



Research Learning Experiences (RLEs)

University of Maine System Student Success & Retention initiative

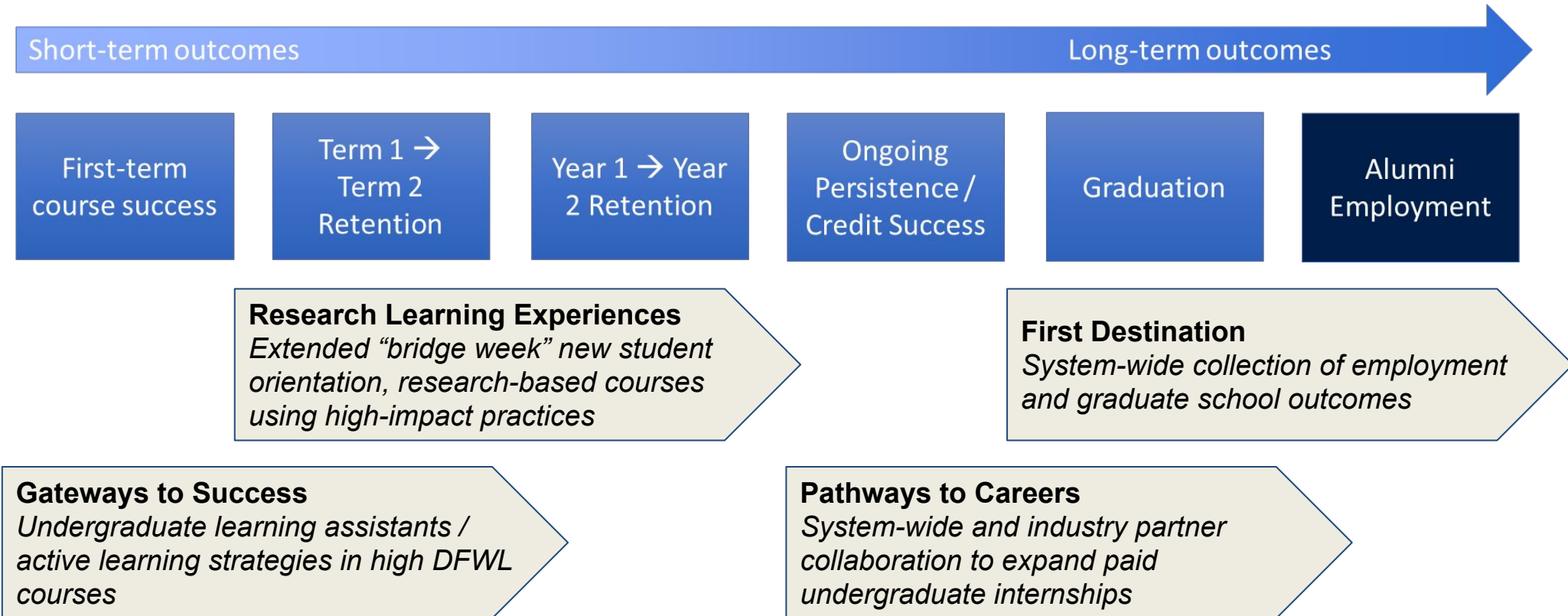
Holly White, Doctoral Student
Nate Flint, Evaluation Specialist

Debra Allen, Associate Provost for IR & Assessment
Brian Olsen, Executive Director of UMS Transforms SSR
Katharine Ruskin, Lecturer and Undergraduate Coordinator
John Volin, EVP for Academic Affairs and Provost

Research Learning Experiences Context

















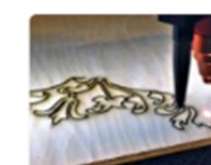
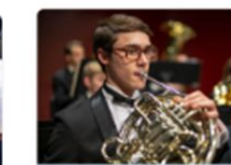


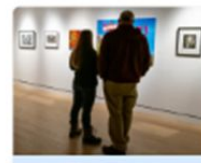





- Student Success & Retention - Outcomes & Initiatives
 - RLE Definition & Examples
 - Growth and Scale
 - RLE Logic Model & Assessment

Student Success & Retention Outcomes and Initiatives



What makes an RLE?

- Summer “bridge week”
- First-semester experience
- Course-based research for credit
- Small class size (<24)
- Pedagogy focused on discovery, knowledge creation, experiential learning, active learning

 <p>RLE 01 Print in 3D</p> <p>Learn more →</p>	 <p>RLE 02 Map history</p> <p>Learn more →</p>	 <p>RLE 03 Blow up art</p> <p>Learn more →</p>	 <p>RLE 04 Harvest timber</p> <p>Learn more →</p>	 <p>RLE 05 Make friends and build community</p> <p>Learn more →</p>	 <p>RLE 08 Inspire Earth's future with design</p> <p>Learn more →</p>	 <p>RLE 09 Innovate</p> <p>Learn more →</p>	 <p>RLE 10 Track animal DNA</p> <p>Learn more →</p>	 <p>RLE 12 Research wind power</p> <p>Learn more →</p>
 <p>RLE 13 Experience engineering</p> <p>Learn more →</p>	 <p>RLE 14 Make a better farm</p> <p>Learn more →</p>	 <p>RLE 16 Play with electricity</p> <p>Learn more →</p>	 <p>RLE 17 Explore Maine's landscapes</p> <p>Learn more →</p>	 <p>RLE 19 Garden like a medieval monk</p> <p>Learn more →</p>	 <p>RLE 20 Track the shifting seasons</p> <p>Learn more →</p>	 <p>RLE 21 Energize a mechanical system</p> <p>Learn more →</p>	 <p>RLE 22 Make a unique logo</p> <p>Learn more →</p>	 <p>RLE 23 Perform music</p> <p>Learn more →</p>
 <p>RLE 25 Explore the outdoors</p> <p>Learn more →</p>	 <p>RLE 26 Hunt for viruses</p> <p>Learn more →</p>	 <p>RLE 28 Experience art and culture</p> <p>Learn more →</p>	 <p>RLE 29 Interpret geologic history</p> <p>Learn more →</p>	 <p>RLE 30 Develop sustainable solutions</p> <p>Learn more →</p>	 <p>RLE 31 (Don't) sponsor an athlete</p> <p>Learn more →</p>	 <p>RLE 33 Measure a forest</p> <p>Learn more →</p>	 <p>RLE 34 Cruise a river</p> <p>Learn more →</p>	



RLE 01
Print in 3D

[Learn more →](#)



RLE 14
**Make a
better farm**

[Learn more →](#)



RLE 23
**Perform
music**

[Learn more →](#)

outdoors

[Learn more →](#)

viruses

[Learn more →](#)

RLE 28
experience art
and culture

[Learn more →](#)

history

[Learn more →](#)

solutions

[Learn more →](#)

RLE 31
(Don't) sponsor
an athlete

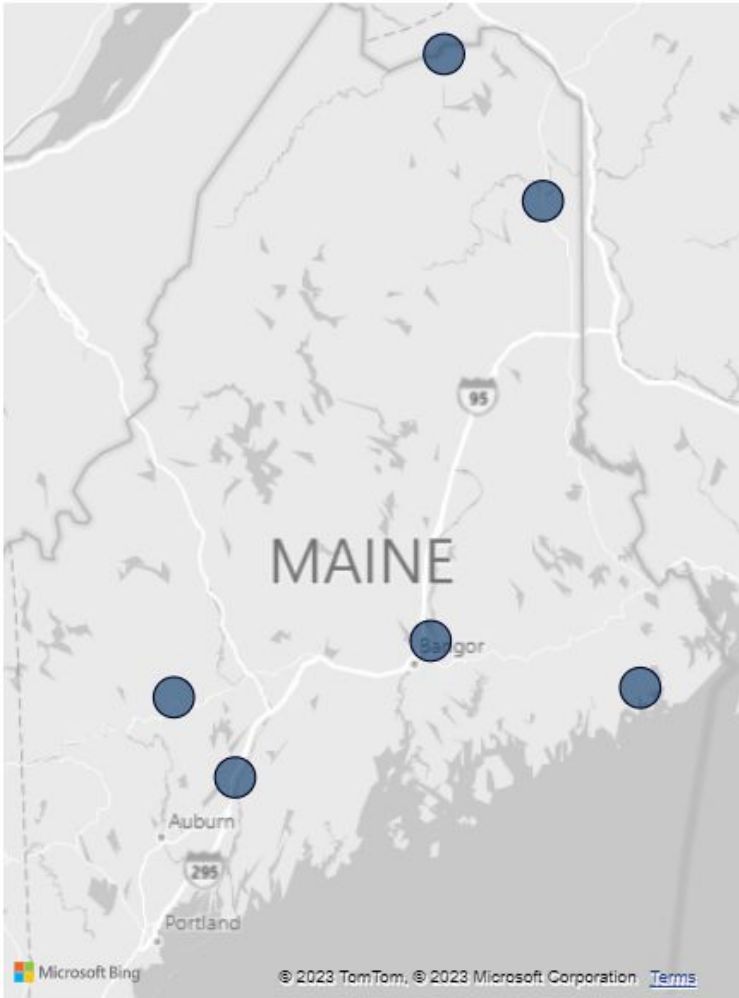
[Learn more →](#)

Measure a forest

[Learn more →](#)

Cruise a river

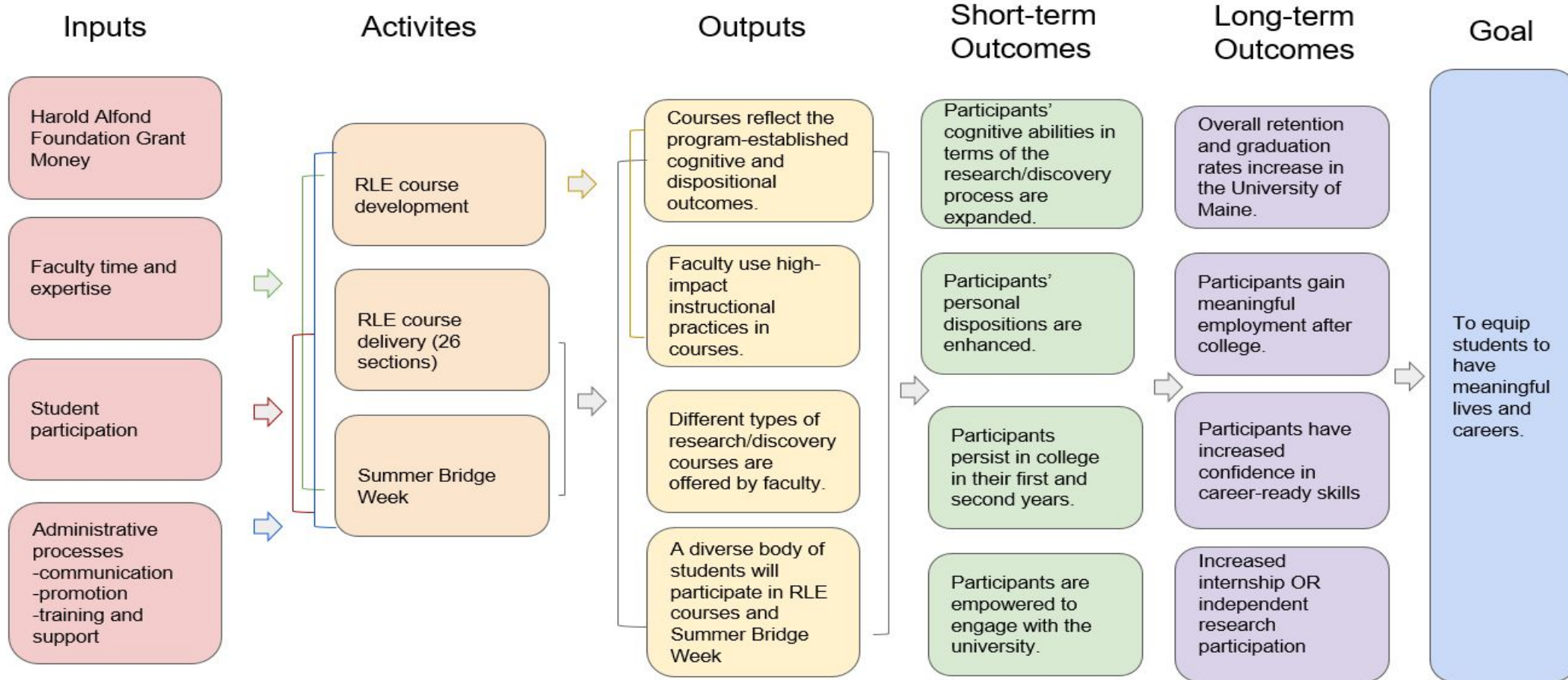
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Growth and Scale of RLE

Unique Students (RLE courses)	2021-22 (Y1)	2022-23 (Y2)	Total
University of Maine at Augusta		17 (1)	17 (1)
University of Maine at Farmington		148 (12)	148 (12)
University of Maine at Fort Kent		28 (4)	28 (4)
University of Maine at Machias	6 (1)		6 (1)
University of Maine	241 (39)	42 (355)	594 (84)
University of Southern Maine			
University of Maine at Presque Isle		9 (5)	9 (5)
University of Maine System	247 (40)	557 (64)	802 (104)

Logic Model



Implementation of Assessment

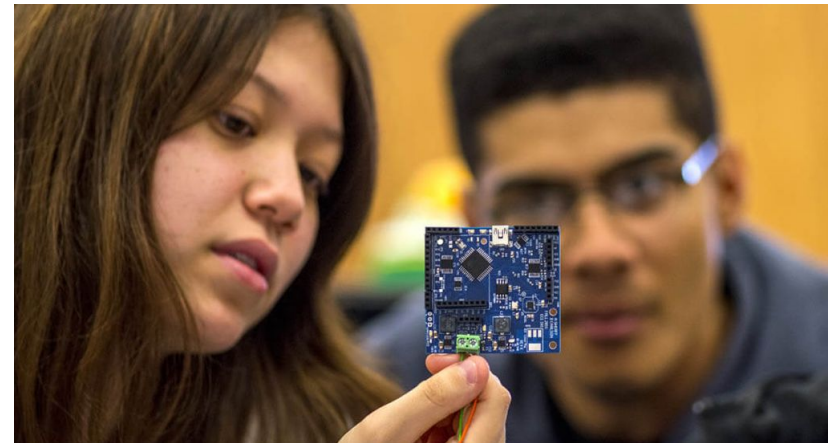
Assessment Activity	Timing	Time needed	Tech System	RLE sections	non-RLE control group
Faculty alignment survey <i>Provide information on alignment of course and assignments with the learning outcomes</i>	First 1-2 weeks	As needed	Qualtrics	✓	
Student pre-course survey <i>Scales on sense of belonging, academic self-efficacy, research self-efficacy, etc...</i>	First 1-2 weeks	15 minutes	Qualtrics	✓	✓
Faculty survey <i>High-impact practices and instructional approaches employed, feedback on implementation, likelihood to teach an RLE again, etc...</i>	After midterms	15 minutes	Qualtrics	✓	
Student post-course survey <i>Scales on sense of belonging, academic self-efficacy, research self-efficacy, etc, experiential learning and project ownership...</i>	Last 1-2 weeks	15 minutes	Qualtrics	✓	✓
Rubric Assessment <i>Faculty assess students on at least one cognitive learning outcomes</i>	Last week / finals	As needed	Brightspace	✓	

Results & Findings

- Outcomes from Pilot Years 1 and 2
 - Student Surveys
 - Student Interviews
 - Future Analyses

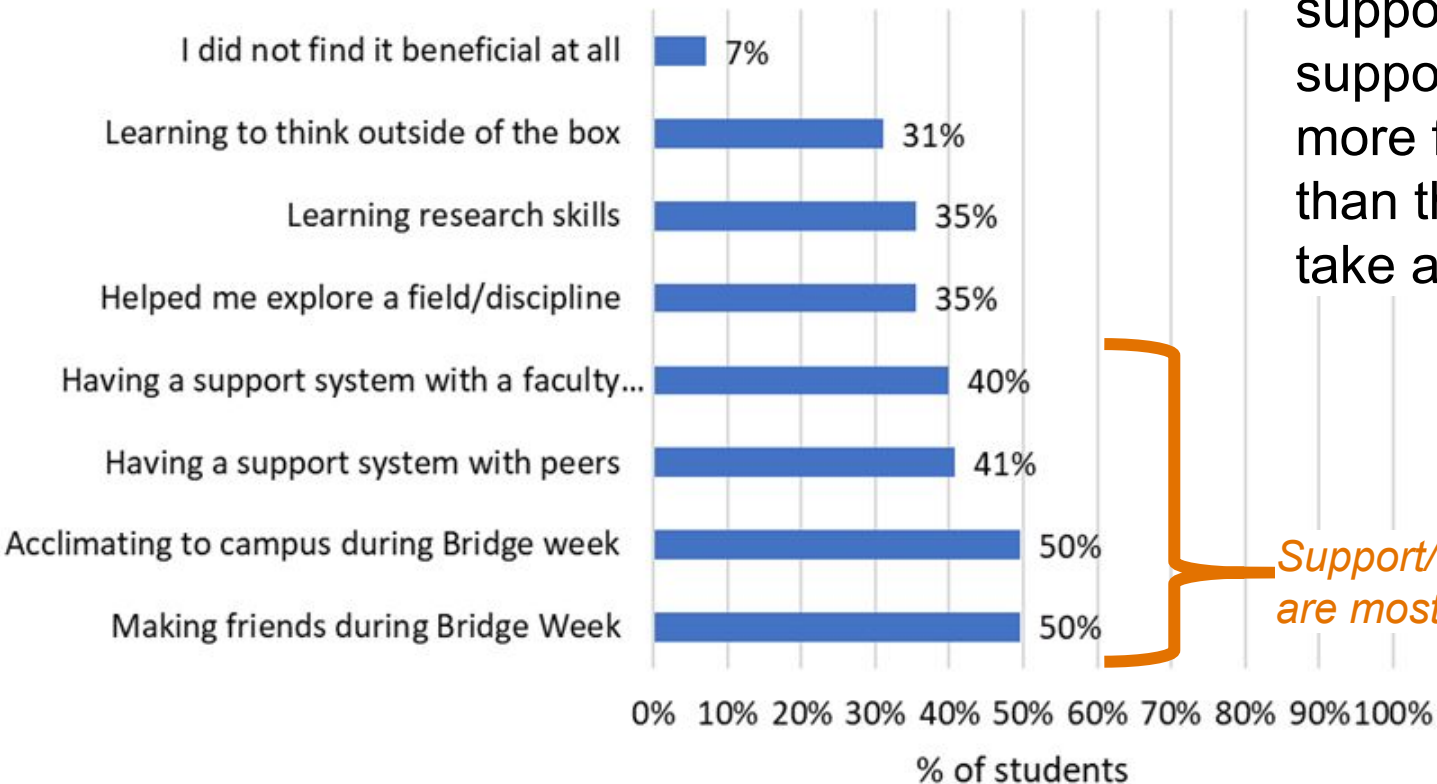
Pilot Year Outcomes: Fall 2021

- RLE students' post scores differed significantly from their pre scores on the following survey constructs:
 - *Collaboration*
 - *Confidence in Research Tasks*
- Similar, and significant drop from pre-post in *Morale* for both RLE and non-RLE students.
- No statistically significant differences were found between RLE and non-RLE students when controlling for demographic characteristics.



Student-Reported RLE Benefits

RLE Benefits

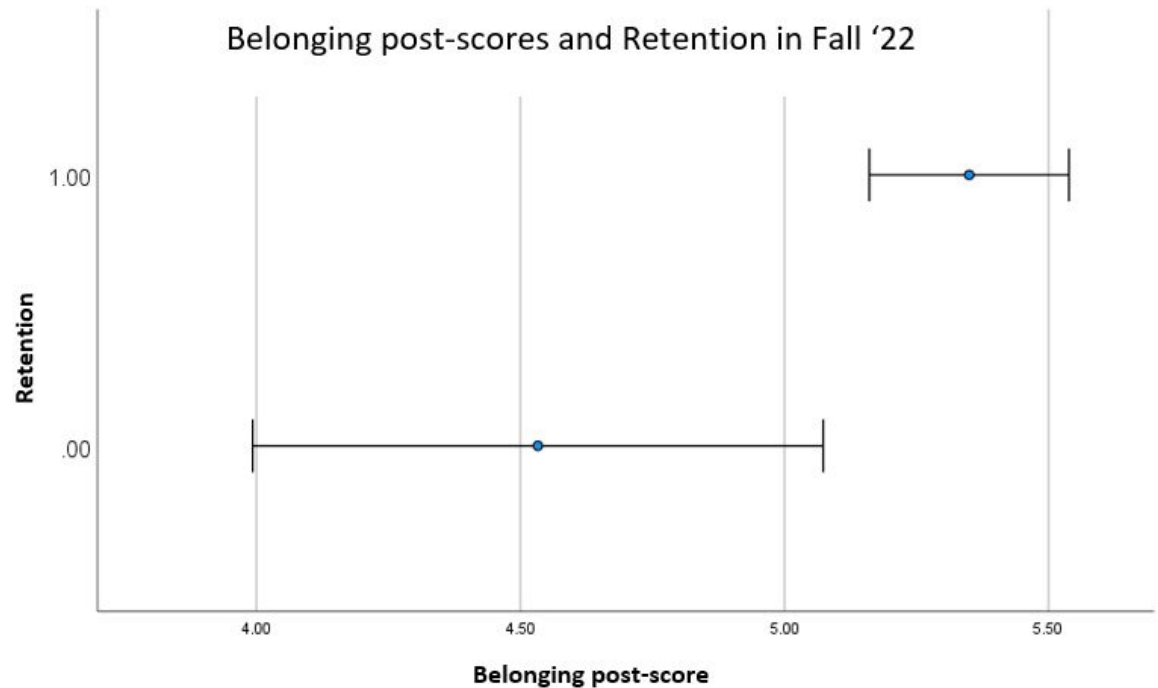


RLE students report feeling supported or strongly supported by their classmates more frequently (RLE=68%) than their peers who did not take an RLE (non-RLE=45%).

Support/belonging reasons are most common

Survey Outcomes & Retention (Pilot Cohort)

- First year retention is not statistically different between RLE (75.9% retained) and non-RLE (72.7%) [controlling for demographics], though RLE is slightly higher.
- For all students (RLE and non-RLE), *Sense of Belonging to UMaine* post-scores are positively related to first-year retention [controlling for demographics].



Student Interviews - Pilot Cohort

- Themes [positive, sense of belonging]
 - Support system (8 students)
 - Learning about university resources (5)
 - Acclimating to campus early (3)

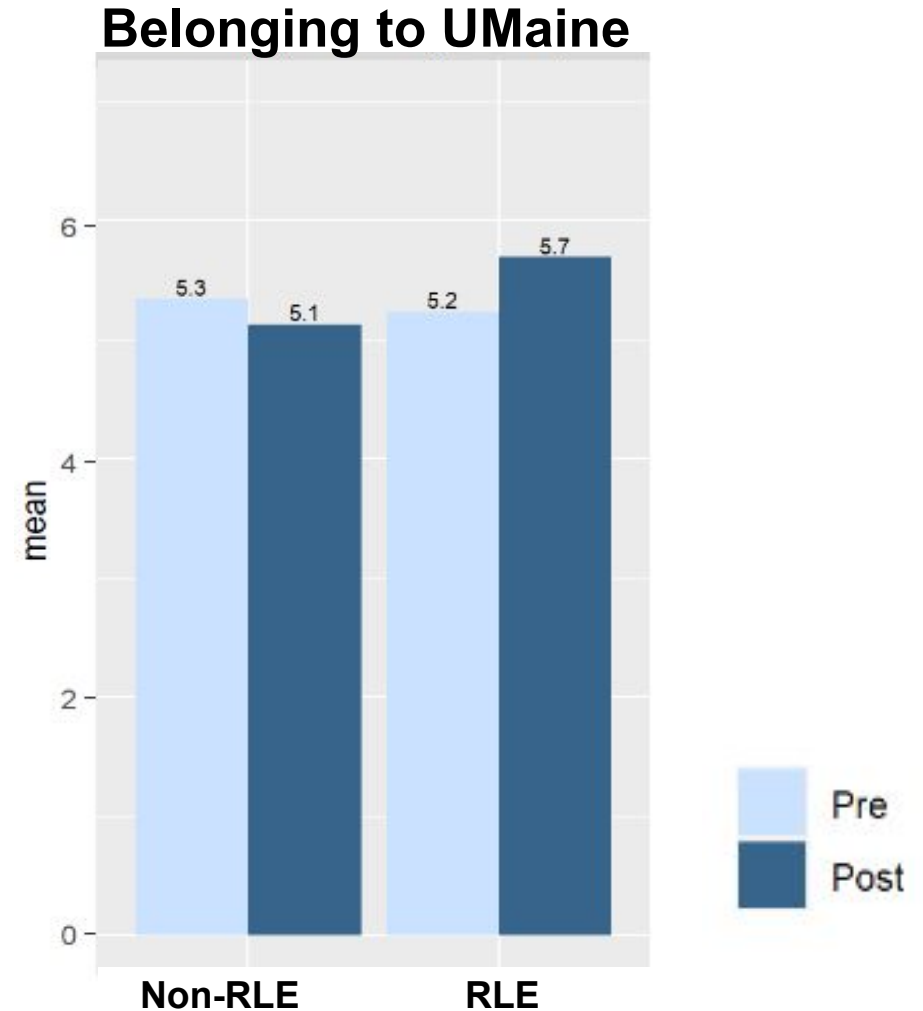
“I thought it was really cool that I got to be here a week early, and I didn't have to move in with everybody else because that would've caused, you know, panic and anxiety”

“...I would say closest friends, almost all of them are from the RLE except for like a few...”

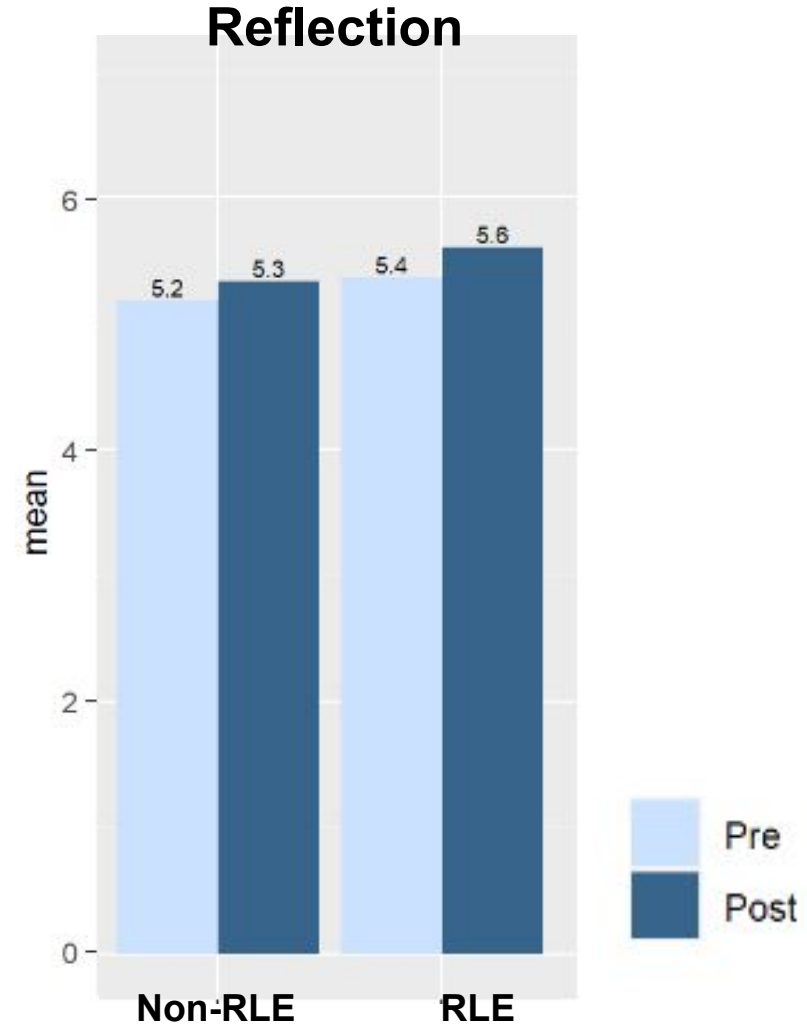
“I have a goal in mind ... and the RLE showed me okay, you have these tools...”

Preliminary Outcomes: Fall 2022 at UMaine

- *Sense of Belonging to UMaine:*
 - RLE students scored significantly higher on the post survey as compared to non-RLE students [controlling for pre-score, sex, HS GPA, First-gen, Pell, and course].



- *Reflection:*
 - RLE students scored significantly higher on the post survey as compared to non-RLE students [controlling for pre-score, sex, HS GPA, First-gen, Pell, and course].
- Faculty reported using reflection in RLEs more often than in other courses:
 - Student reflection on effective college/study strategies (81% of faculty used in RLE; only 26% used in other classes)
 - Student reflection on research/exploration process (97% vs. 45%)



Interviews - Fall 2022 Cohort

- Currently conducting interviews focused on *how* and *why* RLEs impact sense of belonging.
- Sample: Students who increased on belonging from pre-post, and others who decreased.



Future Directions: Analyses

- Are RLEs particularly beneficial for marginalized or underrepresented groups of students (e.g., first-generation students)?
- Which RLE course strategies are most effective at increasing student outcomes (e.g., field work, reflection)?
- Considering how to account for experiential learning that students get OUTSIDE of RLEs.
- Evaluating program impact with controls for opt-in effects



Future Directions

- Addressing RLE participation, RLE participants are disproportionately lower retention risk
- Refining the RLEs based on assessment
- Growing initiative at smaller, rural campuses



Thank you!
Questions?

Acknowledgements:
Alfond Foundation

