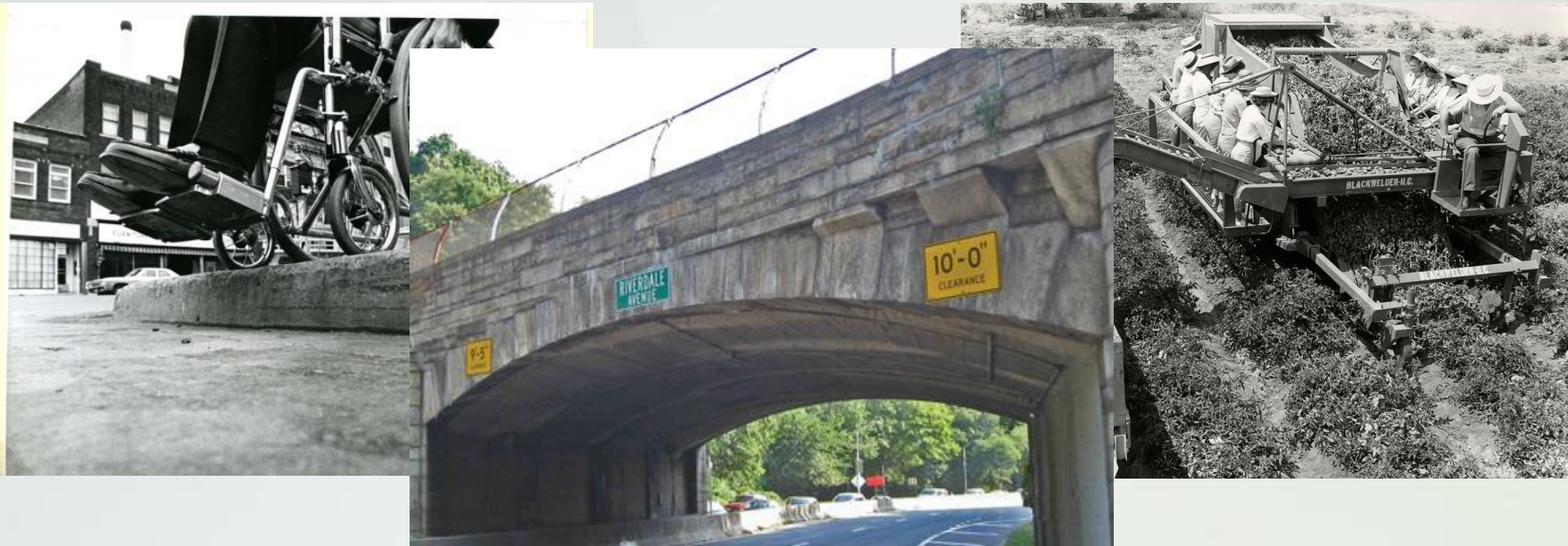
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Dow STEM Scholars


[About](#)
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[News, Events & Photos](#)
[Dow Mentors](#)
[About](#)
[Directory](#)
[Registration Form](#)
[Additional Resources](#)

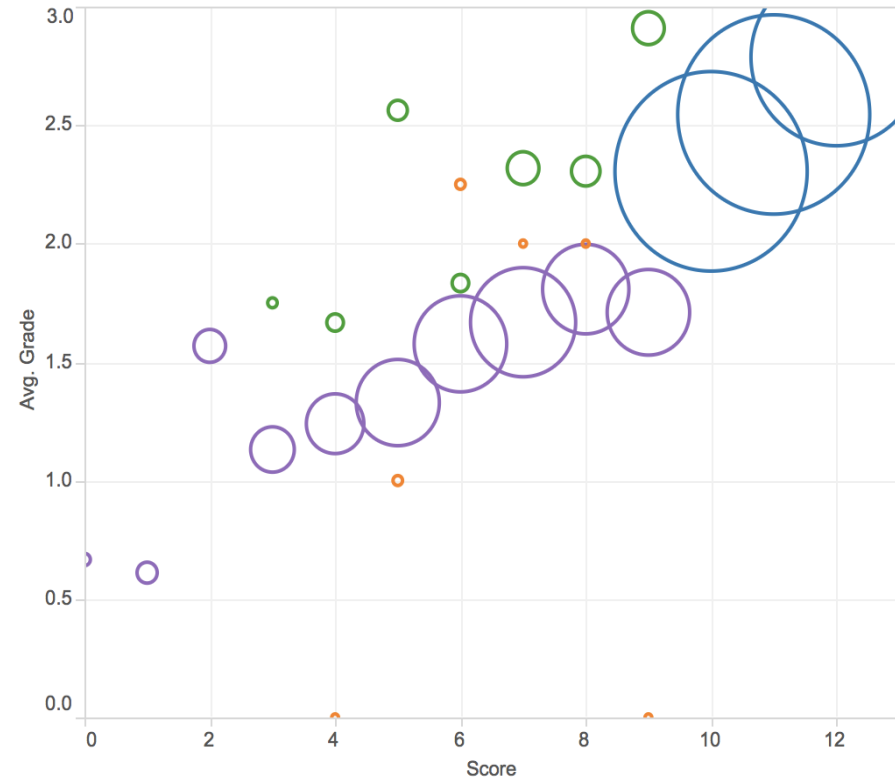

\$5 million grant to help STEM students attain goals

Michigan State University is launching a new program designed to help students who didn't receive the pre-college math and science training they needed to pursue degrees and, ultimately, careers in science-related fields.

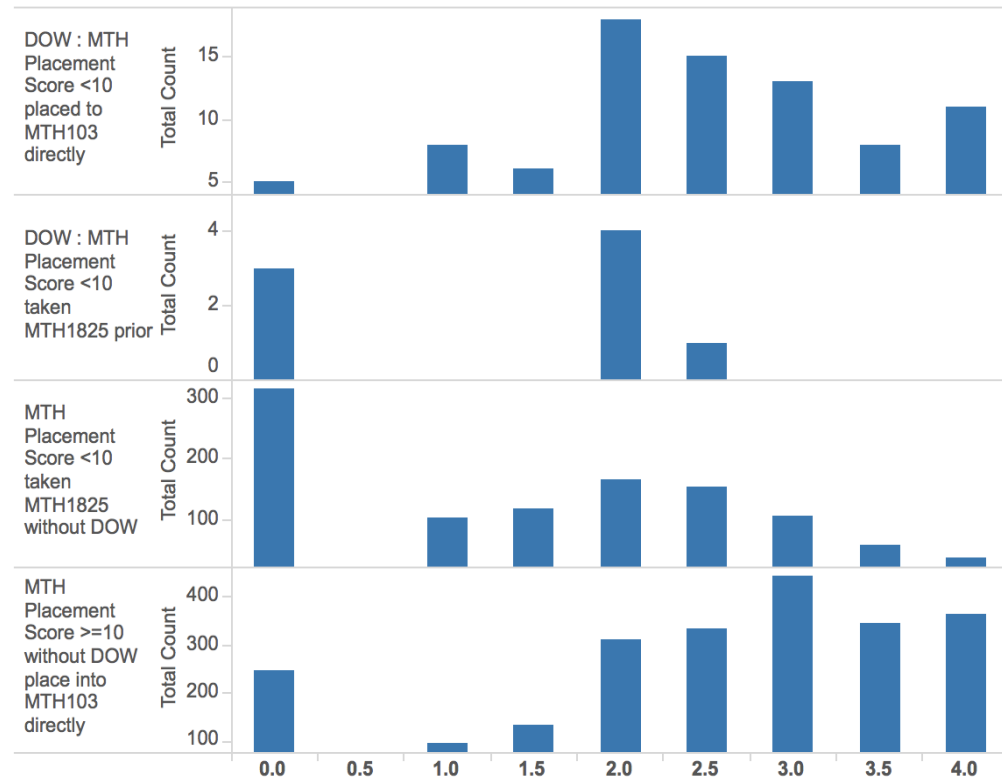
[Dow STEM Scholars Program](#)
[STEM Success: Helping Students Achieve Their Dreams](#)
[\\$5 million grant to help STEM students attain goals](#)

MTH103 Enroll Term: (All) |
 Stem First: (All) |
 Gender: (All) |
 Race/Ethnicity: (All) |
 Math Placement Score: (All) |
 Entering Cohort: (All) |
 At Risk: (All) |
 Indicator: (All)

Average MTH 103 grade by Math Placement Score by group, Term : All



Distribution MTH 103 grades by group



- DOW : MTH Placement Score <10 placed to MTH103 directly
- DOW : MTH Placement Score <10 taken MTH1825 prior
- MTH Placement Score <10 taken MTH1825 without DOW
- MTH Placement Score >=10 without DOW place into MTH103 directly

How?

1. Using data to expose student success (or lack thereof)
2. Coarsened exact matching

Social Science Help Room

What outcome would you like to analyze?

Select One

Use Matching?

Yes

No

Across which factor would you like to compare?

Race

Submit

Comparison By Category

Overall

Treatment Diagnostics

Control Diagnostics


Please choose a course GPA to compare.

The 'Comparison by Category' plot will summarize outcomes for the selected course.

The 'Overall' plot summarizes outcomes by the selected comparison group for all individuals.

The 'Diagnostics' plot displays the results of matching process.

Comparison History and Results

 Download

Social Science Help Room

What outcome would you like to analyze?

ISS210

Use Matching?

Yes

No

On which characteristics would you like to match?

Race

Gender

ACT

HSGPA

FirstGen

InState

Pell

Major

College

International

Across which factor would you like to compare?

Race

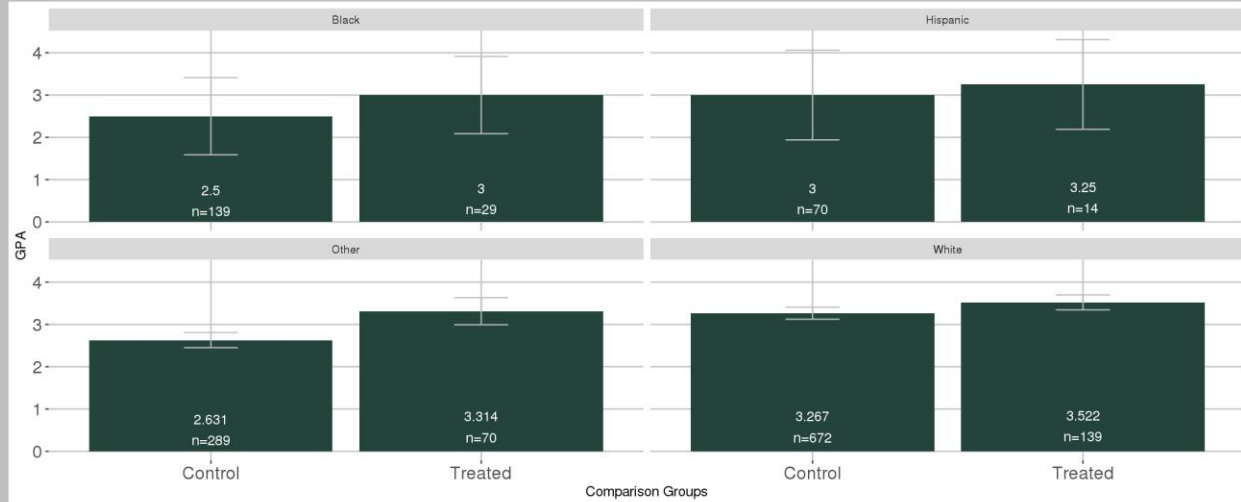
Submit

Comparison By Category

Overall

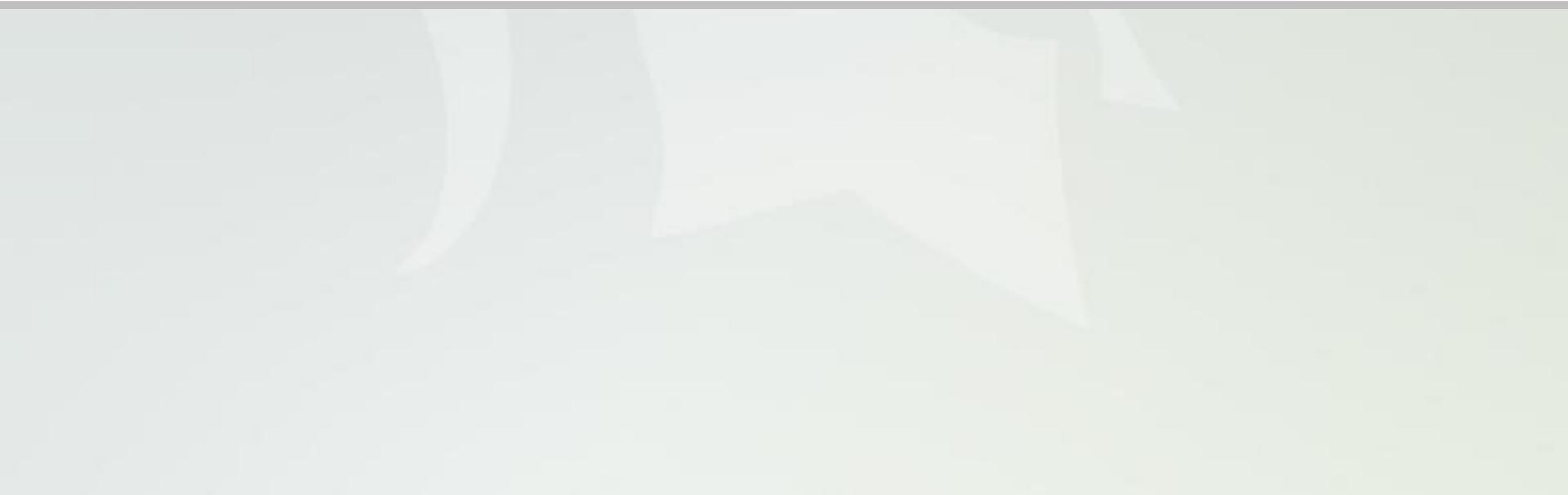
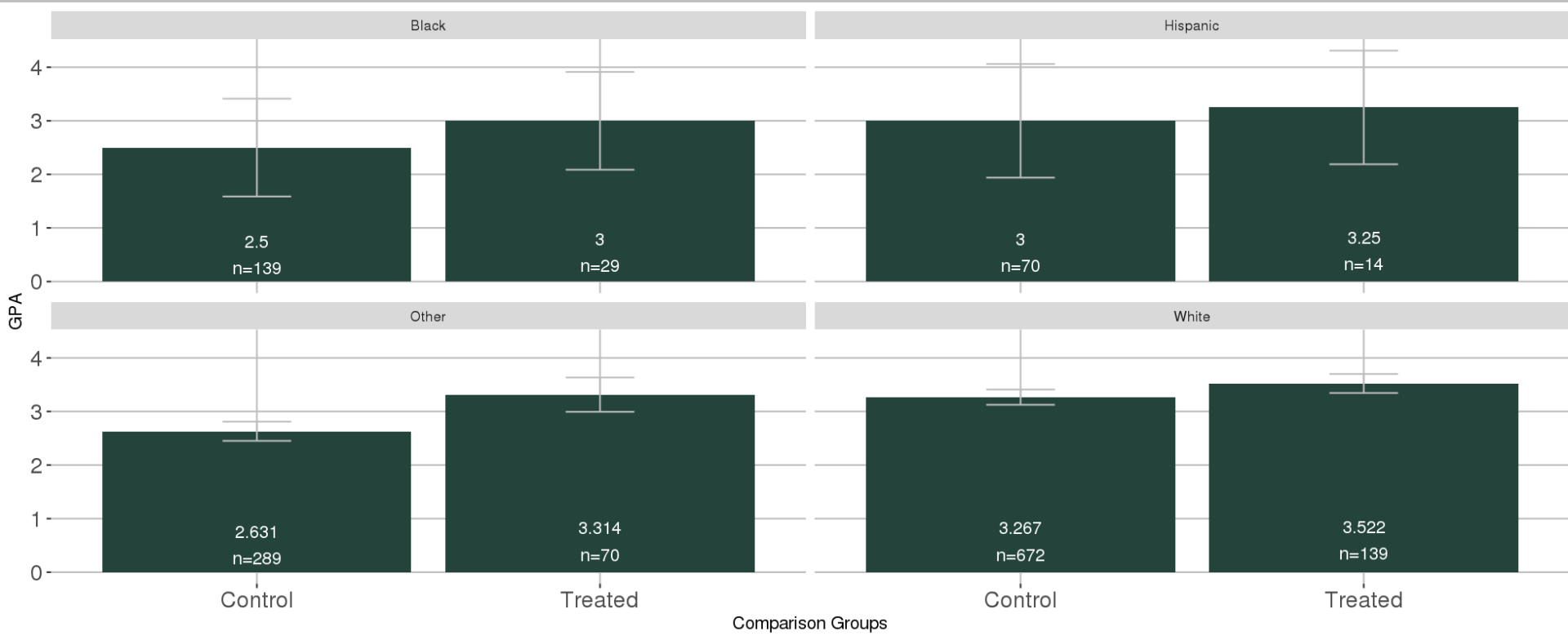
Treatment Diagnostics

Control Diagnostics



Comparison History and Results

Comparison Category	From	To	Group	Subgroup	Matched?	Course	GPA	Standard Error	Total
Race	2016	2016	Control	Black	ACT; HSGPA	ISS210	2.50	0.46	139.00
Race	2016	2016	Control	Hispanic	ACT; HSGPA	ISS210	3.00	0.53	70.00
Race	2016	2016	Control	Other	ACT; HSGPA	ISS210	2.63	0.09	289.00
Race	2016	2016	Control	White	ACT; HSGPA	ISS210	3.27	0.07	672.00
Race	2016	2016	Treated	Black	ACT; HSGPA	ISS210	3.00	0.46	29.00
Race	2016	2016	Treated	Hispanic	ACT; HSGPA	ISS210	3.25	0.53	14.00
Race	2016	2016	Treated	Other	ACT; HSGPA	ISS210	3.31	0.16	70.00
Race	2016	2016	Treated	White	ACT; HSGPA	ISS210	3.52	0.09	139.00



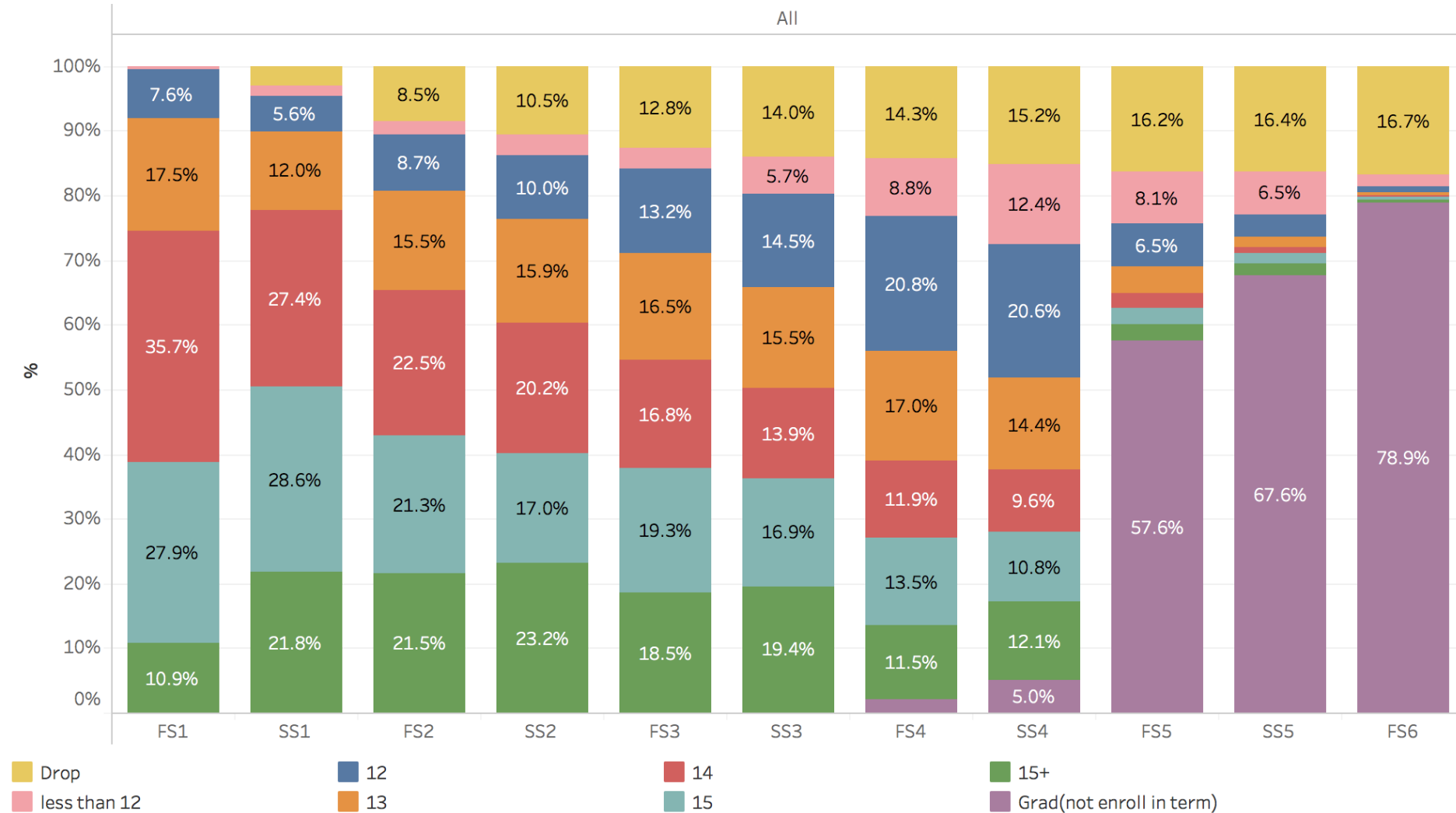
How?

1. Using data to expose student success (or lack thereof)
2. Coarsened exact matching
3. Slicing and sub-grouping

Cohort: 2011 | Credit Type: Assessed Cre... | Subsequent Terms: (All) | Term Time Status: (All) | Breakdown by: Total | AOP Month: (All) | 1st Fall Begin Credits: (All) | Indicator: (All) | At Risk: (All) | Honors: (All)

Gender: (All) | Race/Ethnicity: White | 1st Gen - Admission: (All) | 1st Gen - FAFSA: (All) | Pell (1st Yr): (All) | Residency (Fee-based): (All) | 1st Writing Crs: (All) | MTH Placement: (All) | First College: (All) | First Mjr: (All)

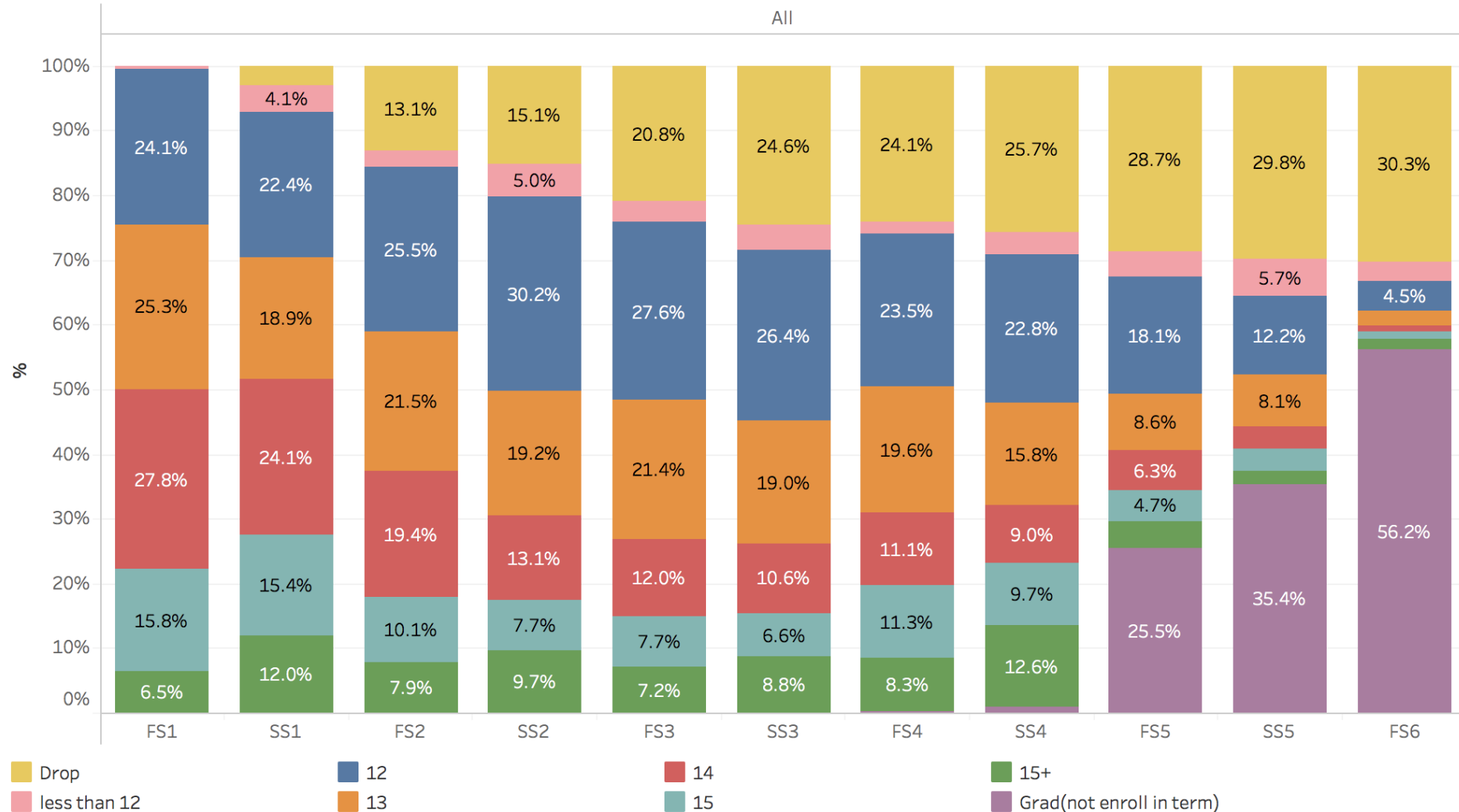
Assessed Credit (1st day) Distribution in subsequent terms by Total, 2011 Cohort

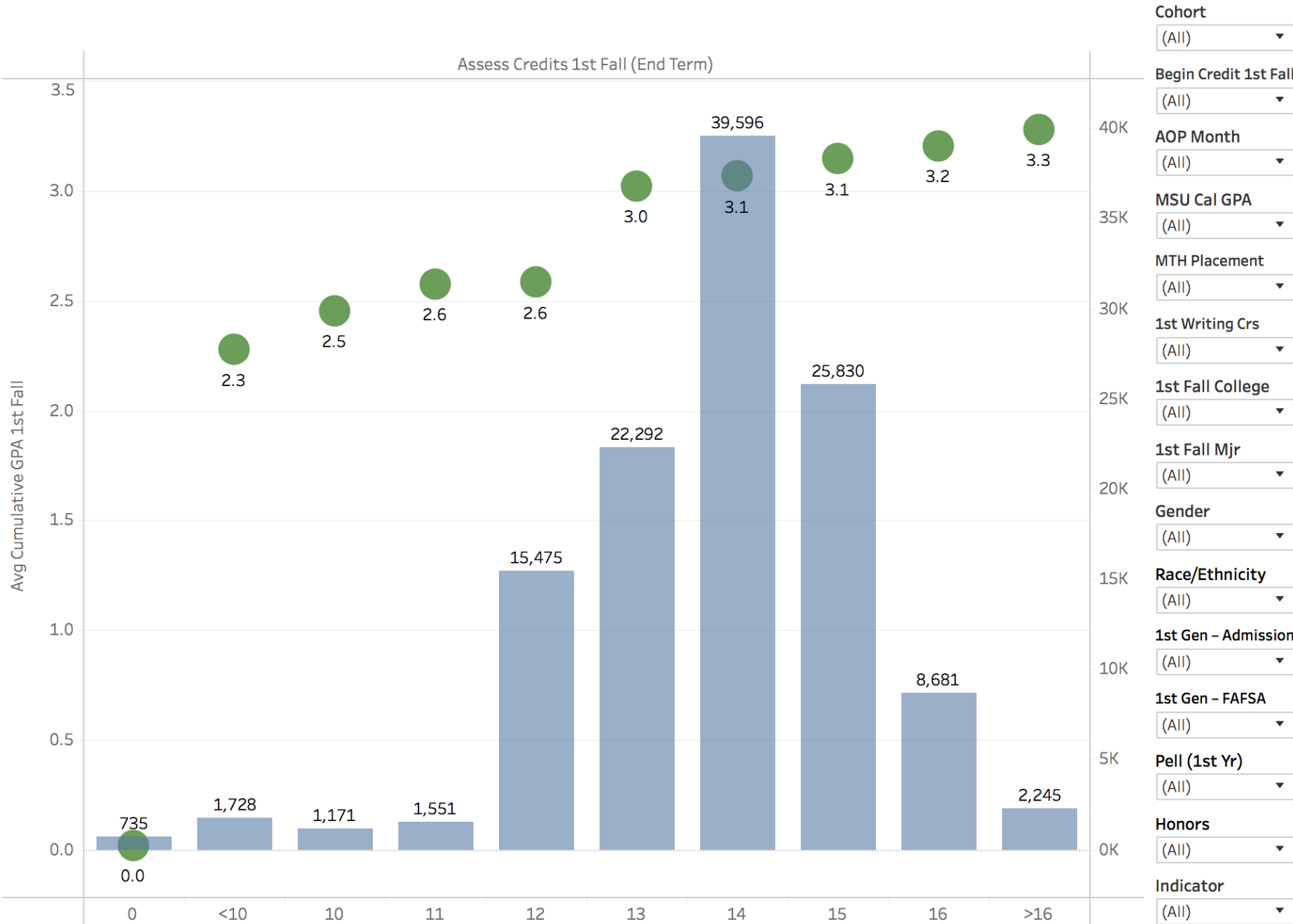


Cohort: 2011 | Credit Type: Assessed Cre... | Subsequent Terms: (All) | Term Time Status: (All) | Breakdown by: Total | AOP Month: (All) | 1st Fall Begin Credits: (All) | Indicator: (All) | At Risk: (All) | Honors: (All)

Gender: (All) | Race/Ethnicity: African A... | 1st Gen - Admission: (All) | 1st Gen - FAFSA: (All) | Pell (1st Yr): (All) | Residency (Fee-based): (All) | 1st Writing Crs: (All) | MTH Placement: (All) | First College: (All) | First Mjr: (All)

Assessed Credit (1st day) Distribution in subsequent terms by Total, 2011 Cohort





Cohort (All) ▼

Begin Credit 1st Fall (All) ▼

AOP Month (All) ▼

MSU Cal GPA (All) ▼

MTH Placement (All) ▼

1st Writing Crs (All) ▼

1st Fall College (All) ▼

1st Fall Mjr (All) ▼

Gender (All) ▼

Race/Ethnicity (All) ▼

1st Gen - Admission (All) ▼

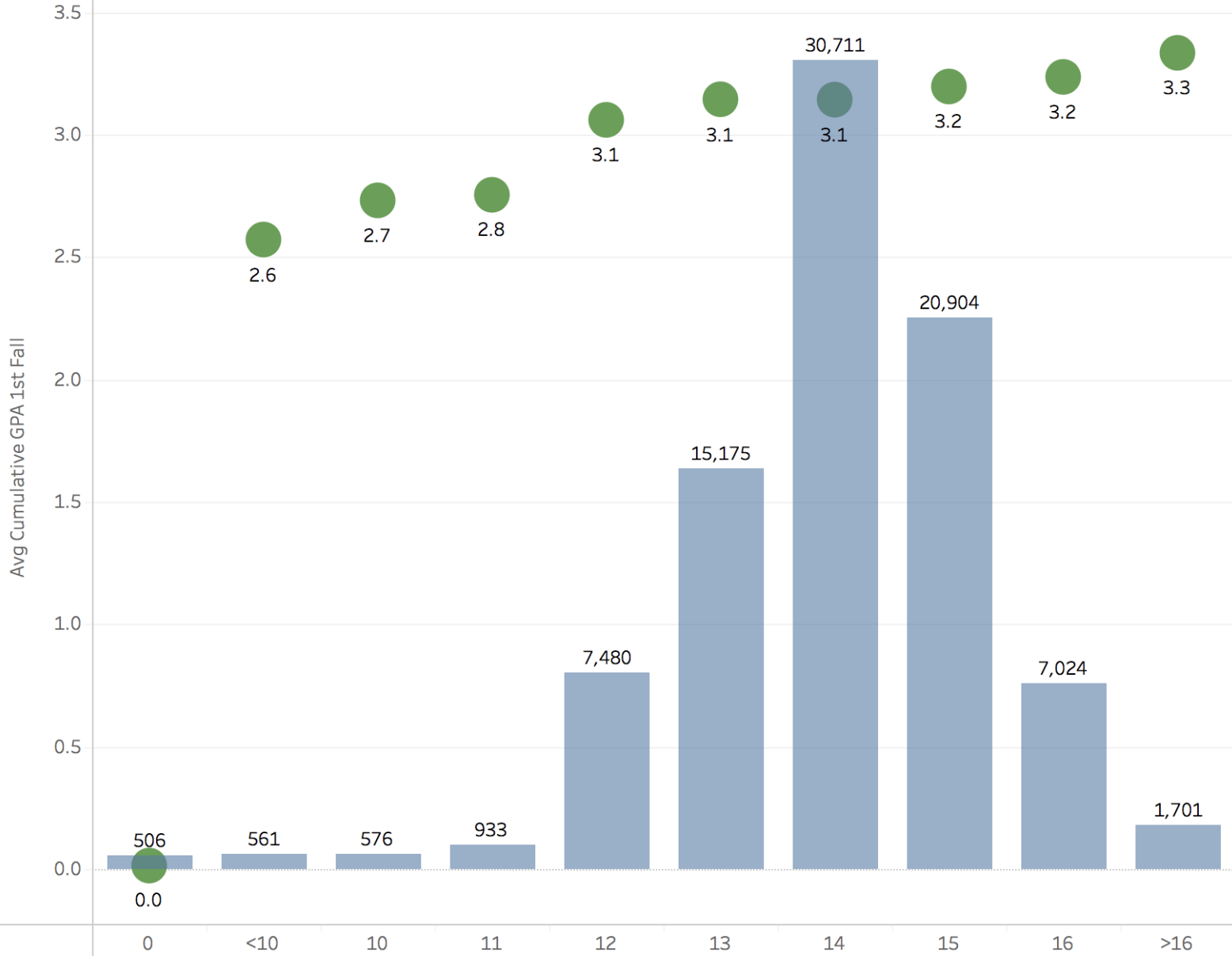
1st Gen - FAFSA (All) ▼

Pell (1st Yr) (All) ▼

Honors (All) ▼

Indicator (All) ▼

Assess Credits 1st Fall (End Term)



Cohort

Begin Credit 1st Fall

AOP Month

MSU Cal GPA

MTH Placement

1st Writing Crs

1st Fall College

1st Fall Mjr

Gender

Race/Ethnicity

1st Gen - Admission

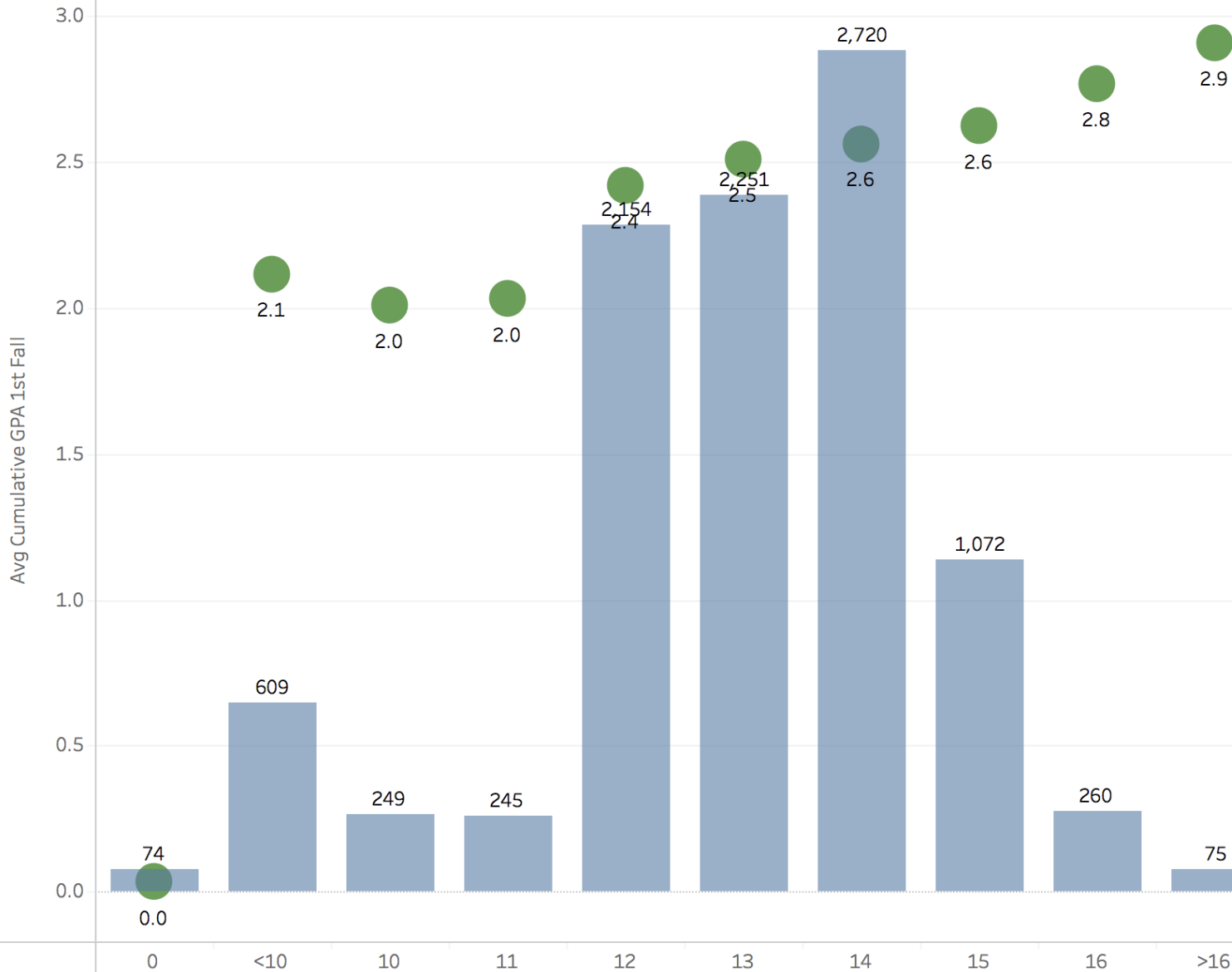
1st Gen - FAFSA

Pell (1st Yr)

Honors

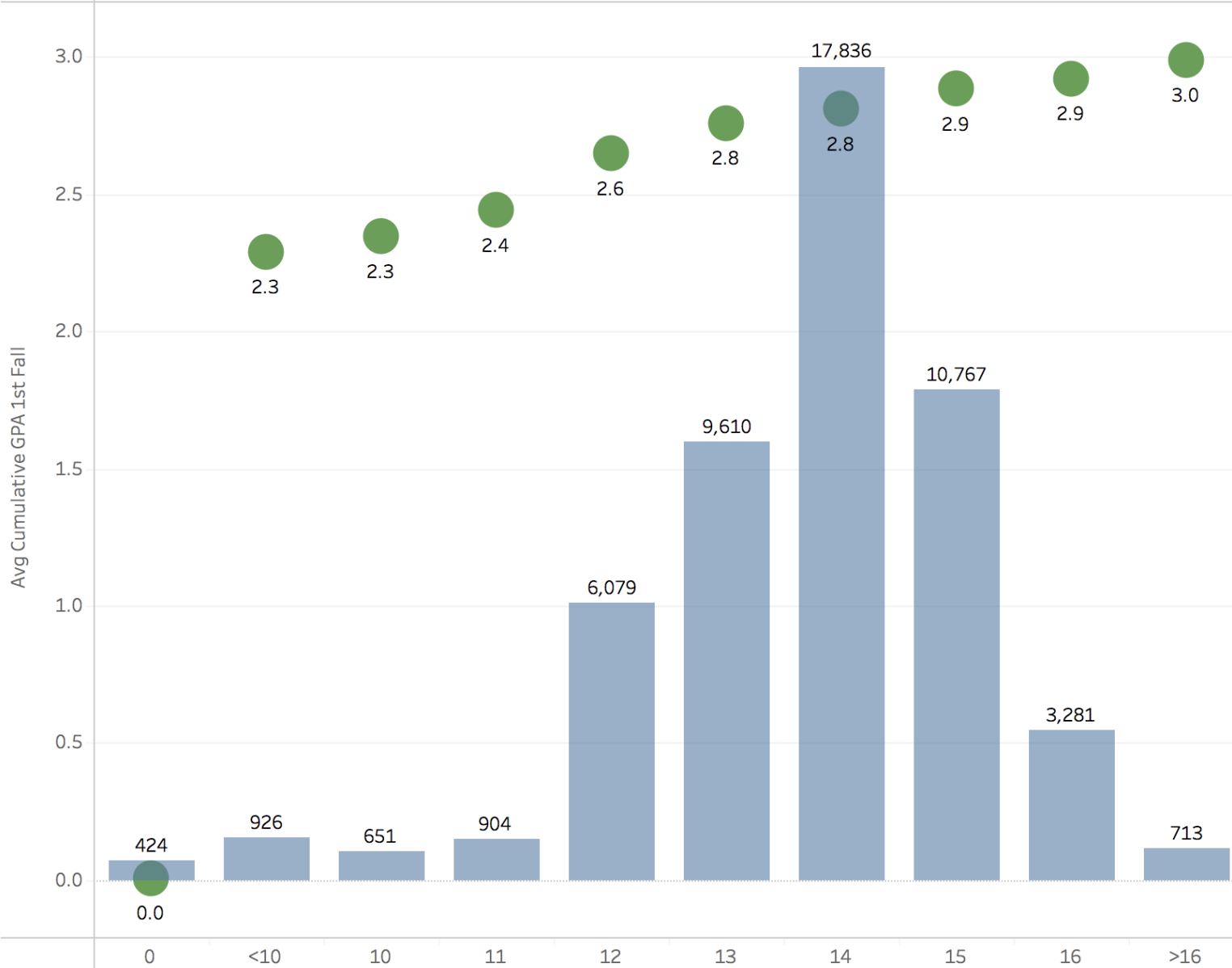
Indicator

Assess Credits 1st Fall (End Term)



- Cohort**
(All) ▼
- Begin Credit 1st Fall**
(All) ▼
- AOP Month**
(All) ▼
- MSU Cal GPA**
(All) ▼
- MTH Placement**
(All) ▼
- 1st Writing Crs**
(All) ▼
- 1st Fall College**
(All) ▼
- 1st Fall Mjr**
(All) ▼
- Gender**
(All) ▼
- Race/Ethnicity**
African Ameri... ▼
- 1st Gen - Admission**
(All) ▼
- 1st Gen - FAFSA**
(All) ▼
- Pell (1st Yr)**
(All) ▼
- Honors**
(All) ▼
- Indicator**
(All) ▼

Assess Credits 1st Fall (End Term)



- Cohort**
(All) ▼
- Begin Credit 1st Fall**
(All) ▼
- AOP Month**
(All) ▼
- MSU Cal GPA**
(Multiple val... ▼
- MTH Placement**
(All) ▼
- 1st Writing Crs**
(All) ▼
- 1st Fall College**
(All) ▼
- 1st Fall Mjr**
(All) ▼
- Gender**
(All) ▼
- Race/Ethnicity**
(All) ▼
- 1st Gen – Admission**
(All) ▼
- 1st Gen – FAFSA**
(All) ▼
- Pell (1st Yr)**
(All) ▼
- Honors**
(All) ▼
- Indicator**
(All) ▼

Discussion Questions:

Where are the low bridges, mechanical tomato harvesters, and vertical curbs on your campus?

What myths could be tested?

How do you avoid arguments over “rigor” that serve to perpetuate the status quo?

How do you build the campus culture necessary to pursue evidence-based reforms?

What should you buy, build, or borrow?

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