

FLORIDA ATLANTIC UNIVERSITY



YOUR  
FUTURE  
AWAITS.

**Le**arning Reimagined

A QEP Proposal with a Focus on Student Success:  
Expanding the LA Model



## What is the Learning Assistant (LA) Program?

### Goals:

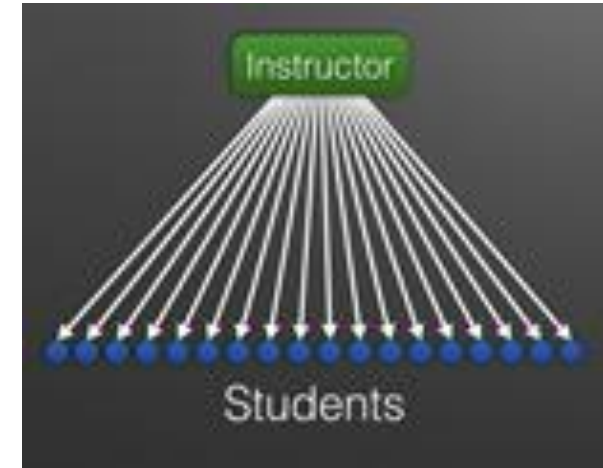
- Course redesign to include active learning through small group collaboration facilitated by undergraduate Learning Assistants (LAs)
- Teach students how to be successful college students through intentional course structuring
- Provide more equitable and inclusive learning environments

### Who are LAs?

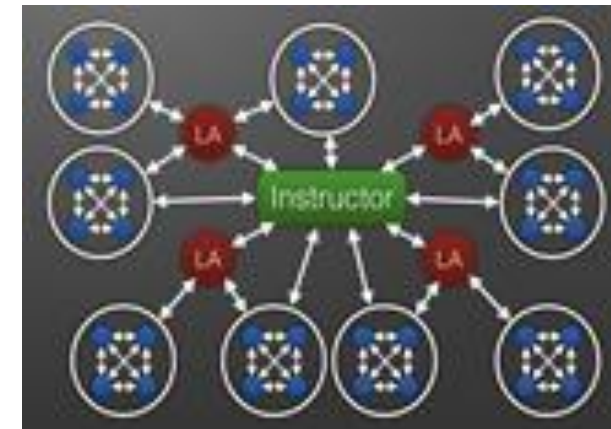
Undergraduate students who, with the guidance of the instructor and a pedagogy course, facilitate among groups of students in a variety of classroom settings that encourage student engagement and interaction.

**LA supported courses** provide opportunities for students to work together toward a learning goal and to articulate and defend their ideas.

*LAs are NOT content experts... they are experts at **learning** in the course.*



**Traditional classroom setting**  
(instructor-centered)



**LA classroom setting**  
(student-centered)



## What is LeArning Reimagined

- With a focus on student success, this QEP proposes to expand the Learning Assistant (LA) model across the curriculum to transform teaching through student-centered collaborative learning
- Faculty will have the opportunity to **reimagine** their courses and how students **learn** as we create a cultural change in teaching and learning at Florida Atlantic University.



## Introduction of Co-Authors

- **Mathematical Sciences**

- **Jay Mireles-James**, *Associate Professor*

- **Undergraduate Studies**

- **Jennifer Bebergal**, *Associate Dean, Retention and Academic Support*
- **Brittanney Adelman**, *Director, Math Learning Center & Adjunct in Mathematics*



## Supporting Faculty

- **Mathematical Sciences**

- **Stephen Locke**, *Professor & Chair*
- **Lee Klingler**, *Professor & former Chair*
- **Erik Lundberg**, *Associate Professor*
- **Necibe Tuncer**, *Associate Professor*
- **Zvi Rosen**, *Assistant Professor*
- **Kasia Windowska-Nowak**, *Instructor*

- **Biological Sciences**

- **Sarah Milton**, *Professor & Chair*
- **Marianne Porter**, *Assistant Professor*
- **Matthew Lovelace**, *Instructor*

- **Physics**

- **Chris Beetle**, *Associate Professor*

- **Chemistry & Biochemistry**

- **Predrag Cudic**, *Professor & Chair*
- **Dan Huchital**, *Professor*
- **Maré Cudic**, *Associate Professor & Director Honors in Chemistry*
- **Tito Sempertegui**, *Senior Instructor*

- **Exercise Science & Health Promotion**

- **Michelle Papania**, *Instructor*

- **Engineering & Computer Science**

- **Nancy Romance**, *STEM Education; Director FAU STEM Collaborative*
- **Tami Sorgente**, *Senior Instructor*
- **Sareh Taebi**, *Instructor*



## Supporting Faculty continued

- **College of Business – Information Technology & Operations Mgmt**
  - **Mary Schindelbeck**, *Senior Instructor*
  - **Jonathan Sweet**, *Instructor*
- **Executive Programs**
  - **Nancy Shehadeh**, *Online Program Coordinator*
- **Honors College**
  - **Terje Hill**, *Associate Dean & Professor*
  - **Warren McGovern**, *Professor (Mathematics)*
  - **Laura Vernon**, *Professor (Psychology) & Provost Fellow - Student Mental Health*
- **Arts & Letters**
  - **Kevin Wilt**, *Chair and Associate Professor (Music)*
  - **Justin White**, *Associate Professor (Spanish)*
  - **Geraldine Blattner**, *Associate Professor (French)*
- **College of Education**
  - **Jennifer Bloom**, *Professor (Educational Leadership)*
  - **Bianca Nightengale-Lee**, *Assistant Professor & AACTE Diversified Teacher Workforce Chair*
- **Center for Online & Continuing Education**
  - **Julie Golden-Botti**, *Executive Director*
- **Division of Student Affairs & Enrollment Management**
  - **Andrea Guzman**, *Associate Vice President - Student Outreach & Diversity and Diversity Platform Chair*
  - **Debbi Johnson-Rais**, *Director, Scholars Program*



# Top 10 Reasons to Select **LeArning** Reimagined as your QEP

#10: Impact Performance METRICS as we lower DFW rates hours; increase retention & graduation rates.

# 9: Prepare FAU graduates with CAREER COMPETENCIES employers seek

# 8: Engage students in DISTANCE LEARNING courses

# 7: Create a pipeline for TEACHING in K-12 and the University

# 6: Promote a feeling of INCLUSIVITY

# 5: Retain HIGH ACHIEVING STUDENTS

# 4: Improve student MENTAL HEALTH and feelings of BELONGING

# 3: Promote EQUITY

# 2: Excite and invigorate the FACULTY

And the #1 reason to select **LeArning Reimagined** as your QEP: Effects on **OUR STUDENTS**

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# Goals, Outcomes and Assessment

- **Goal 1:** Transform the culture of teaching and learning through course redesign to incorporate collaborative learning, enhance student engagement, and create more equitable and inclusive learning environments
- **Goal 2:** Influence student performance in transformed courses, yielding positive impacts on KPIs and performance metrics
- **Goal 3:** Design opportunities for faculty development inclusive of LA Communities to Reimagine Learning (LA-CRLs), new LA faculty canvas course, LA faculty mentoring roles, and LA program showcases to provide cross-departmental discussion and sharing of ideas and best practices
- **Goal 4:** Build a 0-credit LA Pedagogy and 1-credit Advanced LA Pedagogy course
- **Goal 5:** Increase student employment opportunities for undergraduate students
- **Goal 6:** Recruit and prepare future teachers
- **Goal 7:** Conduct LA program evaluation

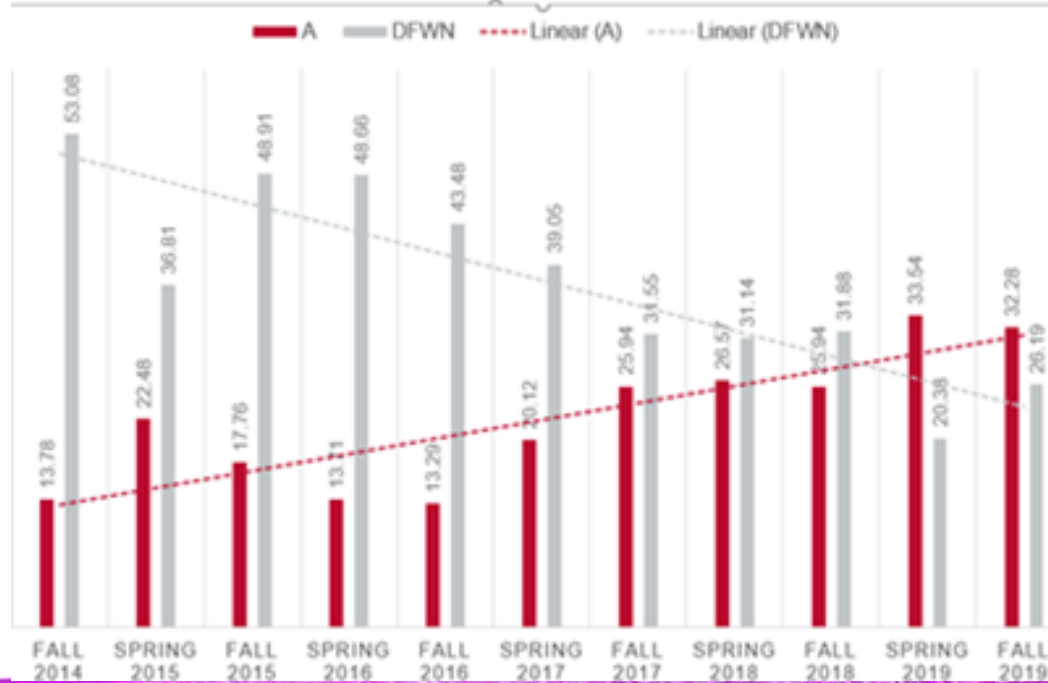
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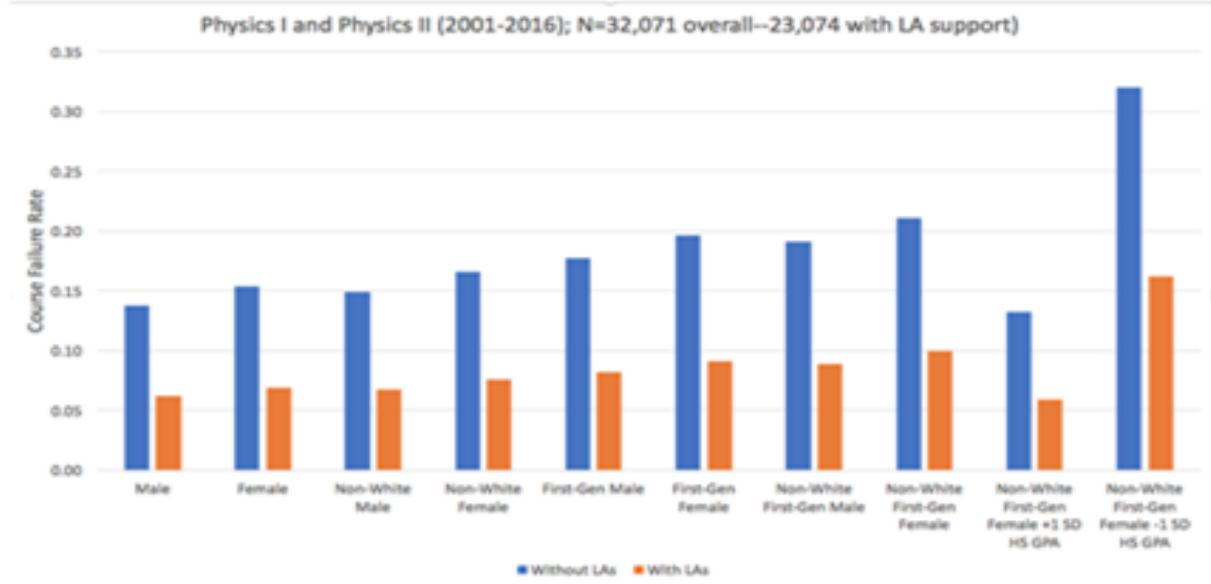


# Evidence of the LA Model Effectiveness

- Build sense of community with faculty, LAs and peers
- Gains in content knowledge
- Increase critical thinking, problem solving, application of knowledge
- More connected to major
- Decreases in DFW rates (especially for students of color and from disadvantaged backgrounds)
- Increases in retention (3-4% if in LA course in first-year)
- Increases in graduation as students pass courses; significant impact for LAs

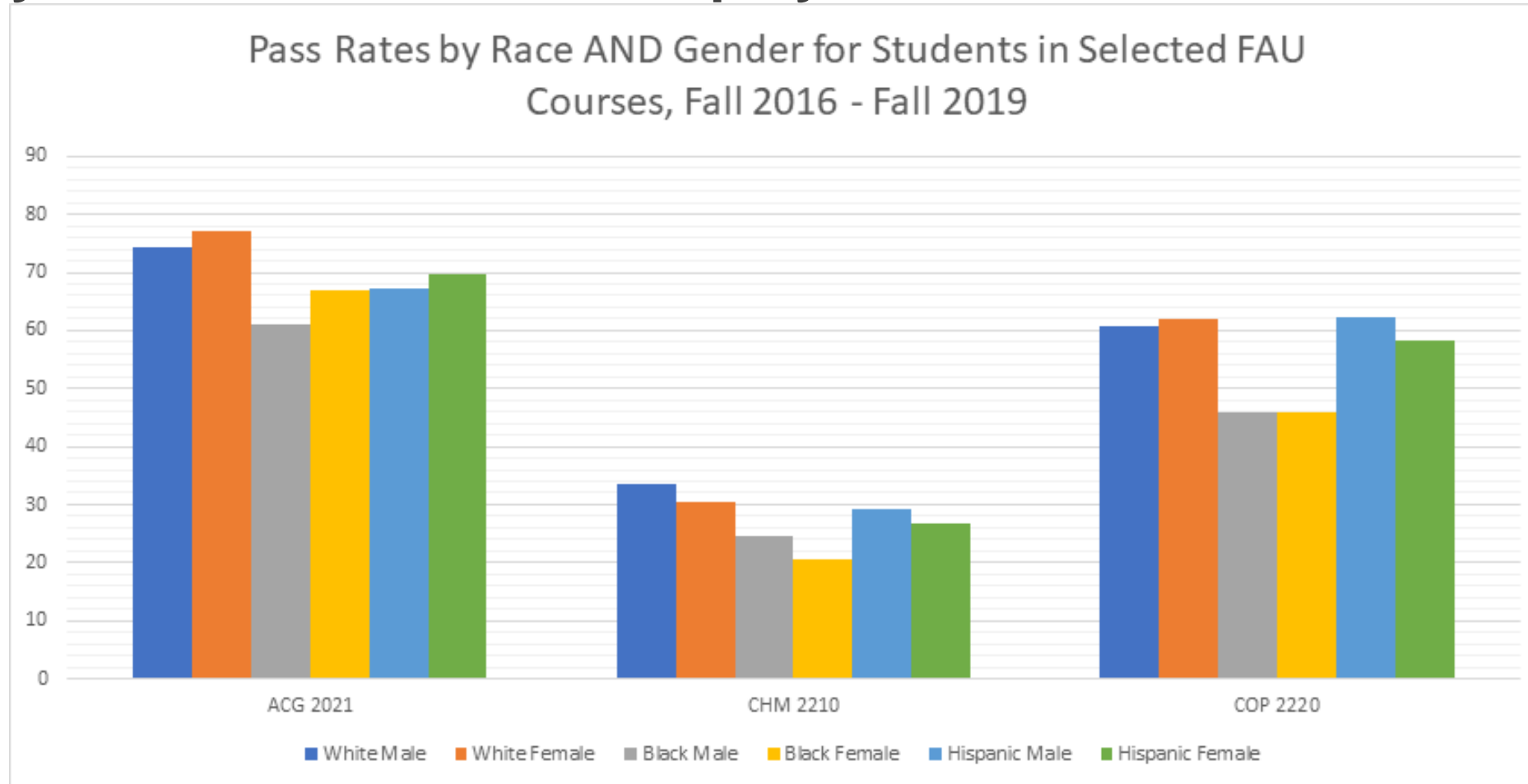


## LA Program impact on course failure (DFW)



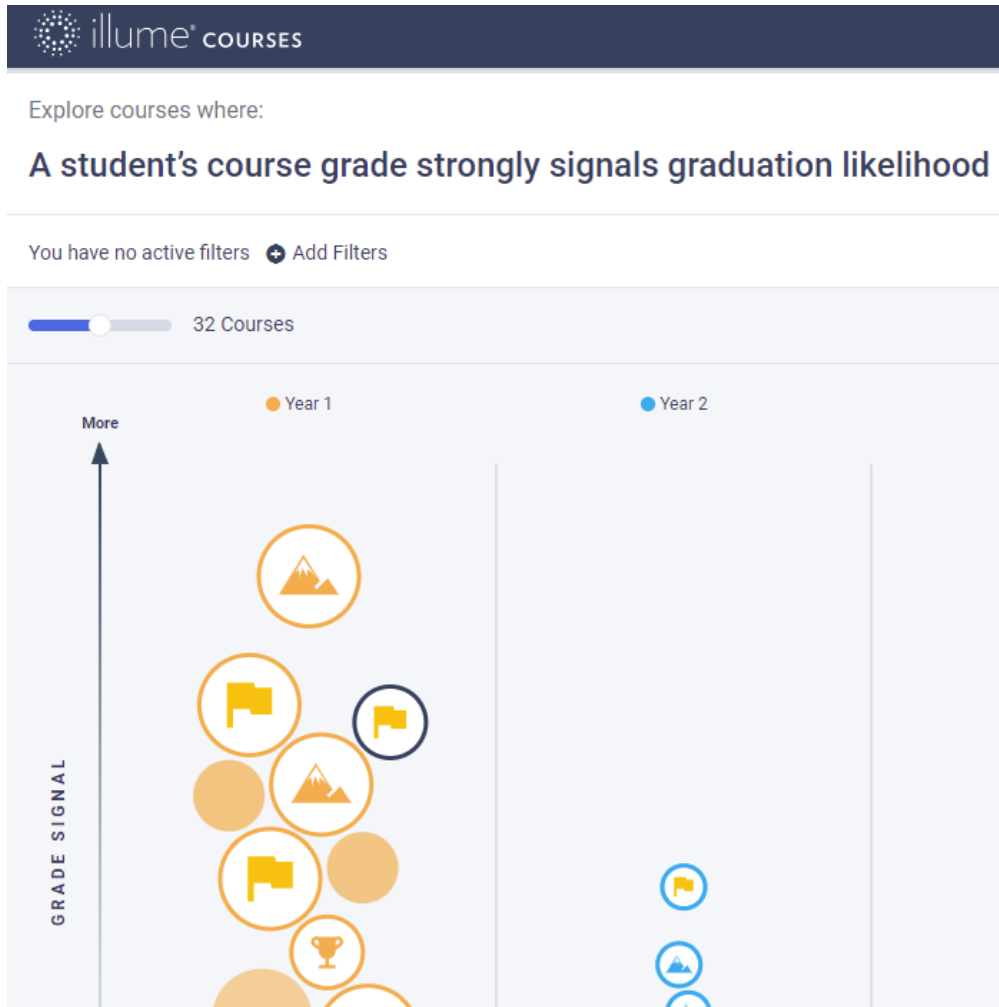
J. Alzen, L. Langdon, and V. K. Otero, 2017 Physics Education Research Conference Proceedings, 36-39 (2018).

# Why we need this at FAU - Equity



**There are few interventions that so clearly impact student course outcomes for students in underrepresented groups.** The LA model significantly impacts outcomes for all students, with an even greater impact on students from the backgrounds that we most need to help.

# Why we need this at FAU - Equity in the IFP



**SYG-1000 : Sociological Perspectives**



*Earning a C in SYG-1000 is a Yellow Flag signal.*

- Students with a C in SYG-1000 are 82.3% likely to persist, but only 45.9% likely to graduate
- Students with a C in SYG-1000 who do persist are 14.9% less likely to graduate than persisting students with higher grades. This drop is 2.7X larger in SYG-1000 than in the average 1st year course.

20k

All-Time Enrollment

10.2pp

Grade Signal

If the average student's grade was one letter higher, you'd see a 2.4 percentage point lift in graduation. **That's 71.4% higher than the average course.**



# Scope of the Program

Based on the annual request in new funds to support LAs (\$200,000 years 1-5; \$100,000 years 6-8; \$50,000 years 9-10) and an average ratio of one LA per 30 enrolled students, we have the following estimates:

	YR0	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	YR10	Totals
<b>LAs hired</b>	50	102	154	206	250	290	305	326	347	357	367	2754
<b>Courses Redesigned* (cumulative)</b>	5	12	19	26	33	40	47	51	55	59	63	63
<b>Students Enrolled in LA Courses</b>	3000	6120	9240	12,360	15,000	17,400	18,300	19,560	20,820	21,420	22,020	165,240

*\*The number of courses redesigned will depend on class size, number of sections, student to LA ratio, and funding from other resources*



**Questions and Feedback Welcome!**

**Thank you!**

**“I know the value of individual achievement. But team achievement is so much more meaningful.**

**When you have a group who works collaboratively and uses their diverse skill sets to do something better than any one of them could hope to do alone, that’s extremely rewarding.”**

**- Dr. John Kelly, President of FAU**

Source: “John Kelly, president of Florida Atlantic University, has a passion for students” Robyn A. Friedman, South Florida Sun-Sentinel, Nov. 19, 2020 <https://www.sun-sentinel.com/business/fl-bz-excalibur-john-kelly-20201119-2vum5bjpyjb4xkqupljkojwjry-story.html>

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# ADDITIONAL SLIDES for Q&A



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# Budget

## 1. LA Office

- a. Director, coordinator and GRA (\$185,000 annually in S&B)
- b. Assessments, professional development, marketing and operations (approximately \$25,000 annually)
- c. Development, recognition and sharing (retreat, showcase, recognition awards; under \$10K annually)

## 2. Faculty Development\* - \$290K total

- a. LA-CRLs - 10 faculty/year (drops to 5/year in year 6) - \$2000 each
- b. Completion of teaching and assessment within model the first time - \$500 each
- c. Course for new instructors teaching previously redesigned courses - \$250 each
- d. LA faculty mentors - 10/year @ \$500 each

## 3. LA student employment\* - \$8 million total

- a. Cost of new LAs annually (\$200K/year; drops to \$100K/year in year 6 and \$50K/year in year 9)
- b. Ongoing support of current LAs
- c. Cost sharing: departments fund 25% then 50% after years 3 and 5 of teaching transformed courses

## 4. One-Time costs

- a. Development of program components (pedagogy, CRL content, assessments) (10 faculty @ \$500)
- b. Classroom renovation\* for active learning - two large classrooms @ \$250,000

\*Funding from grants, donors, carry forward dollars, COCE, and departmental commitments may supplement these areas and increase opportunities for faculty development and the number of LAs selected, decrease departmental cost sharing; or provide for renovation of additional classrooms.

**Total funding requested for planning year and 10 years of QEP: \$11.1 million**

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## Ties to FAU Race to Excellence, 2015 - 2025

- Under the category of **Boldness**, FAU's Strategic Plan for the Race to Excellence, has a strategic initiative to:
  - “Develop an **academic support structure for timely student graduation**“
  - by “Evaluat[ing] and **updat[ing] curricula to be aligned with evidence-based practices**, as established by learning sciences” and
  - “Assist **faculty to develop innovative instructional methodologies and designs across the curriculum.**”
- Another specific goal is to “**Provide meaningful employment on campus** to provide work experience and relieve financial burden for students.”
- This QEP would directly influence these strategic goals.

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# ROI



FAU saves \$3,994.80 in tuition (excluding fees) for each student we keep enrolled for an additional year .

## LA Retention:

- 2,754 students hired as LAs
- $\frac{1}{3}$  of LAs work multiple years, leaving 1,836 unique LAs
- Studies have shown a 9% higher graduation rate for LAs as compared to similar students not in LA positions (Otero, 2015).
- 9% of 1,836 = 165 additional LAs retained who may not have been retained otherwise. Tuition realized by 165 students \* \$3994.80 = **\$660,101** across the QEP period.
- These numbers do not account for additional years of retention if a student is hired as an LA in the first or second year of study.

## LA Participant Retention:

- 165,000 students expected to enroll in LA courses
- Estimating students will average three LA courses during their time at FAU (55,000 unique students) and a modest 3% increase in one-year retention for students in LA courses over students not taking LA courses (Alzen & Otero, 2021), the University will retain 3% of 55,000 = 1650 additional students for at least one year. This equates to a minimum of  $1650 * \$3994.80 = \mathbf{\$6,591,420}$  in tuition income (excluding fees).
- The ROI will be even greater as students are likely to continue enrollment beyond just one year.
- Estimating  $\frac{2}{3}$  of transformed LA courses targeting lower division, and studies demonstrating long-term success for students who take LA courses (McQuade, et al., 2020), we expect 50% of those 1,650 students who are retained for an additional year (825 students) are FTIC or sophomores who will be retained for at least one subsequent year.
- These 825 students will each bring in a second year of tuition revenue totalling **\$3,295,710**.

Revenue Earned from LA Program Retention: The total tuition gained as a result of not losing students through attrition would equate to **\$10,547,231**,

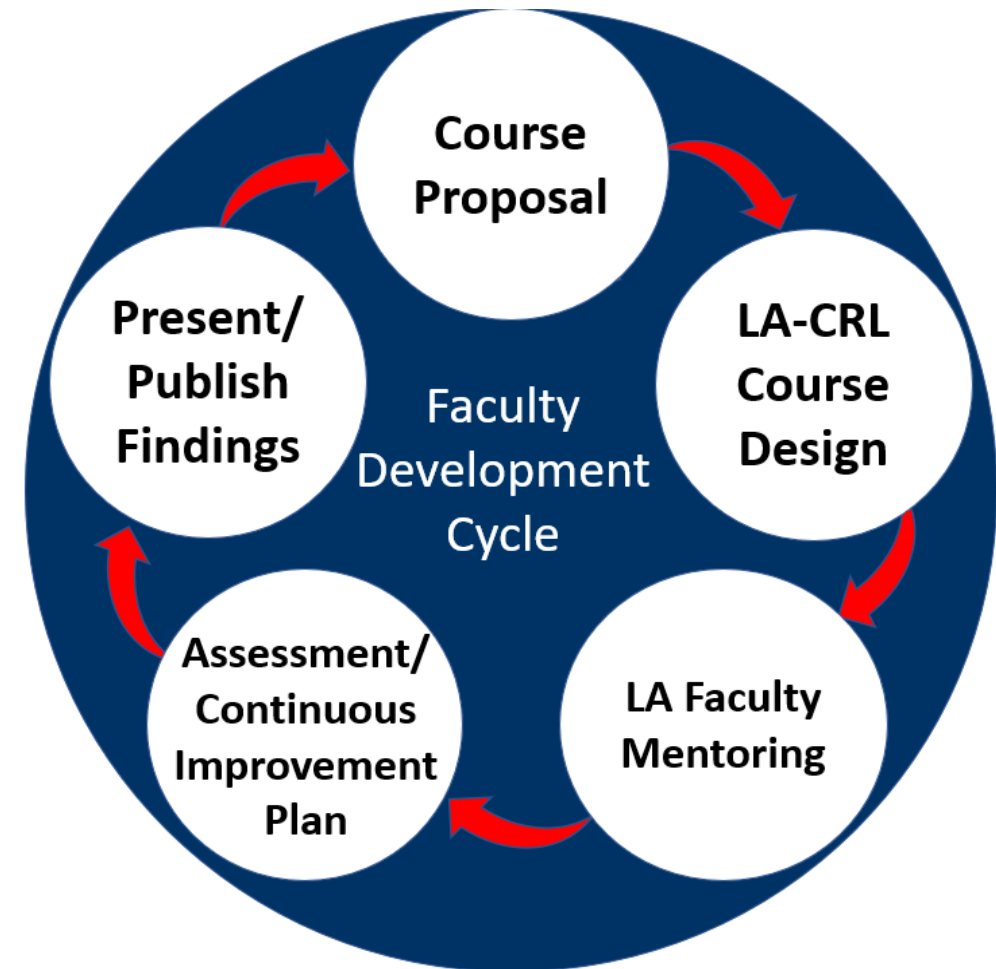
Performance Metric Impact: Assuming an average of  $\frac{1}{3}$  of LA course enrollments are in traditional first-year courses and an average increase in retention by 3% for students who participate in LA courses, we anticipate the following gains in retention rates/Academic Progress Rates (APR) which will earn us additional excellence points on the Florida BOG performance metrics (PM5) in the category where we currently perform the lowest.

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# Faculty Development

- ❖ Course Proposal Process
  - LA Campus
- ❖ LA-CRL Course Design
  - space for conversation and reflection on how we teach
- ❖ LA Faculty Mentoring
- ❖ Assessment/Continuous Improvement Plan
  - Reflect/submit after each semester
  - Formal process after years 3 and 5
- ❖ Present/Publish Findings
- ❖ Canvas course for new instructors



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# Why we need this at FAU - Metrics and KPIs

- **Improvement on Performance Metrics and KPIs**
  - **Academic Progress Rate (APR)** has greatest room for improvement
    - We perform lowest on this metric (1 point last year)
    - With  $\frac{1}{3}$  of courses focused on FTIC, will significantly impact course completion with higher grades and retention due to enhanced engagement (students matter and are accountable to each other, make friends, enjoy learning)
  - Improve **graduation rates** (4/6 year; AA transfer and Pell)
    - Decrease DFW helps students progress through prior roadblocks
    - Research shows LAs graduate at higher rates than other high achieving students
  - Improve **time to degree** and lower excess hours
  - **Lower DFW rates** across wide range of courses

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# Goals/Assessment

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**Goal 1:** Transform the culture of teaching and learning through course redesign to incorporate collaborative learning, enhance student engagement, and create more equitable and inclusive learning environments

Student Learning Outcomes		Measurements
A	Heightened ability in students to think critically and apply material learned ( <i>CCI</i> )	In class assessments, NSSE
B	Improved content-based student learning gains ( <i>KPI5</i> )	Content area pre- and post-tests; DFW reports
C	Demonstrated increases in NACE career competencies for students and LAs ( <i>PM1-2, CCI-8, KPI6,14-15</i> )	Alumni/employer surveys, NSSE, LA course student evaluation/surveys, pedagogy reflections, pre/post competency assessments
Student Success Outcomes		Measurements
D	Strengthened student satisfaction with instruction	SPOT, LA surveys, NSSE, student satisfaction/alumni surveys
E	Increased sense of belonging and thriving for students and LAs	Healthy minds survey, NSSE, attitudinal pre/post surveys
F	Increased sense of community, engagement, and student satisfaction in distance learning courses	SPOT, course surveys
G	Participation in more equitable learning environments as LAs close the gap for students from historically disadvantaged backgrounds ( <i>PM4-6, PMnew1-2, KPI1-5</i> )	IEA dashboards and reports, DFW reports by race, gender, ethnicity, first-generation status
H	Enhanced student feelings of inclusivity fostered by LAs	LA surveys, attitudinal pre/post-surveys, NSSE diversity module

# Goals/Assessment

<b>Goal 2:</b> Enhance student performance with redesigned courses, yielding positive impacts on KPIs and performance metrics		
Student Success Outcomes		Measurements
A	Decreased DFW rates and time to degree; increased graduation rates, especially for students and LAs from historically underrepresented groups ( <i>PM4-6,9, PMnew1-2, KPI1-5,8,11</i> )	IEA data reports
B	Increased retention of high achieving students/LAs	IEA data reports
C	Increased retention within major, progression to degree, completion of gateway courses for students/LAs ( <i>PM4-6,9, PMnew1-2, KPI1-5,8,11</i> )	IEA data reports
<b>Goal 3:</b> Design opportunities for faculty development inclusive of LA Communities to Reimagine Learning (LA-CRLs), new LA faculty canvas course, LA faculty mentoring roles, and LA program showcases to provide cross-departmental discussion and sharing of ideas and best practices		
Faculty Outcomes		Measurements
A	Increased faculty knowledge of effective pedagogies and active collaborative learning strategies for use in the design and implementation of transformed courses ( <i>KPI5</i> )	LA-CRL pre/post surveys, LA faculty canvas course assessments, syllabus, and course material analysis
B	Strengthened faculty feelings of satisfaction, engagement, and support as a result of teaching LA courses	Faculty surveys
C	Enhanced faculty development activities and LA teaching experiences on non-LA courses that faculty members teach	Faculty surveys
D	Guided faculty development of an assessment plan for redesigned courses	Faculty submission of course assessment plan and supporting materials through LA Campus
E	Heightened sense of awareness about challenges students face, both academic and non-academic, and strategies for addressing these	LA-CRL pre/post surveys, LA faculty canvas course assessments, syllabus, and course material analysis
F	Increased opportunities for faculty to showcase publications, best practices, and impacts across disciplines; promotion of LA model to non-LA faculty	Showcase participant survey, self-report of publications and presentations on the LA model through FAIR Reporting and to the LA Office

# Goals/Assessment

<b>Goal 4: Build 0-credit LA Pedagogy and 1-credit Advanced LA Pedagogy courses</b>		
<b>Student Learning Outcomes</b>		<b>Measurements</b>
A	Heightened ability for LAs to think critically and apply effective pedagogical techniques ( <i>PM1-2, KPI14-15, CCI-8</i> )	LA Pedagogy course reflections, assignments, presentations, and assessments
B	Advanced understanding for LAs of the elements of a research project and ability to develop presentations and/or publications with faculty in the LA model ( <i>CCI-3,6-8</i> )	Assessments in advanced pedagogy course
<b>Student Success Outcomes</b>		<b>Measurements</b>
C	Increased undergraduate research opportunities for LAs ( <i>CCI-3,6-8</i> )	Self-report, publications, and presentations
<b>Goal 5: Increase undergraduate student employment opportunities</b>		
<b>Student Success Outcomes</b>		<b>Measurements</b>
A	Greater retention and graduation for LAs, especially those from historically disadvantaged populations ( <i>PM4-6, PMnew1-2, KPI1-5</i> )	IEA dashboards and reports, DFW reports by race, gender, ethnicity, first-generation status
<b>Goal 6: Recruit and prepare future teachers</b>		
<b>Student Learning Outcomes</b>		<b>Measurements</b>
A	Expanded interest in/desire to investigate teaching as a career for LAs	LA surveys; observations of authentic classroom experiences
<b>Student Success Outcomes</b>		<b>Measurements</b>
B	Greater completion by LAs of teacher certification programs and/or enrollment in graduate programs with the intent of collegiate teaching ( <i>PM1,6, KPI11,14-15</i> )	LA exit survey, state certification records, graduate school enrollment

# Goals/Assessment

<b>Goal 7: Conduct LA program evaluation</b>		
<b>Program Outcomes</b>		<b>Measurements</b>
A	Increased number and breadth of courses/sections redesigned, number of students enrolled in LA courses, and number of LAs employed over the next ten years	LA Campus, IEA data reports
B	Increased progression of students in gateway courses and persistence in major for students enrolled in LA courses	IEA data reports
C	Expanded number of faculty involved in faculty development activities	LA Campus, Canvas, Annual Fall retreat and Showcase attendance, FAIR reports
D	Correlated outcomes between the number of LA courses a student participates in and any increase in persistence and graduation (both generally and within the major).	IEA data reports and research studies



# Why we need this at FAU - Improve Satisfaction

- **2020 Faculty Survey**
  - faculty desire to improve instruction, engagement, and student competencies
- **2020 Alumni Survey**
  - Indications that FAU is not preparing our graduates with skills employers seek
  - Feedback from alumni on ways to improve course design
  - Disengagement as a student, especially online students
  - Areas for improvement related to diversity, inclusivity and support of mental health
- **NSSE**
  - FAU students below peers in areas of Academic Challenge and Collaborative Learning

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## Why we need this at FAU - Improve Student Mental Health and Sense of Belonging

- The 2020 Healthy Minds Survey indicated that student depression and anxiety has worsened over the past several years
- Students feel less connected than ever before
- Mental health literacy training will be provided for LAs and their faculty to engage with, and appropriately refer distressed students
- Students will feel a sense of belonging with their learning team which can reduce feelings of isolation and depression



# Career Readiness Competencies

Career readiness is the attainment and demonstration of requisite competencies that broadly prepare college graduates for a successful transition into the workplace. These competencies are:

- Critical Thinking/Problem Solving
- Oral/Written Communications
- Teamwork/Collaboration
- Digital Technology
- Leadership
- Professionalism/Work Ethic
- Career Management
- Global/Intercultural Fluency

*(<https://www.naceweb.org/career-readiness/competencies/career-readiness-defined/>)*

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## Why we need this at FAU - Enhance Career Competency & Employability

<b>Fall 2020 QEP Employer Survey - Attributes and Competencies Sought</b>	<b>Mean Score for IMPORTANCE</b>	<b>Mean Score for FAU Graduate ABILITY</b>
Ability to manage time and priorities	1.0	1.73
Ability to act in a professional manner (personal accountability, effective work habits, etc.)	1.02	1.56
Ability to work effectively as part of a group or team	1.05	1.47
Ability to demonstrate critical thinking skills	1.06	1.70

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## How do we decide WHICH courses are transformed?

The LA Advisory Board will select a committee to review course proposals annually. The committee will be led by the LA director and have membership from multiple colleges, departments and campuses and representation by key partners. Until formulation of the Advisory Board, the LA director will select the committee.

A non-voting faculty representative from the course discipline will be included to talk about the content and how the pedagogy proposed fits with the course content.

A rubric will be developed to fairly assess all submitted proposals.

- $\frac{1}{3}$  of courses will be traditional FTIC courses
- $\frac{2}{3}$  of courses will be lower division (inclusive of FTIC)
- Two courses annually non-STEM
- Special consideration will be given for courses from a department or campus not previously included as well as for online courses or courses targeting transfer students.

All course proposals must address the impact of redesign on equity and inclusivity.

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# Sample Timeline for New Courses



For redesigned courses starting in **Fall 2022**.

**Summer 2021** - create process for submitting proposals (planning year-design LA-CRL)

**September 2021:** process for submitting proposals opens (making the case for your course--why you need/want LA)

**September - October 2021:** LA office runs workshops and 1-on-1 meetings with for faculty submitting proposals (after year 1, faculty mentors will be involved)

**November 2021:** proposal deadline, course selection and notification of faculty

**January - June 2022:** LA Communities to Reimagine Learning (LA-CRLs) with selected faculty to redesign their courses, develop assessment plans and teaching materials

**July 2022:** hiring of Learning Assistants for redesigned courses; submission of LA syllabus by faculty

**August - December 2022:** faculty teach redesigned course with LA model and collect data

**January 2023:** faculty report outcomes for redesigned courses; plan for continuous improvement

In years 2-5, a second annual cycle will be offered in spring with course redesign in fall for January implementation.

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# LA Race & Ethnicity - If I see it, I can be it

While only 12% of FAU faculty and about one-fourth of GTAs are nonwhite, LAs closely mirror the FAU undergraduate student population with over 50% non-white and just under 20% identifying as Hispanic this academic year. As LAs are likely to consider graduate and teaching programs, having a diverse cohort of LAs creates a pipeline of diverse students into GTA and potentially faculty lines.

Fall 2020 - Spring 2021 LA Race & Ethnicity	Number (N=57)	Percent
White	28	49%
Black	14	25%
Asian	12	21%
Mixed Races	3	5%
Hispanic	11	19%
Non-Hispanic	46	81%

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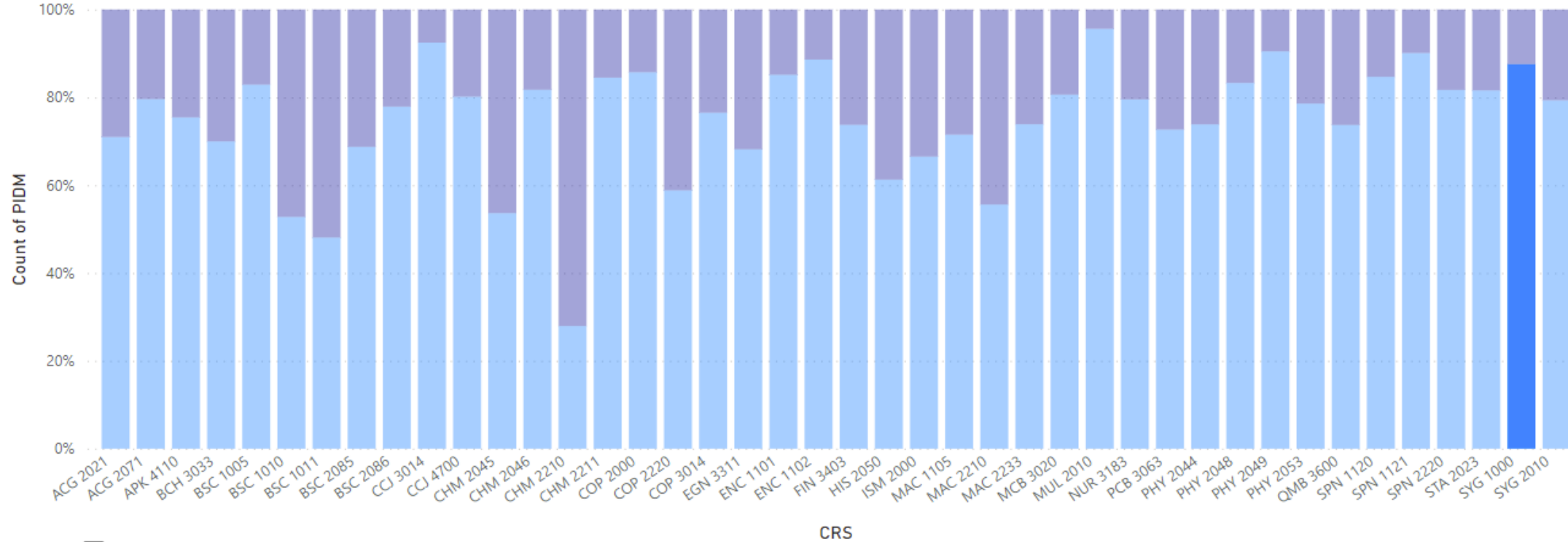
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### Count of PIDM by CRS and FINAL GRADE

FINAL GRADE ● A/B/C ● DFW



#### GENDER

- F
- M
- X

#### FIRST\_GEN\_IND

- (Blank)
- N
- X
- Y

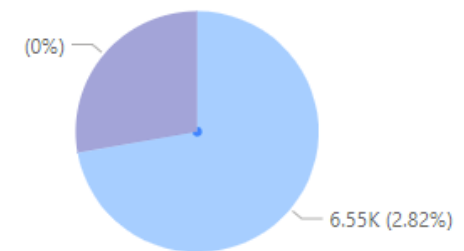
#### RACE\_ETHNICITY\_DESC

- (Blank)
- American Indian/Alaskan Native
- Asian Or Pacific Islander
- Black (Not of Hispanic Origin)
- Hispanic
- MISSING
- Non-Resident Alien
- White (Not of Hispanic Origin)

#### STU\_RECENT\_ADM\_DESC

- Beginner - FTIC
- Dually Enrolled - High School
- Early Admit, Prior to High School...
- Graduate
- Medicine
- Other Undergraduate Transfer
- Post Baccalaureate, Degree Seeki...
- Transfer From A Florida Public C...
- Unclassified Student

### Count of PIDM by FINAL GRADE



#### FINAL GRADE

- A/B/C
- DFW



## Research Data

Caravez 2017 - Teaching without LAs yields a decline in concept learning for students as compared to those teaching with LAs. Study used LASSO database which includes student data from participating courses. Used 3 years of intro physics 1 and 2 courses - pretest and posttest scores. Looked at 4,365 scores for 93 courses. Showed that course features are meaningfully related to student performance.

Instructors teaching with LAs

Instructors who teach semester after semester without LAs see a decline in student outcomes as compared to those who teach with LAs.

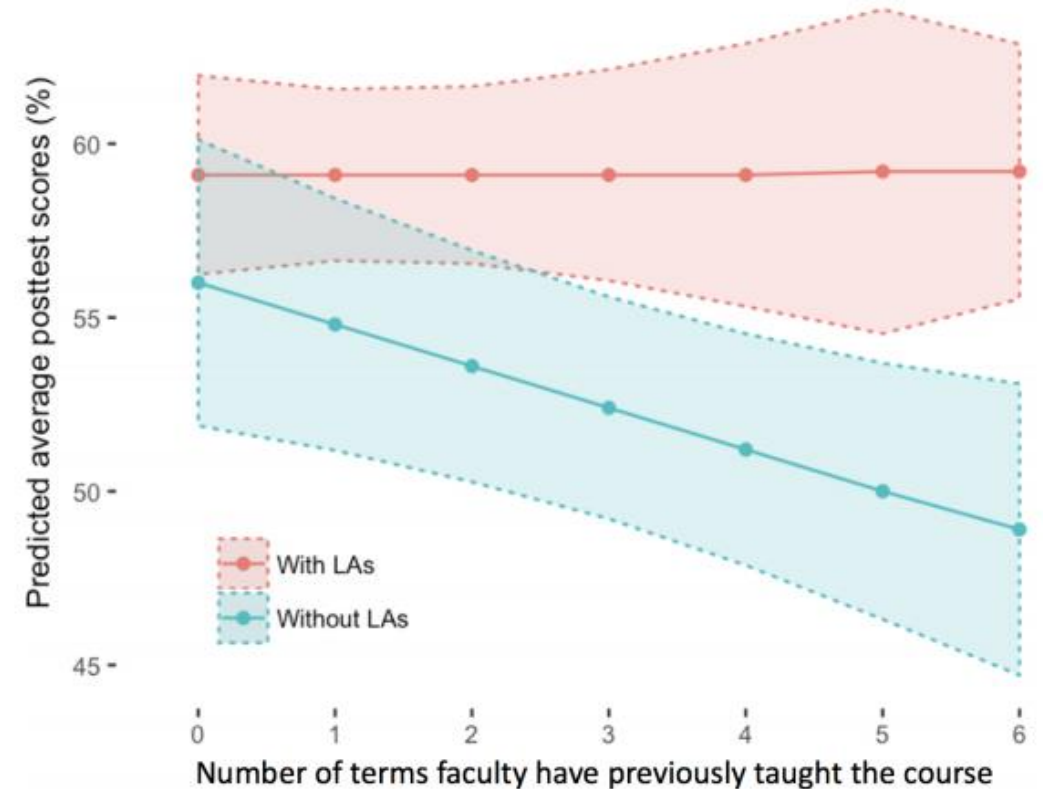


FIG. 2. Predicted posttest scores for average students with instructors who habitually teach with or without LAs (95% confidence interval).



## Research Data

Herrera et al. 2018 - Using the Learning About STEM Student Outcomes (LASSO) database, we examined student learning from 112 first-semester physics courses that used either lecture-based instruction, collaborative instruction without LAs, or LA supported instruction.

We measured student learning using 5959 students' responses on the Force and Motion Conceptual Evaluation (FMCE) or Force Concept Inventory (FCI). Results from Hierarchical Linear Models (HLM) indicated that LA supported courses had higher posttest scores than collaborative courses without LAs and that LA supported courses that used LAs in laboratory and recitation had higher posttest scores than those that used LAs in lecture.

Students in traditional courses had gains from pretest to posttest of 13.2%. Students learned 1.27 times more in courses with collaborative learning and 1.55 times more in LA supported courses than in traditional courses.

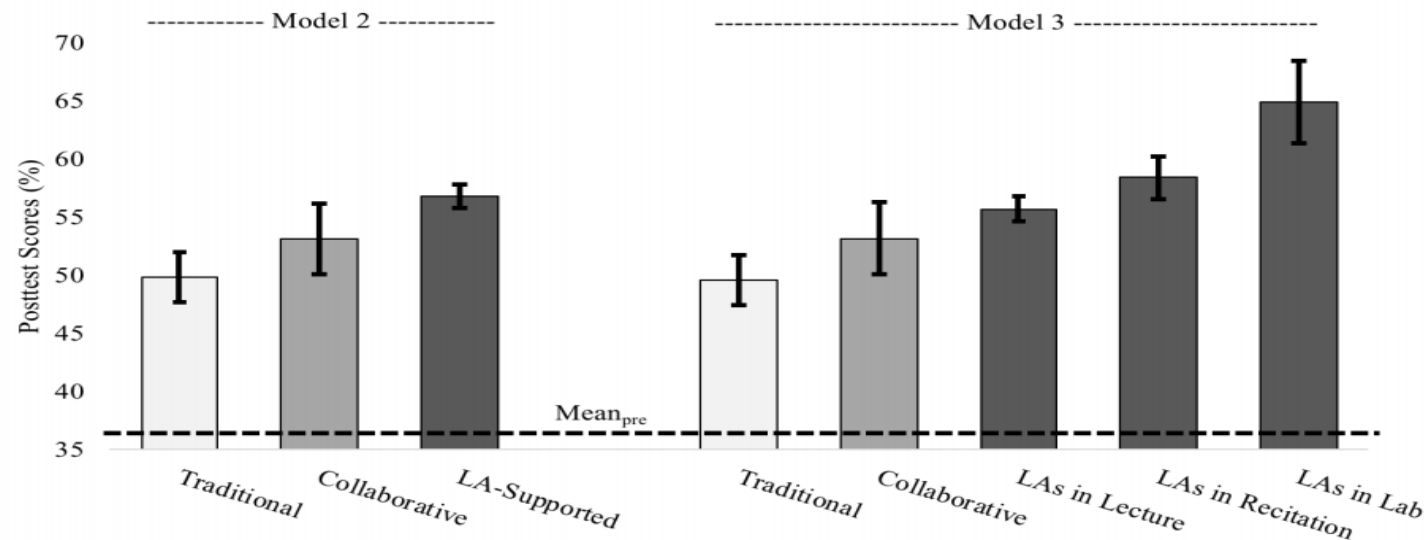


FIG. 1. Predicted posttest scores for traditional, collaborative, and LA supported courses. Error bars were calculated using the hypothesis testing function on HLM and are one standard deviation from the mean. Class mean pre score was 36%.



# Research Data

Otero et al. 2006. **Who is Responsible for Preparing Science Teachers.** Science.

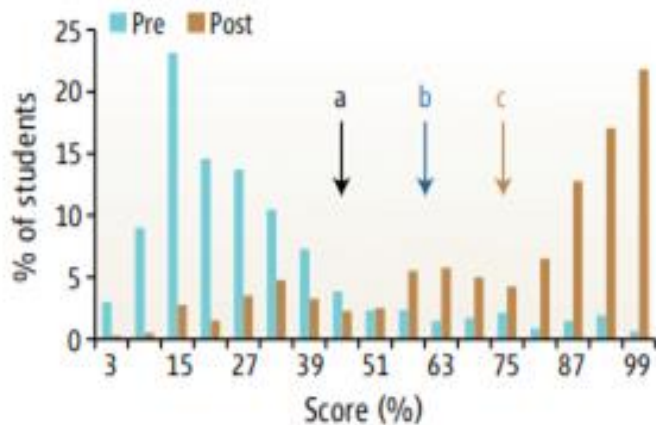
The LA program improved recruitment rates to science teacher certification programs over preexisting rates.

Each of the participating departments demonstrates improved student achievement as a result of the learning assistant program

Undergraduates enrolled in science teacher certification programs

Major	All of Colorado (2004–2005)	CU Boulder (2004–2005)	CU Boulder (2005–2006)
	LAs not included	LAs not included	LAs recruited
Physics and astrophysics	2	1	7
MCD biology	0	0	4
Chemistry	14	0	N.A.
Geoscience	11	0	N.A.

**More students enticed into teaching.** The learning assistant (LA) program at CU Boulder improved recruitment of undergraduate students into K–12 teacher certification programs relative to the undergraduate recruitment rates noted for 2004 to 2005 without the learning assistant program. Chemistry and geoscience joined the program in 2006, and so have not yet recruited students into teaching certification programs. N.A., not applicable.



**Learning assistants improve student learning.** Pretest and posttest FMCE results for CU students in a transformed course with learning assistants. The pretest median is 24% ( $\pm 1\%$ ) ( $n = 467$ ); the posttest median is 85% ( $\pm 1\%$ ) ( $n = 399$ ). Arrows indicate posttest average (mean) scores for (a) students nationwide in traditional courses with pretest scores matching those of CU students, (b) students in a CU course that features educational reforms but no learning assistants, and (c) students in the CU course transformed with learning assistants (arrow shows the mean of the brown bars).

Faculty members report increased attention to what and how students learn. In a study of faculty response to this program, all 11 faculty members interviewed reported that collaborative work is essential, and learning assistants are instrumental to change (7). One faculty member notes: “I’ve taught [this course] a million times. I could do it in my sleep without preparing a lesson. But [now] I’m spending a lot of time preparing lessons for [students]...”

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# Research Data

## Implementation of a Learning Assistant Program Improves Student Performance on Higher-Order Assessments

Sellami et al. 2018

URM students scored on average 64.6% (SD: 9.9%) without LAs and 73.2% (SD: 9.9%) with LAs. Non-URM students without LA implementation scored 74.8% (SD: 11.8%) and 77.5% (SD: 9.9%) with LAs.

This demonstrates that the positive effect of LA implementation is higher for URM students than non-URM students and is contributing to closing the gap on performance on HOCS exam scores.

	Classroom	Discussion Section	Other
	Instructor, 1 TA / 72 students, 1 LA/ 24 students	1 TA / 24 students, 2 LAs / 24 students	Each LA
Activities	<ul style="list-style-type: none"> <li>Think-pair-share (clicker questions)</li> <li>Worksheets (group work)</li> </ul>	<ul style="list-style-type: none"> <li>Worksheets (group work)</li> <li>Case studies</li> </ul>	<ul style="list-style-type: none"> <li>Q&amp;A office hours</li> <li>Class discussion board (online)</li> </ul>
LA tasks	<ul style="list-style-type: none"> <li>Ask for student reasoning</li> <li>Guide to correct answer without 'giving the answer'</li> <li>Promote participation in think-pair-share</li> </ul>	<ul style="list-style-type: none"> <li>Ask for student reasoning</li> <li>Guide to correct answer without 'giving the answer'</li> <li>Promote group work</li> <li>Promote class discussion</li> </ul>	<ul style="list-style-type: none"> <li>Answer questions on discussion board</li> <li>Ask for student reasoning</li> <li>Guide towards effective study strategies</li> </ul>

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## About the LA Office

Where is it housed?

- The expansiveness across the university means this should be centralized, not under a specific college.
- We envision this as part of the CTL, which already encompasses academic support and faculty development

What does it do?

Staffed by a director, coordinator, and Graduate Research Assistant (GRA), the LA Office will begin developing and implementing all aspects of the program.

Guide creation and implementation of written QEP; purchase and train on elements of LA Campus software; develop and launch course proposal process for faculty; committee selection for determining initial LA courses for transformation (fall); develop and implement all aspects of faculty development (launch in spring); hiring, training, and evaluation of LAs; redesign classrooms for active learning; develop all required assessment components.

Conduct program evaluation

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# International LA Alliance



The LA Program was founded at the University of Colorado, Boulder in 2001. Currently, 107 institutions worldwide have LA Programs



FAU is emerging as a leader within the LA Alliance. This QEP would increase FAU recognition for their leadership among LA Alliance institutions.

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# Teaching vs. Learning



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