

10-23-2020

Model for Building Diversity and Fostering Research Collaboration between Faculty and Students in an Online Environment

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Luthi, K. (2020). Model for Building Diversity and Fostering Research Collaboration between Faculty and Students in an Online Environment. , (). Retrieved from <https://commons.erau.edu/publication/1936>

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Model for Building Diversity and Fostering Research Collaboration between Faculty and Students in an Online Environment

Florida Undergraduate Research Association Statewide Symposium

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College of Aeronautics



October 23, 2020



Discussion Agenda

- ❖ Introductions
- ❖ Research Scholars Program- Support for Online Learners
- ❖ Strategies and Best Practices to Engage a Diverse Group of Students
- ❖ Systems of Support
- ❖ Open Discussion



Overview of Research Scholars

- ❖ Academic achievements
- ❖ Research experiences
- ❖ Service within the scientific community
- ❖ Personal stories





Success Indicators

Embry-Riddle Aeronautical University Research Scholar

Award

certificate of completion

recognition at 2+ events and on website

pin to be worn with graduation regalia

1+ semester of supervised research

2 presentations (oral/poster) of original research at conference or symposium (Discovery Day + external) *1 presentation for distance learners

Coursework or Training (2+ CHs specifically designed for Undergrad Research, independent study, research methods, capstone, or other approved course OR complete all modules in Virtual Learning Center)

* 4+ research skills workshops/2+ modules in OUR's Virtual Learning Center for distant learners

Submission of manuscript of original research

Letter of recommendation from research mentor

Requirements



Best practices to engage a diverse group of learners

- Build awareness of existing research opportunities
- Connect students to hands-on research experiences
- Use mentoring to build student interest in research
- Create activities and services focused on strengthening academic skills and orienting students to STEM fields (e.g. student support, academic enrichment, and research skill development)
- Provide course-based undergraduate research experiences
- Require a peer review process





Best practices to engage a diverse group of learners

- Share resources to help students make connections across institutions as some partner schools have extended opportunities to students attending other partner institutions.
- Provide institutional support and awareness on recognition of successful research
- Increase dialogue among faculty about effective teaching and learning strategies
- Share opportunities regarding research labs for undergraduate research as an integral part of the undergraduate
- Identify faculty advocates to build awareness on how research is an integral part of undergraduate experience and how institutions need to place a greater focus on affirming the equal opportunity clause.





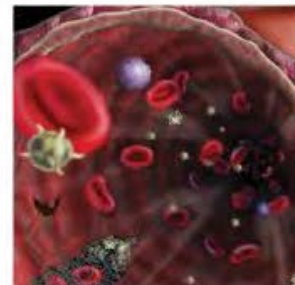
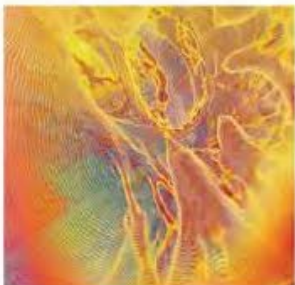
Findings from National Science Foundation Grant Programs

LSAMP finding: Eliminating Barriers for Student:

Students are more satisfied if they believed that their project was student (as opposed to faculty) led and that it advanced knowledge in the subject area.

An NSF-funded CUREnet finding:

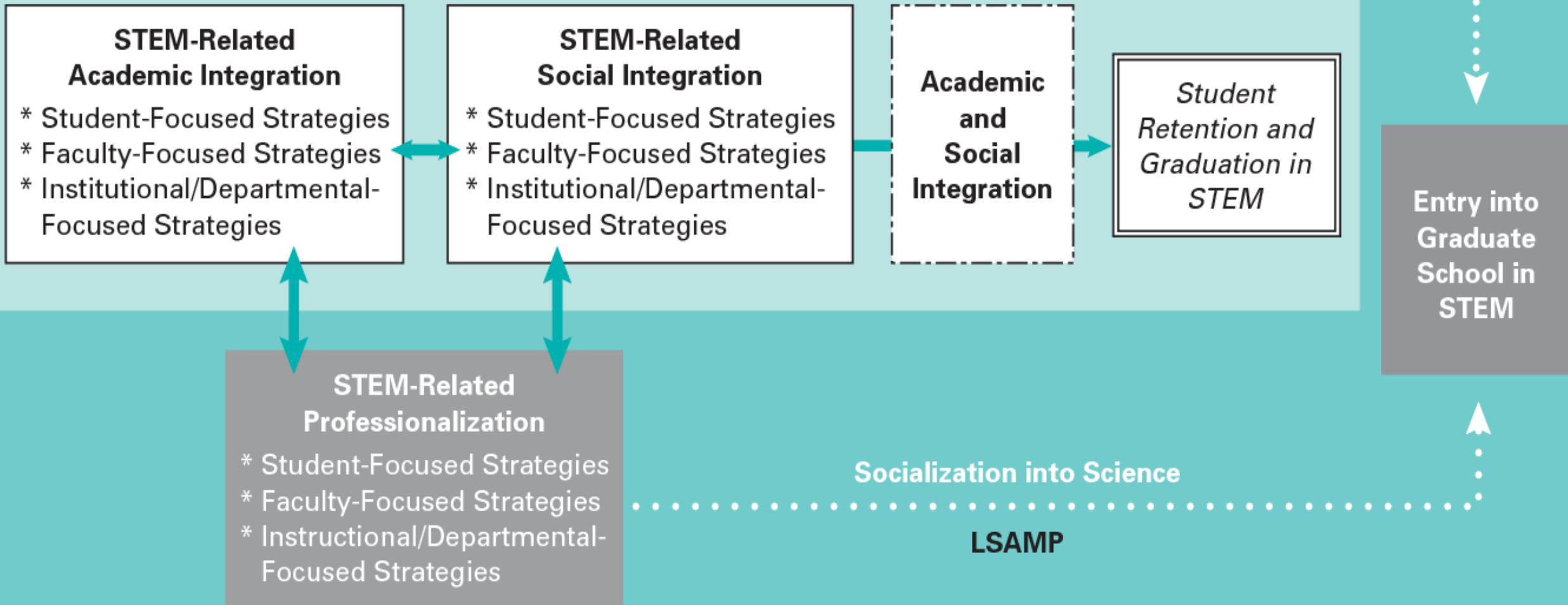
Societal biases that trickle down into hiring decisions for independent research experiences further impact the diversity of students entering research.





National Science Foundation: LSAMP High Impact Practices

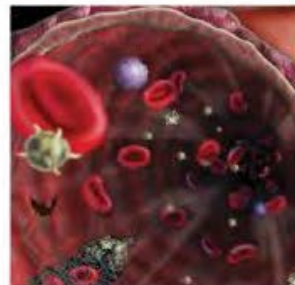
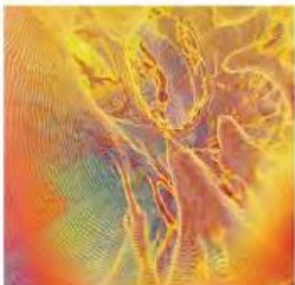
The Tinto Model of Student Retention





Systems of Support

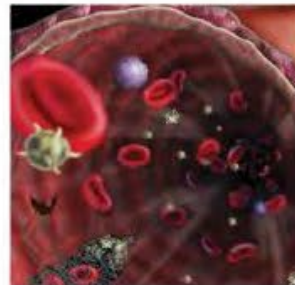
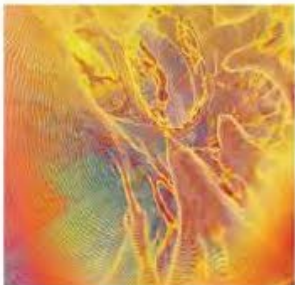
Focus/Activity	STEM Academic Integration	STEM Social Integration	STEM Professionalization
Student			
Summer Bridge	✓	✓	
Scholarship/Stipend	✓		
Peer Study Group	✓	✓	
Skills-Building Seminar	✓	✓	
Learning Centers	✓	✓	
Academic Advising	✓		
Summer Academic Enrichment	✓		
Tutoring	✓		
Research Experience	✓	✓	✓
Mentorships	✓	✓	✓
Conferences	✓		✓
Internships	✓	✓	✓
Career Awareness			✓
Faculty			
Workshop on Teaching			✓
Diversity Sensitivity Training			✓
Faculty Research Program			✓
Institutional/Departmental			
New Course Development			✓
Curriculum Material Sharing			✓
Distance Learning Courses			✓
Changes in Institutional/Departmental Policies and Practices			✓





Systems of Support

- Provide a platform of discovery
- Provide frequent communication and consistent messaging about research opportunities
- Encourage peer review and feedback
- Become a mentor
- Build awareness of successful research experiences and benefits of research engagement





Open Discussion and Questions?

Thank you.

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References

- Bangera, G., & Brownell, S.E. (2014). Course-based undergraduate research experiences can make scientific research more inclusive. *CBE-Life sciences Education*, 13(4), 602-606. <http://doi.org/10.1187/cbe.14-06-0099>
- Brewer, G., Dewhurst, A. M., & Doran, D. (2012). Undergraduate research projects: Practice and perceptions. *Psychology Learning & Teaching*, 11(2), 208-217.
- Council on Undergraduate Research. (2017). Fact sheet. Retrieved from http://www.cur.ircg/about_cur/fact_sheet/
- Eagan, M.K., Hurtado, S., Chang, M.J., Garcia, G. A., Herrera, F.A., & Garibay, J.C. (2013). Making a difference in science education. The impact of undergraduate research programs. *American Educational Research Journal*, 50, 683-713. <https://doi.org/10.3102/0002831213482038>
- Morrison, E. (2017). Undergraduate research: The barriers. Retrieved from <https://www.purude.edu/recourse/2017/03/09/undergraduate-research-opportunities-facing-the-student-overload/>
- Ortagus, J.C., & Stedrak, L.J. (2013). Online education and contingent faculty: An exploratory analysis of issues and challenges for higher education administrators. *Educational Considerations*, 40(3), 30-33.
- Rorive, V. M., & Brint, S. (2013). UCR undergraduate student participation in research. Riverside, CA: University of California Riverside. Retrieved from https://ueeval.ucr.edu/Ungraduate%20Research20Tracking20Report20March202013_final.pdf