

Holistic Mentoring in One Health Research to Engage Rural and Indigenous Students

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NIH Diversity Consortium

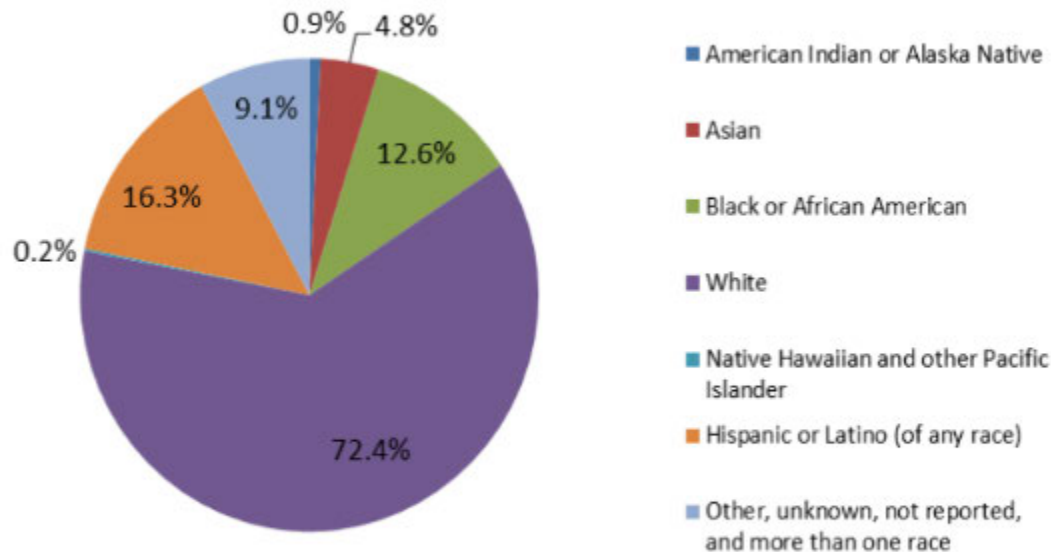
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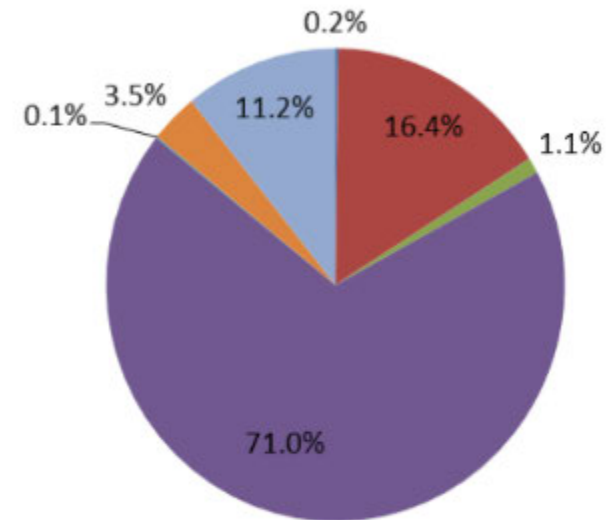
**DIVERSITY
PROGRAM
CONSORTIUM**
Supporting the future of research

Diversity in NIH funding

2010 U.S. Census*



2010 NIH Principal Investigators on RPGs*



2010 U.S. Census Bureau Report, <http://2010.census.gov/2010census/data/2010> (left)
NIH Principal Investigators on RPGs, NIH IMPAC II (right)

“American Indian and Alaskan Natives, did not have sufficient numbers of applicants or applications to allow for a statistically significant analysis.”

Our Approach

- Biomedical Learning and Student Training (BLaST) program
- Focus on rural and indigenous (Alaska Native) Students
- Mentored Research
- One Health
- Research Advising and Mentoring Professionals
- Supportive Community

Where is BLaST?



SUBSISTENCE is important in Alaska



Central Themes

- Diversification of the NIH-funded workforce
- Education pipeline
 - with multiple entry and exit points
- One Health
 - Subsistence Health
- Holistic Mentoring



Engage students from diverse backgrounds,
especially rural Alaskan and Alaska Native,
in biomedical research

One Health paradigm as an
approach to biomedical research

undergraduate
projects

Graduate Mentoring
Research
Assistantship

faculty pilot projects

RAMPs

RELEVANT

&

MENTORED

UNDERGRADUATE RESEARCH EXPERIENCES

embedded in CURRICULUM

supported by LEARNING COMMUNITY

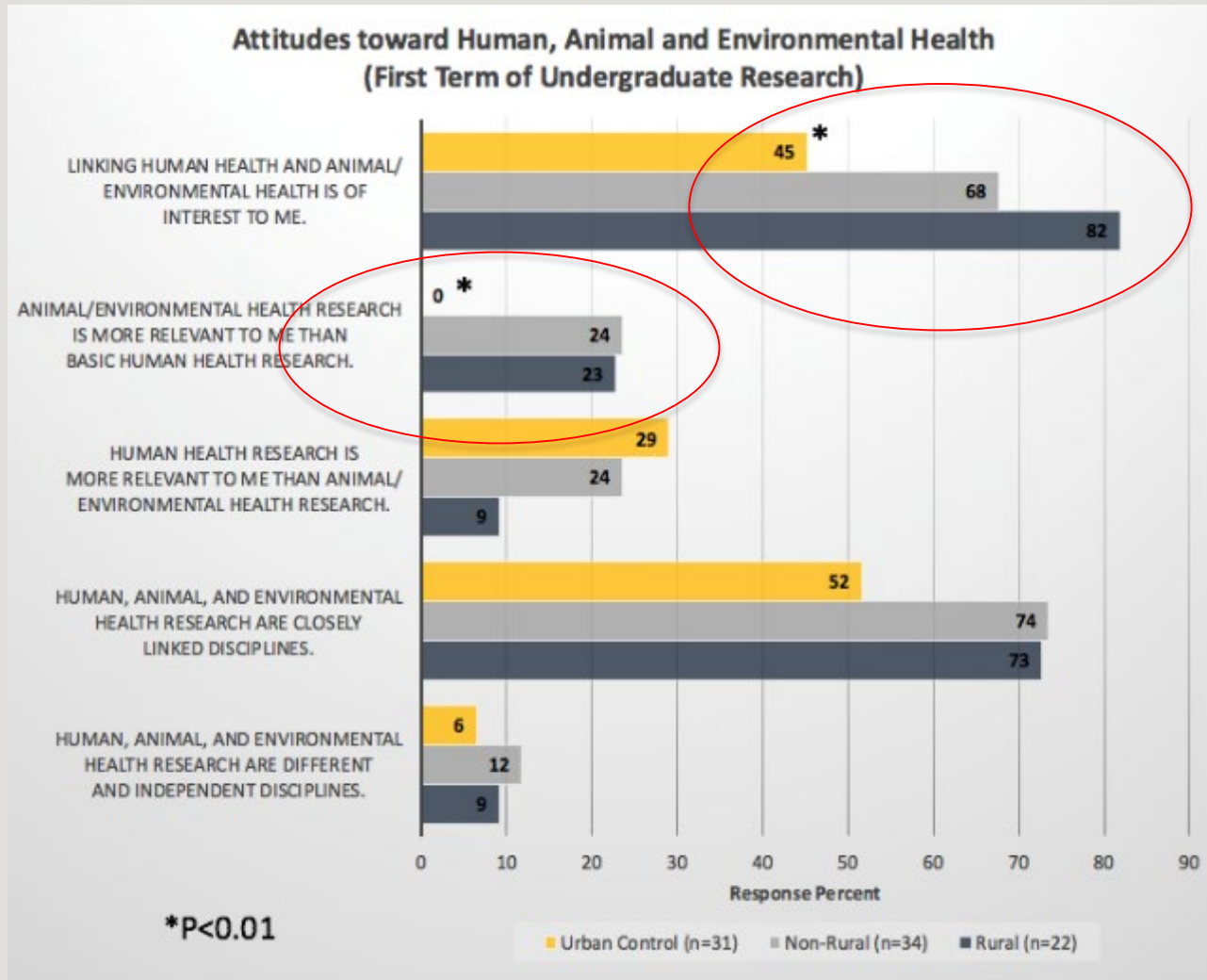
curriculum
development

faculty
development

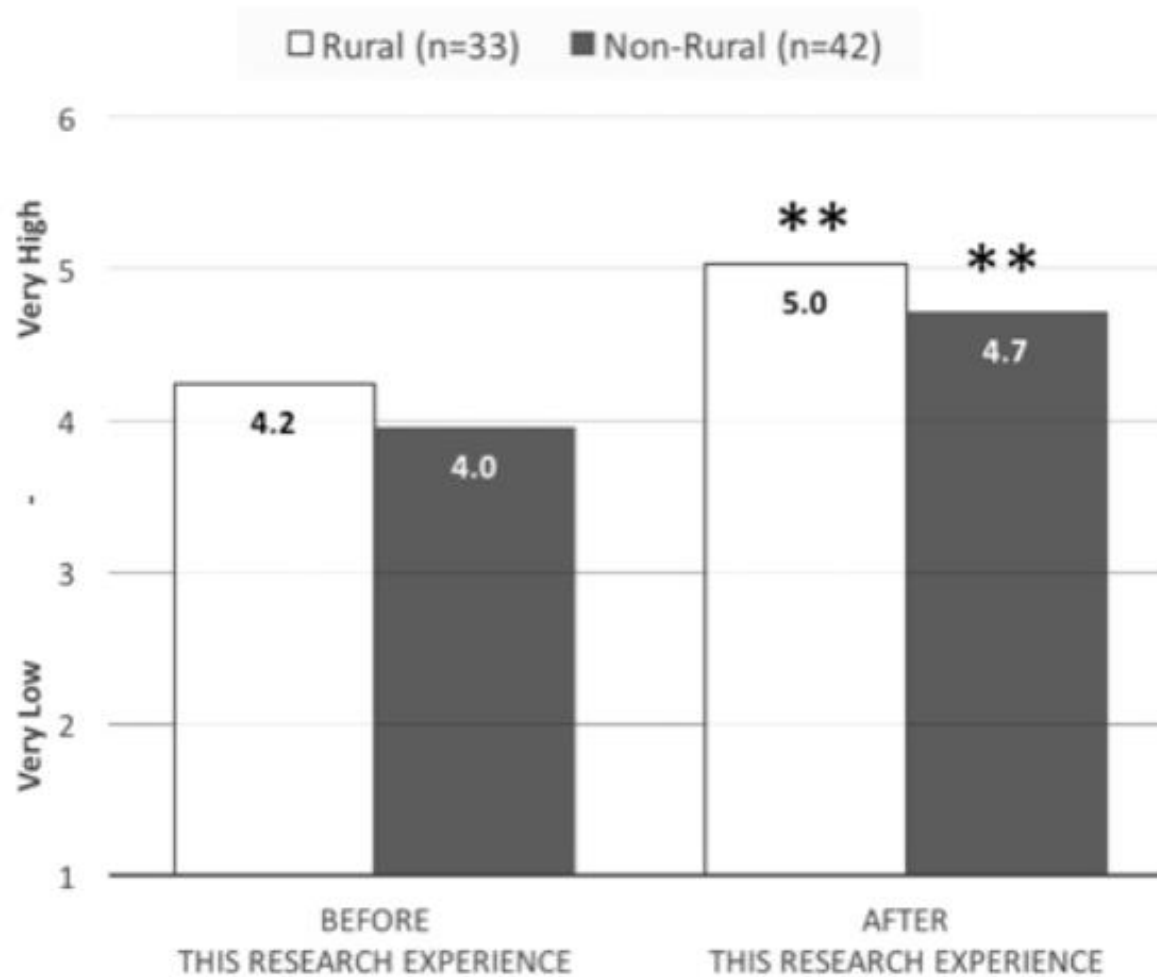
RAMPs

BLaST Scholars
tutoring, advising, workshops

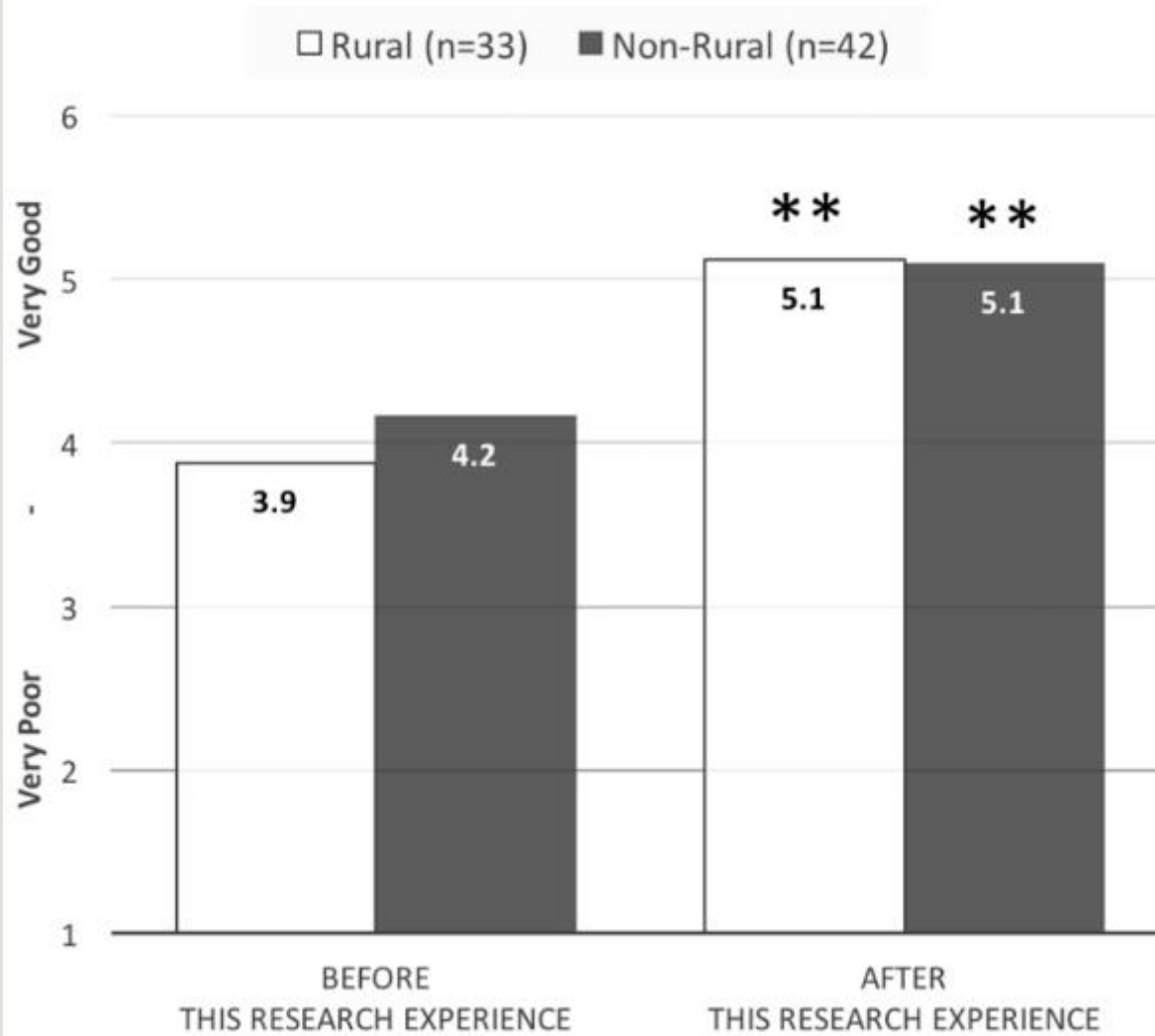
R vs NR: One Health - Recognized and of Interest



b) My level of interest in human health-related research

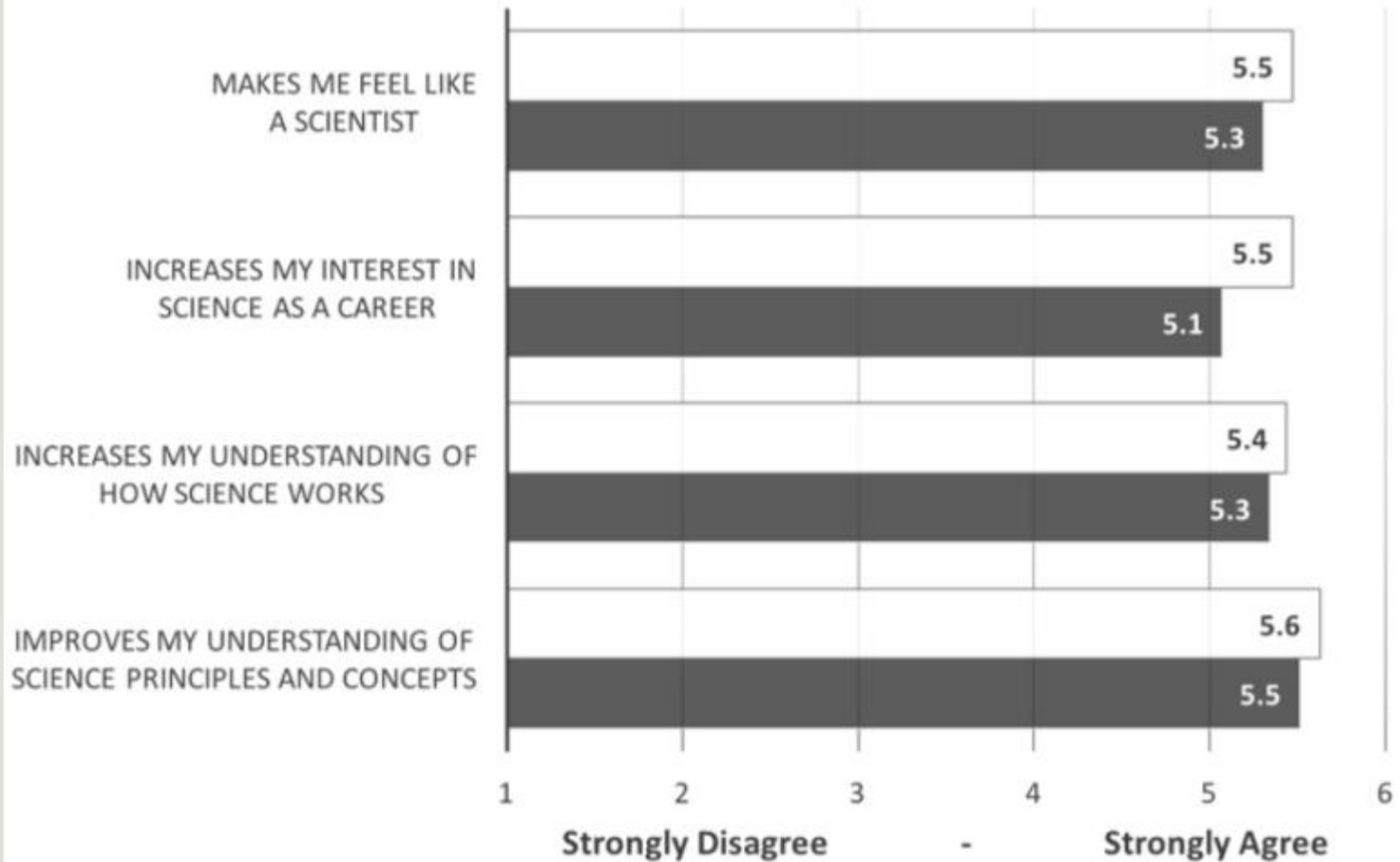


My understanding of how science is done



In general, participation in undergraduate research...

□ Rural (n=32) ■ Non-Rural (n=42)



Summary

- Linking human, animal and environmental health (One Health) is of interest to Alaska students
- Undergraduate research increases student interest in science careers
- Students science self-efficacy is increased by undergraduate research

Student participant:

“I come from a small village, where ‘research’, like only old people do that. Me doing it, is kinda weird. That makes me nervous. It makes me feel like I’m incapable, but because of BLaST I’m capable.”

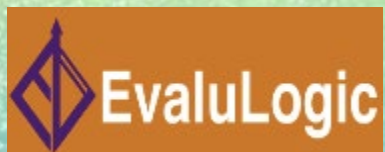


Research, Advising and Mentoring Professionals: A Holistic Approach to Student Support

A. Reynolds , L. Gildehaus, P. Cotter, S. Buck, M. Sousa, K. Hueffer,



**DIVERSITY
PROGRAM
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UAF

- Alaska Native students
- 2013- 21% of incoming students
9.7% of graduating students
- 2018- 13% of graduating students in 2018



Barriers to student success

- Balance work/life
- Personal commitments
- Academic preparation
- Cultural and geographic challenges





**RESEARCH, ADVISING AND
MENTORING PROFESSIONALS**



Research, Advising and Mentoring Professionals

- Proposal/scientific writing
- Experimental/project design
- Laboratory and research techniques
- Formal scientific ethics training
- Oral and written presentations
- Academic advising
- Development of IDPs
- Exploration of career goals
- Comprehensive, holistic mentoring
- Psychosocial support
- Work/life balance

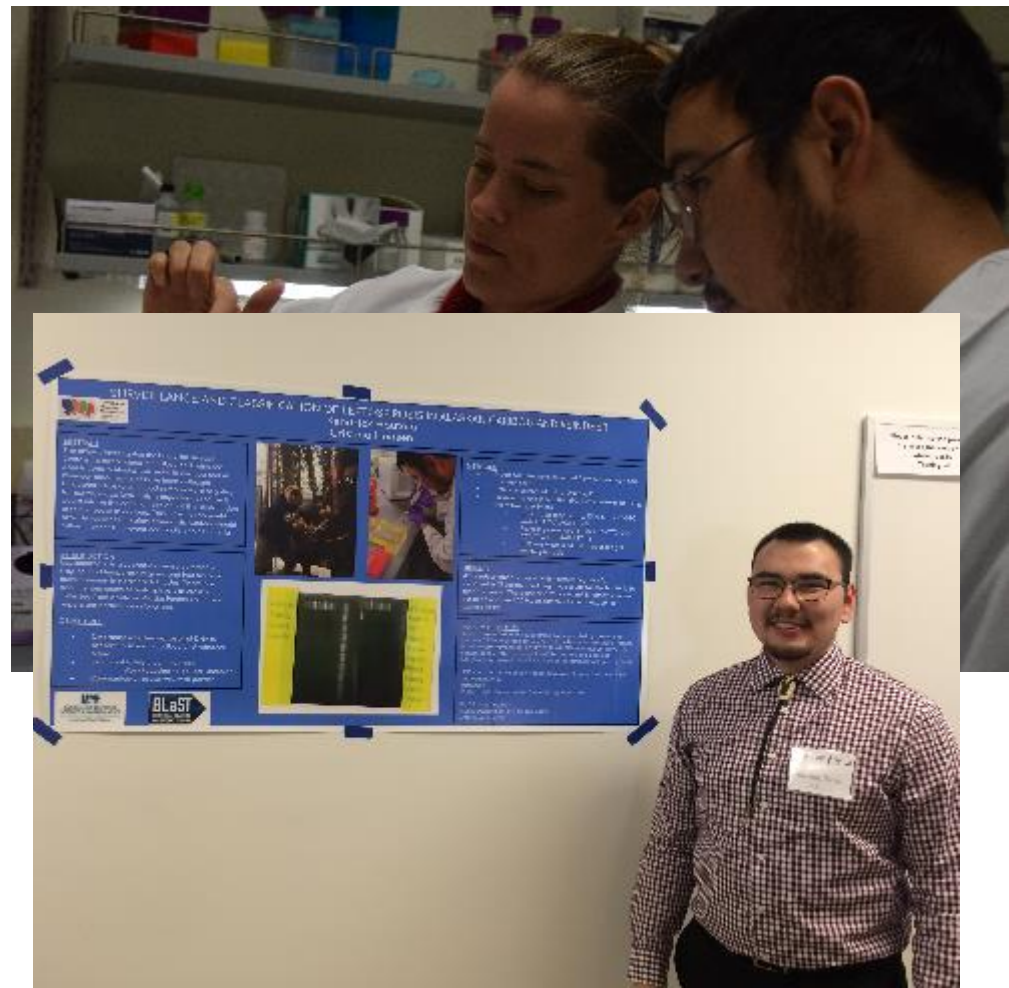


STUDENT RESEARCHERS



Student support - Research

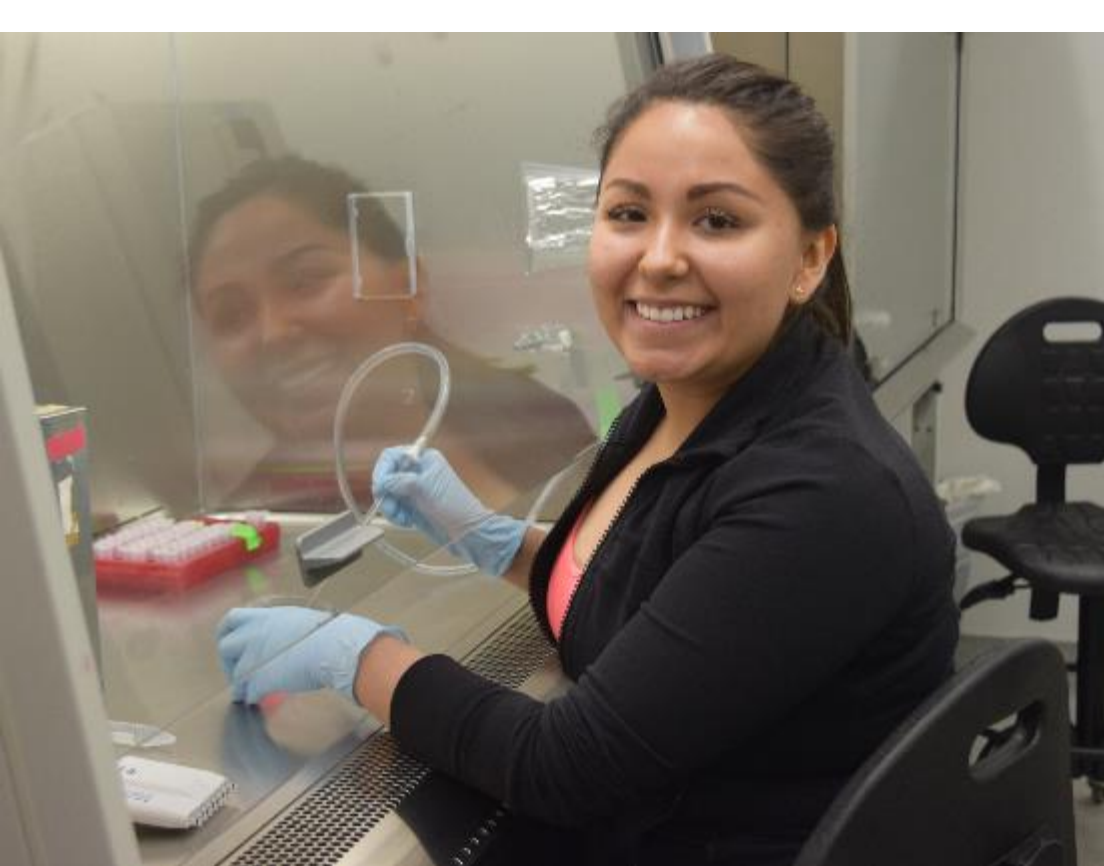
- Proposal/scientific writing
- Experimental/project design
- Laboratory and research techniques
- Formal scientific ethics training
- Oral and written presentations





Undergraduate student Engagement in research









ACADEMIC SUPPORT



Student support - academic

- Academic advising
- Development of IDPs
- Exploration of career goals
- Tutoring





PSYCHOSOCIAL SUPPORT



Student support - psychosocial

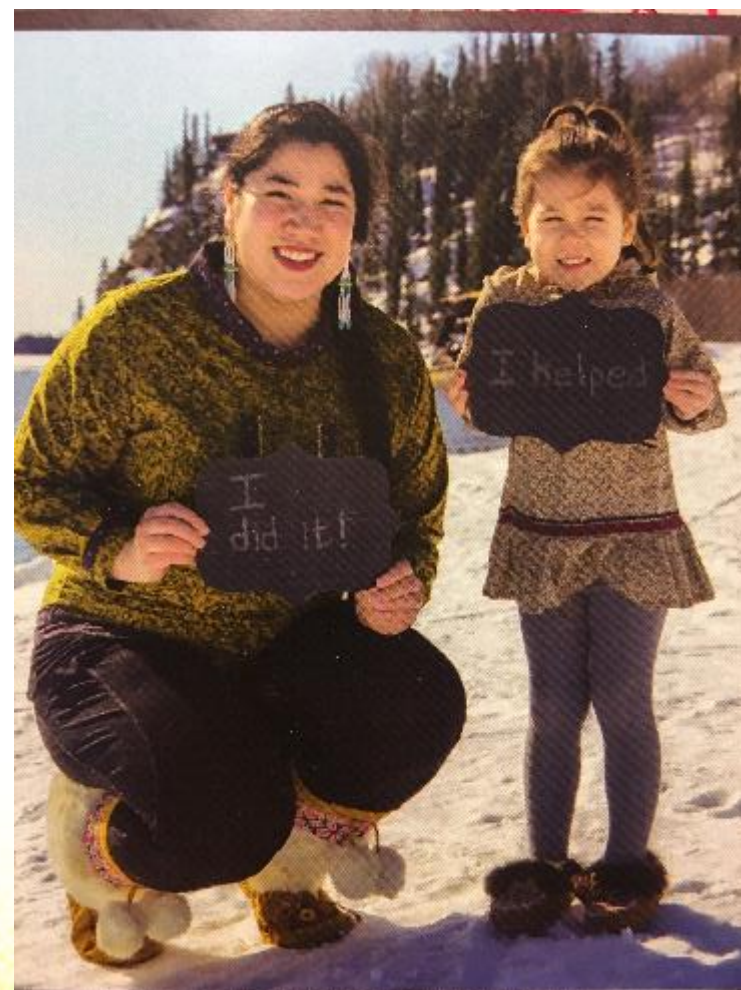
- Comprehensive, holistic mentoring
- Work/life balance
- Community



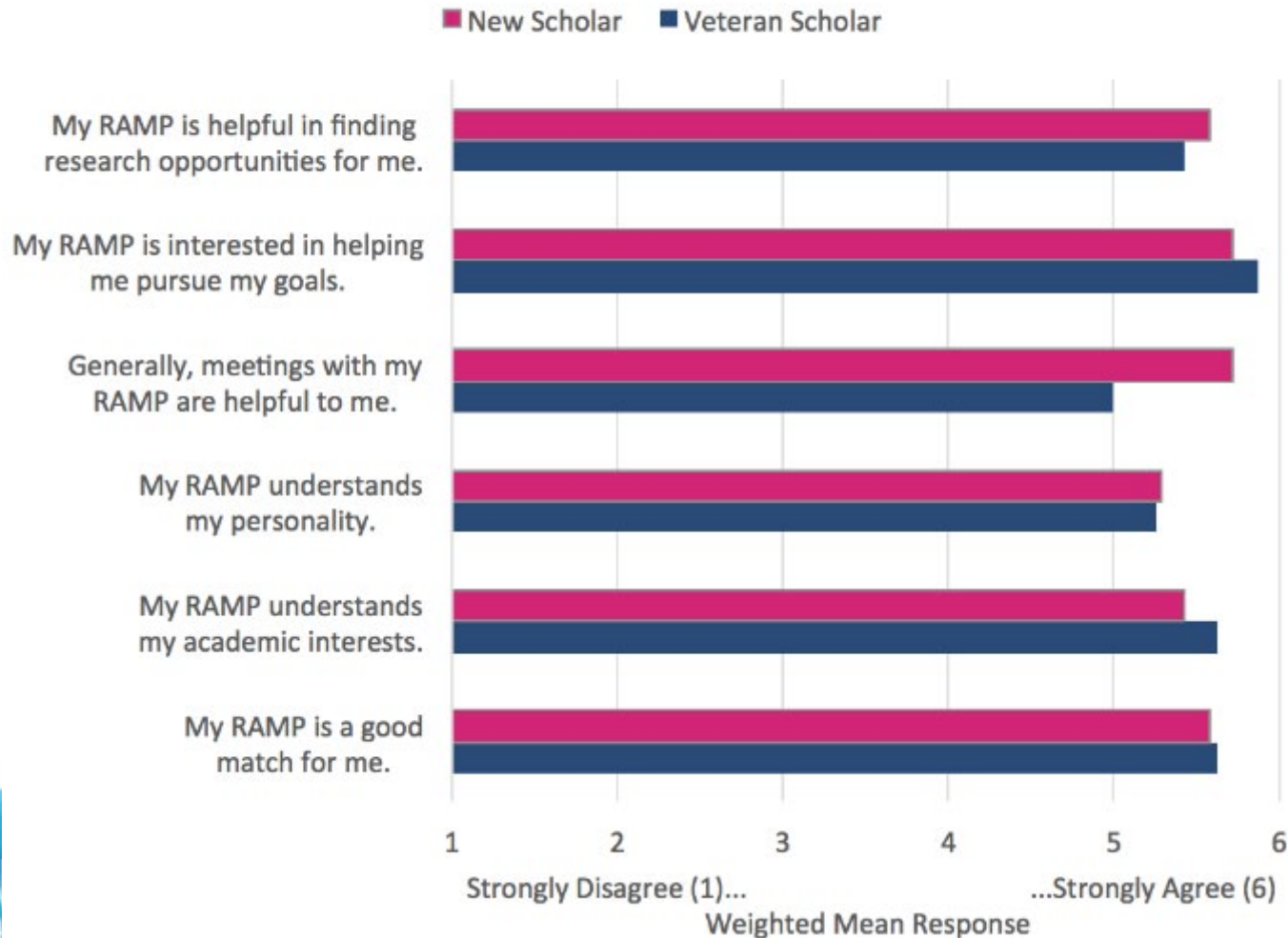


COMMUNITY





**For the following statements regarding RAMPs, please
select your level of agreement from the scale
provided.**



UNIVERSITY OF
ALASKA
FAIRBANKS

I consider my RAMP...

■ New Scholar ■ Veteran Scholar

...someone I can talk to about issues other than those related to school/research.

...a good source for academic advising.

...a role model in science.

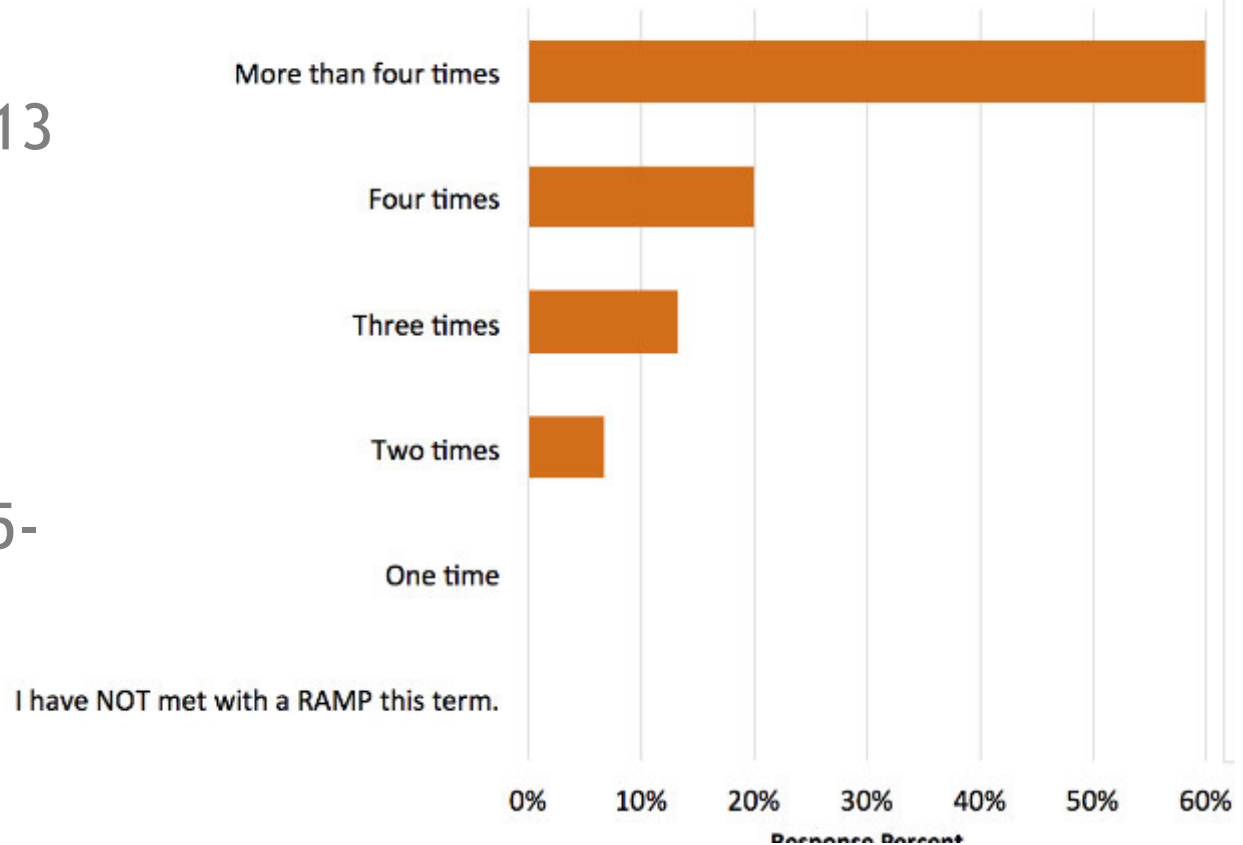
...a good resource for understanding college life.





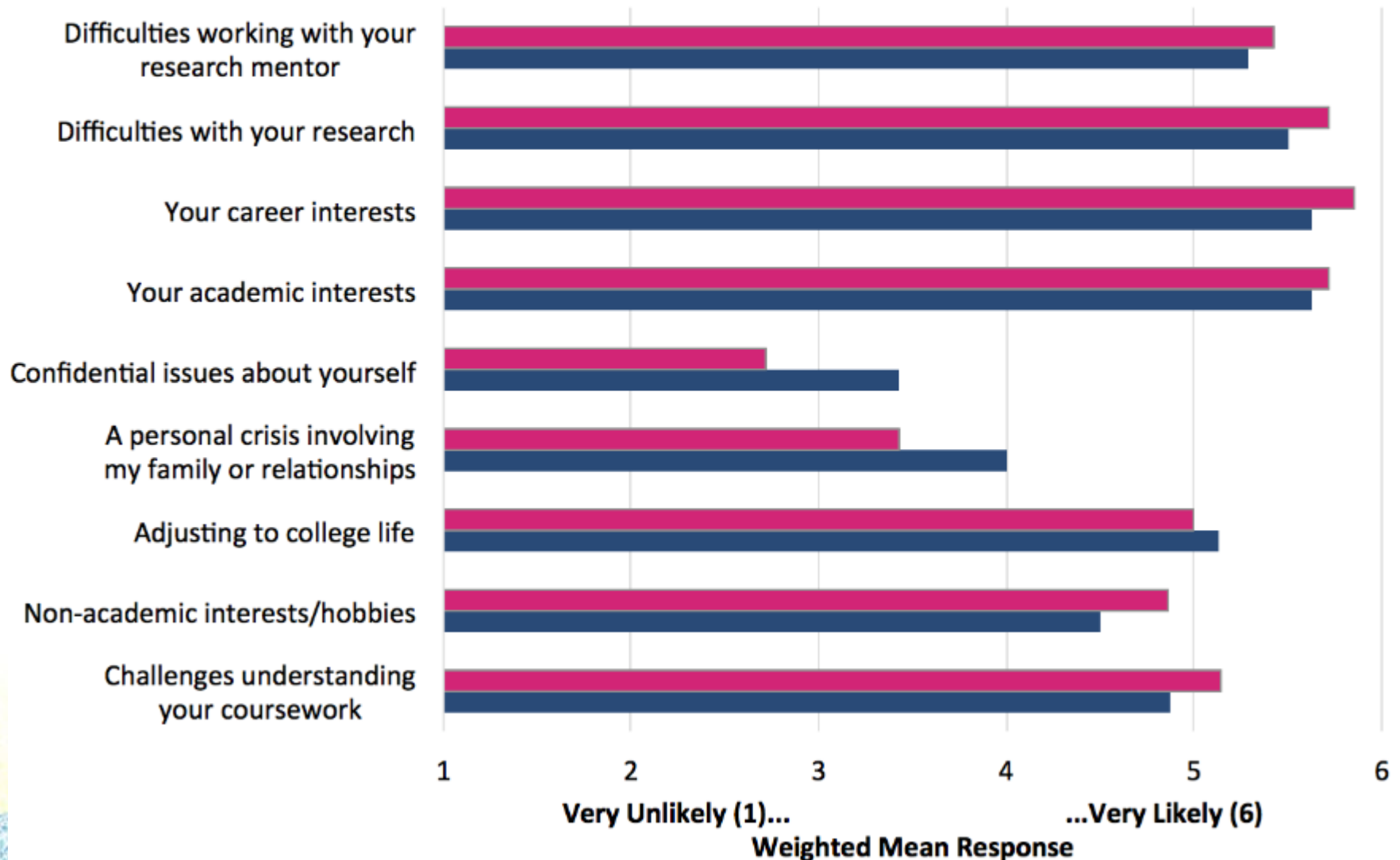
- Avg meetings - 13 times per AY (range 4-29 times)
- Avg time - 11.7 hours (range 3.5-26 hours)

How many times have you met with a RAMP this term (Fall 2017) to discuss school or research-related topics?



**If you needed/wanted to discuss any of the topics below with someone,
how likely would you choose to discuss them with your RAMP?**

■ New Scholar ■ Veteran Scholar



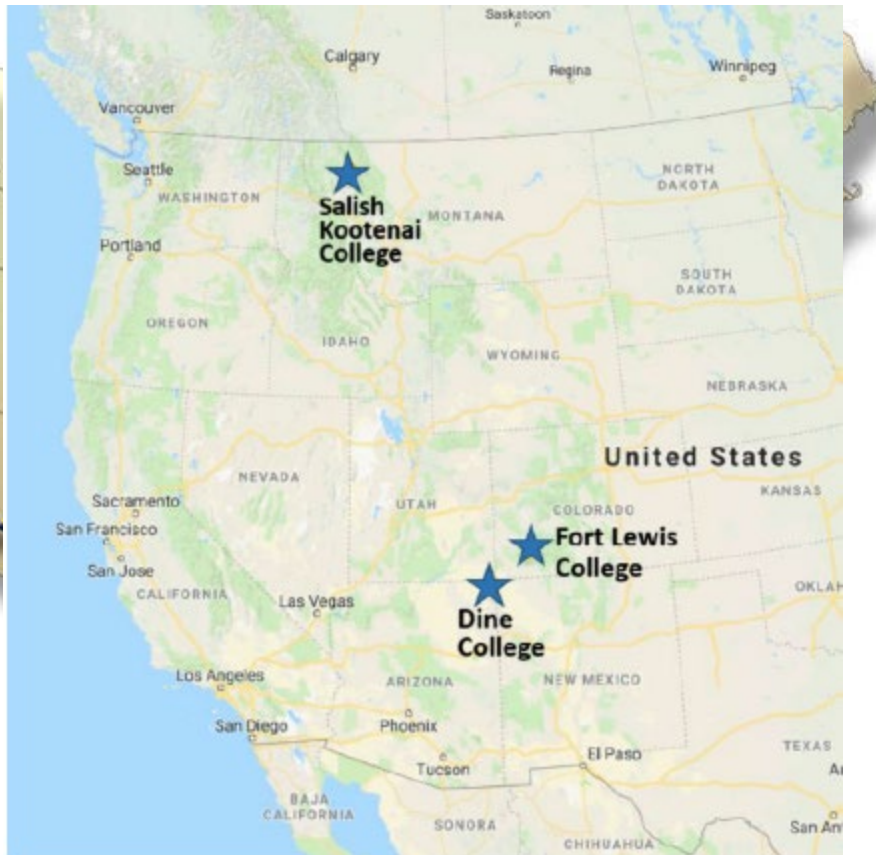


DISSEMINATION



BLaST Program

- Role with faculty, UREs, partner institutions
- RAMP now in SE Alaska -





Publication

Innovative Higher Education (2019) 44:119–131
<https://doi.org/10.1007/s10755-018-9452-0>



CrossMark

The Research, Advising, and Mentoring Professional: a Unique Approach to Supporting Underrepresented Students in Biomedical Research

Lori Gildehaus, et al. *[full author details at the end of the article]*

Published online: 2 January 2019
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SUSTAINABILITY



Research, Advising and Mentoring Professionals

- New Culture in Research
 - Enhanced student success
 - Faculty support
 - Bridges gaps in current systems
- Grant support
- Institutional Buy-in



- *“RAMPs help navigate the system of science because it can be complicated. Just like giving suggestions about how you can go about developing yourself as a researcher, especially as an undergrad. That can be pretty daunting for people. Some people don’t even understand the importance of getting experience that’s not just in class. RAMPs really help with that.”*
- *“Kinda like a parent but not just guiding me through life but guiding me through research.”*
- *“They build a personal relationship with you, too. I’ve been with the same RAMP for, this is my second year with her, and so she helps me fit everything, .. she is helping me personalize my research experience“*



"The BLaST community is like a family. It didn't just provide us with monetary solitude, it provided us with another family that makes us engage more in research. It makes us more excited."