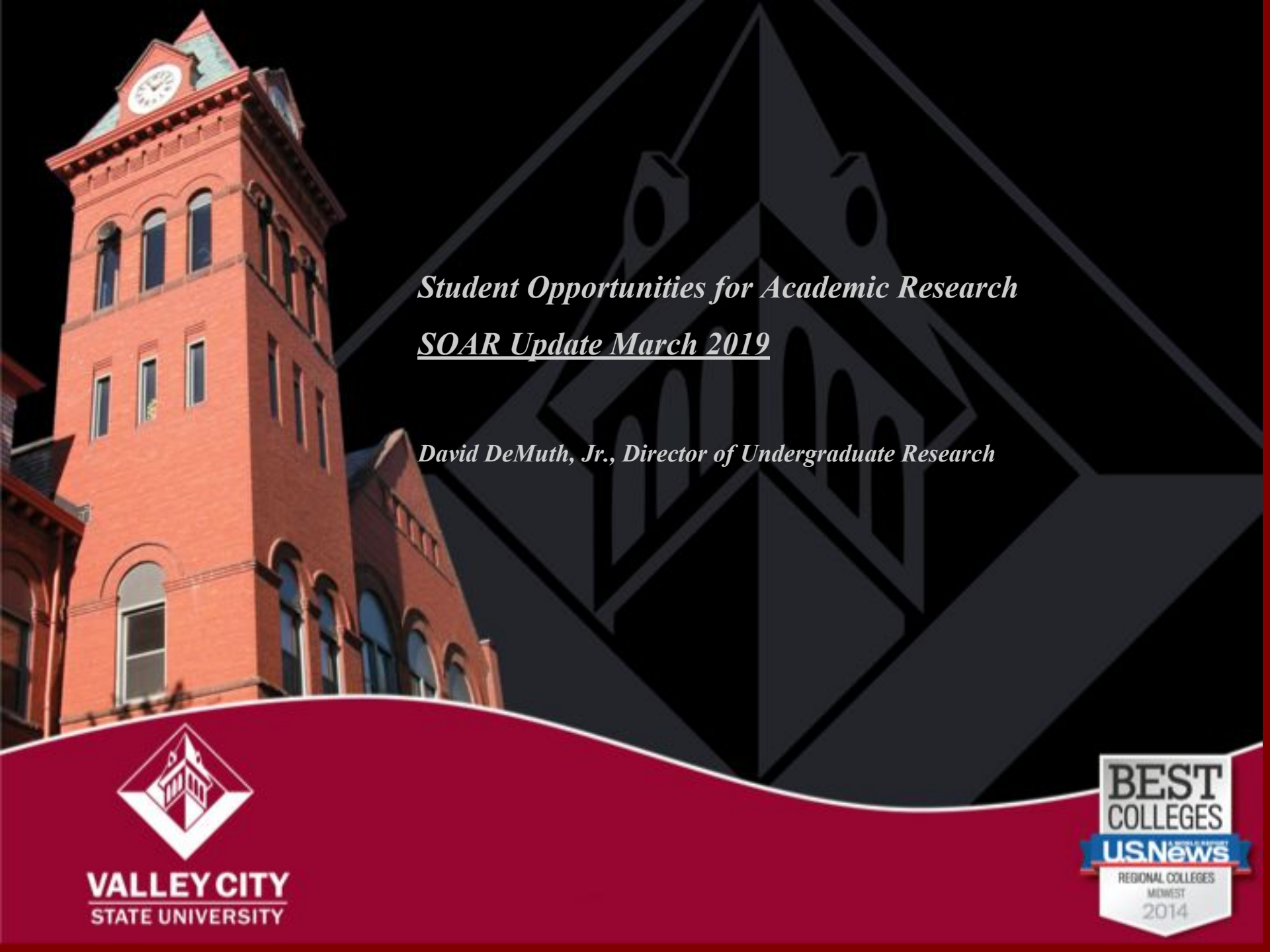

# *Student Opportunities for Academic Research*

## *SOAR Update March 2019*

*David DeMuth, Jr., Director of Undergraduate Research*

VALLEY CITY STATE UNIVERSITY

BEST COLLEGES U.S.News REGIONAL COLLEGES MIDWEST 2014

**Mission:** The Student Opportunities for Academic Research (SOAR) program will provide opportunities for innovative collaboration with faculty and staff in ethical research, scholarship, and creative activities that prepare undergraduate students to be lifelong learners in their professions and communities.

**Vision:** The SOAR program will facilitate and showcase innovative undergraduate student research, scholarship, and creative activities that promote lifelong learning through advanced research and ethical service.

## SOAR: Mission & Vision

Goals:

- Increase undergraduate student interest in research, scholarship, and creative activities.
- Develop undergraduate student skills in designing and conducting ethical research, scholarship, and creative activities.
- Engage faculty, staff, students, and the community in interdisciplinary research, scholarship, and creative activities.
- Showcase undergraduate student research, scholarship, and creative activities.
- Increase the number of students participating in research through graduate programs.

Student Learning Outcomes:

- Students will understand the processes for effective development of research, scholarship, and creative activities.
- Students will ethically design and conduct research, scholarship, or creative activities in accordance with appropriate professional and community guidelines.
- Students will present their research, scholarship, or creative activities to a professional or community audience.
- Students will reflect upon how they will use experience with undergraduate research, scholarship, or creative activities to enhance their professions or communities.

# SOAR: Goals & Learner Outcomes

**SOAR Advisory Committee**

The advisory committee meets regularly throughout the school year to ensure program value and significance. Feel free to reach out to any to learn more about the SOAR program.

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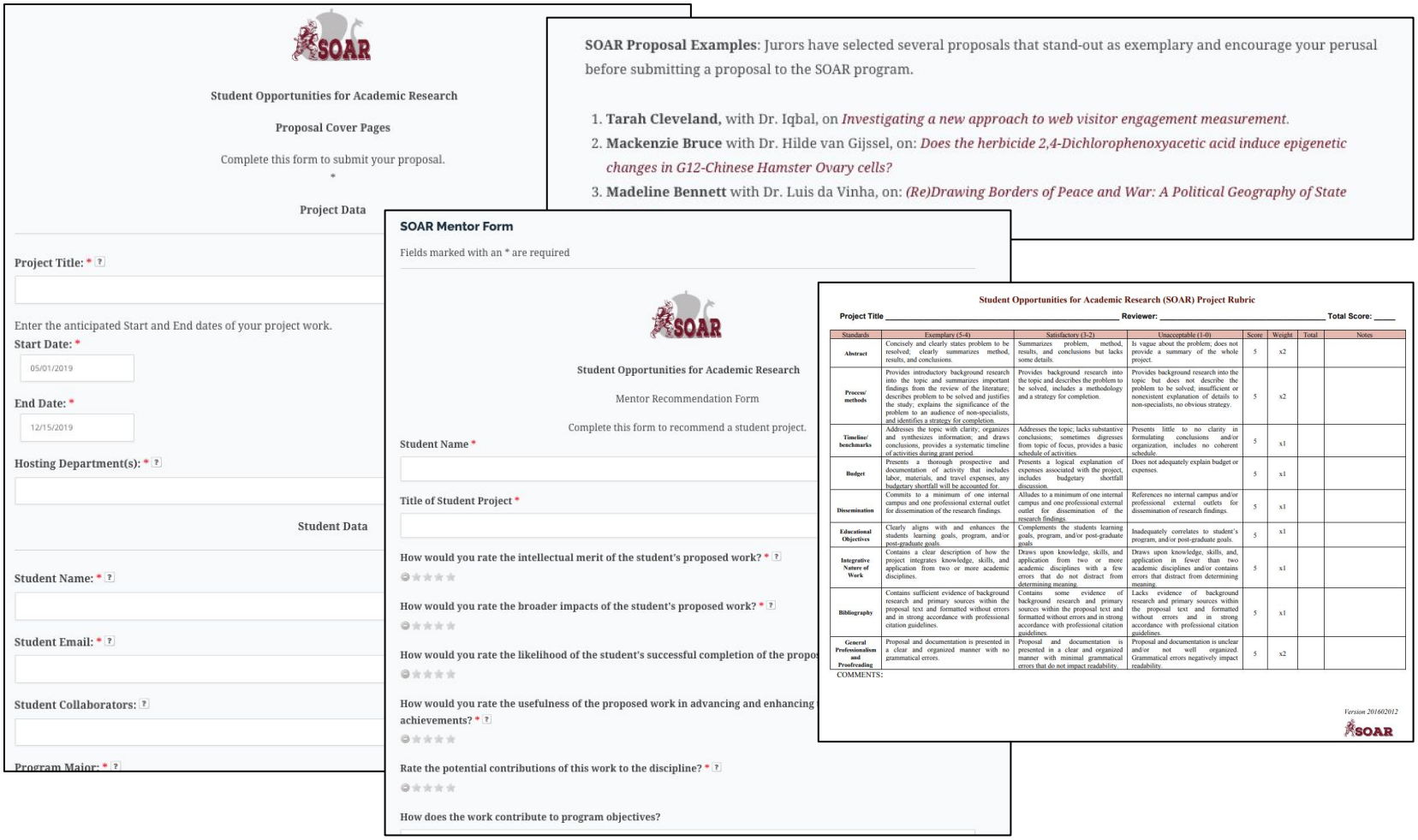
# SOAR: Web Portal


# SOAR: Web Portal




# SOAR: Application Framework

A total of 9 academic departments have hosted 31 distinct undergraduate research projects for 30 students and 18 faculty mentors as a part of the VCSU SOAR program since its inaugural year in 2014. Read about their projects below.

− Abstracts for funded SOAR projects follow:

Select + to review abstracts for each student project.

+ **Tarah Cleveland,** with Dr. Iqbal, on *Investigating a new*

+ **Logan Olesen,** with Dr. Kilgore, on *The use of sand frac archeological sight in Grand Portage, Minnesota*

+ **Maxwell Kollar,** with Dr. van Gjissel, on *Creating a Bac*

+ **Eric Schauer,** with Dr. Ketterling, on *Engineering an Au*

+ **Monika Browne,** with Professor Dina Petherbridge, o

+ **Kaylee Johnson and Cassy Gilbertson,** with Professo

+ **Niklas Ernst,** with Dr. Luis da Vinha, on: *The Unfinished Campaigns*

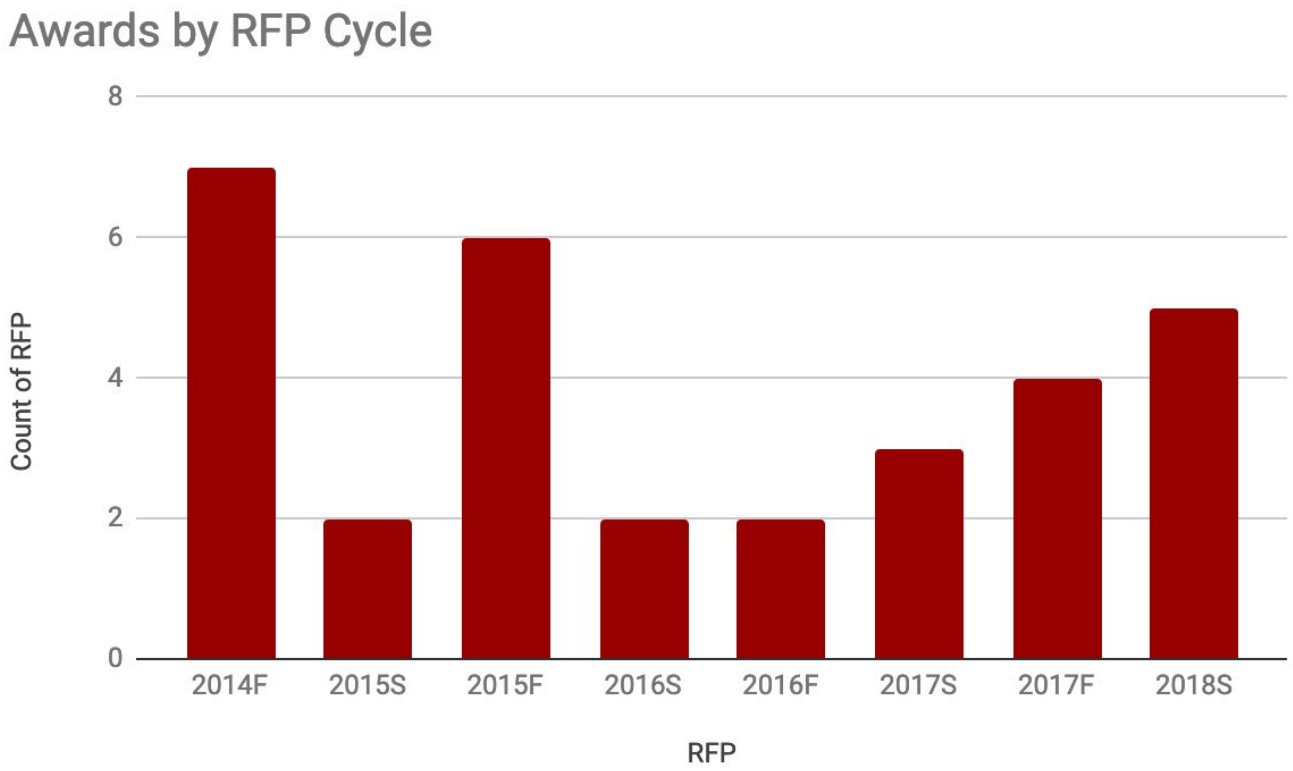
+ **Justin Tangen,** with Dr. Andre Delorme, on: *Using Side*

+ **Tanner Hovland,** with Dr. Hilde van Gijssel, on: *Are the Multigenerational Effects of Chlorophenoxy Herbicides on Development and Growth of Drosophila melanogaster Inherited Through the Male or Female Germ Line*

+ **DaveMarth Nagbe,** with Dr. Samuel Keasler, on: *Analyzing mercury biosensors using computational modeling techniques*

| Index | RFP | Host | Student | Mentor | Project |
|---|---|---|---|---|---|
| 1 | 2014F | CSSE | Tarah Cleveland | Razib Iqbal | Investigating a new approach to web visitor engagement measurement |
| 2 | 2014F | Art | Logan Olesen | Susan Kilgore | The use of sand fraction lithology analysis to differentiate sediment layers at an archeological sight in Grand Portage, Minnesota |
| 3 | 2014F | Art | Kaylee Johnson | Karri Dieken | 3D Printing K-12 Project Curriculum |
| 4 | 2014F | Art | Cassy Gilbertson | Karri Dieken | 3D Printing K-12 Project Curriculum |
| 5 | 2014F | Theatre | Monika Browne | Dina Avala-Petherbridge | Entransed: The Making of Transnational Woman |
| 6 | 2014F | Science | Maxwell Kollar | Hilde van Gijseel | Creating a Bacterial Mercury Sesnor using Synthetic Biology |
| 7 | 2014F | Science | Eric Schauer | Gary Ketterling | Engineering an Autonomous Ecosystem for Use in Science Classroom |
| 8 | 2015S | Social Science | Niklas Ernst | Luis da Vinha | The Unfinished Presidencies: Why Incumbent Presidents Loose Their Reelection Campaigns. |
| 9 | 2015S | Science | Justin Tangen | Andre Delorme | Using Side Scanning Sonar to Detect Mussel Beds in North Dakota Rivers |
| 10 | 2015F | CSSE | Jordan Bushaw | Susan Pfeifer | The Effects of Motion Sickness in Virtual Reality Environments |
| 11 | 2015F | CSSE | Baylee Swenson | Susan Pfeifer | The Effects of Motion Sickness in Virtual Reality Environments |
| 12 | 2015F | Science | Tanner Hovland | Hilde van Gijseel | Are the Multigenerational Effects of Chlorophenoxy Herbicides on Development and Growth of Drosophila melanogaster Inherited Through the Male or Femail Germ Line |
| 13 | 2015F | Science | DaveMarth Nagbe | Samuel Keasler | Analyzing mercury biosensors using computational modeling techniques |
| 14 | 2015F | CSSE | Dallas Peterson | Curt Hill | The Internet of Pi |
| 15 | 2015F | Music | Andrei Pilipetskii | Nicholaus Meyers | Creating a Virtual Ensemble for Online Learners |
| 16 | 2016S | Science | Mackenzie Bruce | Hilde van Gijseel | Does the herbicise 2,4-Dichlorophenoxyacetic acid induce epigenetic changes in G12-Chinese Hamster Ovary cells? |
| 17 | 2016S | Science | Alexis Getzlaff | Casey Williams | Pickled Fish Project |
| 18 | 2016F | History | Miles Libak | Anthony Dutton | Unintended and Intended Cosequences: U.S. Government Policy towards Native Americans |
| 19 | 2016F | Social Science | Madeline Bennet | Luis da Vinha | (Re)Drawing Borders of Peace and War: A Political Geography of State Partition |
| 20 | 2017S | Psychology | Callie Smith | Kathryn Woehl | The Impact of Personal Experience in the Effects of an Emphathy-Building Simulation |
| 21 | 2017S | Psychology | Tanner Clark | Kathryn Woehl | Spirituality and Relegiosity in University Students |
| 22 | 2017S | Communication | Deborah Halley | Gregory Brister | The Study of Social Class in Dracula, The Picture of Dorian Gray, and Hard Times |
| 23 | 2017F | Social Science | Daniel Machado | Luis da Vinha | Student Perceptions of DACA in North Dakota |
| 24 | 2017F | Social Science | Niklas Ernst | Luis da Vinha | Government and Academia - A Comparative Analysis of Academics' Political Participation Through the Electoral Process |
| 25 | 2017F | Science | Jayme Menard | Andre Delorme | Evaluation of Mussel Age and Growth Rate Post-Devils Lake Outlets |
| 26 | 2017F | Science | Ryan Schaner | Lauren Dennhardt | Climate Change Model Analyses on North Dakota's Shifting Prairie Ecosystems |
| 27 | 2018S | History | Sarah Zacher | Steven King | Uncovering the Silent Voices of the Past: A History of the Fort Totten Boarding School |
| 28 | 2018S | Science | Benjamin Kietzman | Hilde van Gijseel | Developing and testing lead and mercury biosensors; a synthetic biology approach |
| 29 | 2018S | Science | Ethan Rasset | Casey Williams | Feeding Habits of Smallmouth Bass in the Sheyenne River |
| 30 | 2018S | Science | Ellen Margaret Anderson | Casey Williams | Percent Occurrence of Historical Sample Size of Select Stream Fish of North Dakota |
| 31 | 2018S | Science | Cooper Folmer | Casey Williams | Evaluation of Age and Growth Rates of Smallmouth Bass, Pre and Post Construction of East End Devils Lake Outlet |
| Counts: | 8 | 9 | 30 | 18 | |

# SOAR: Awards Database

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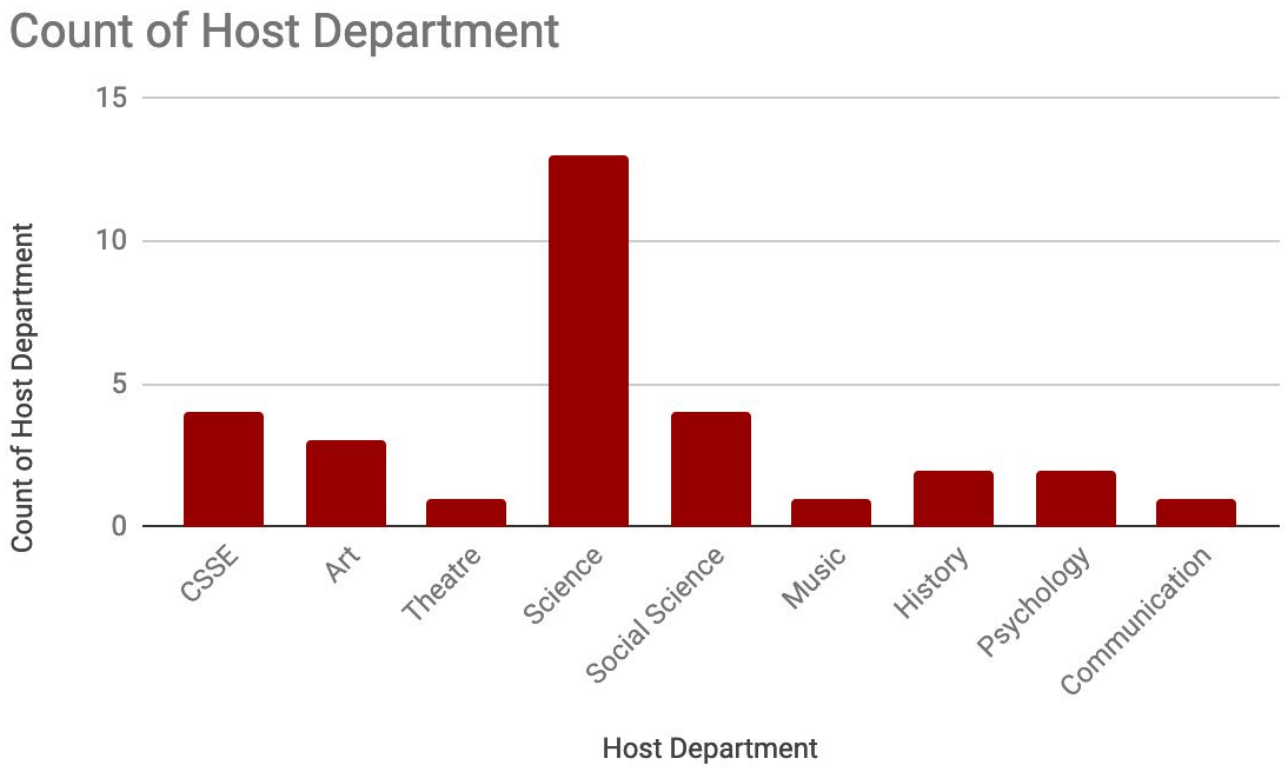


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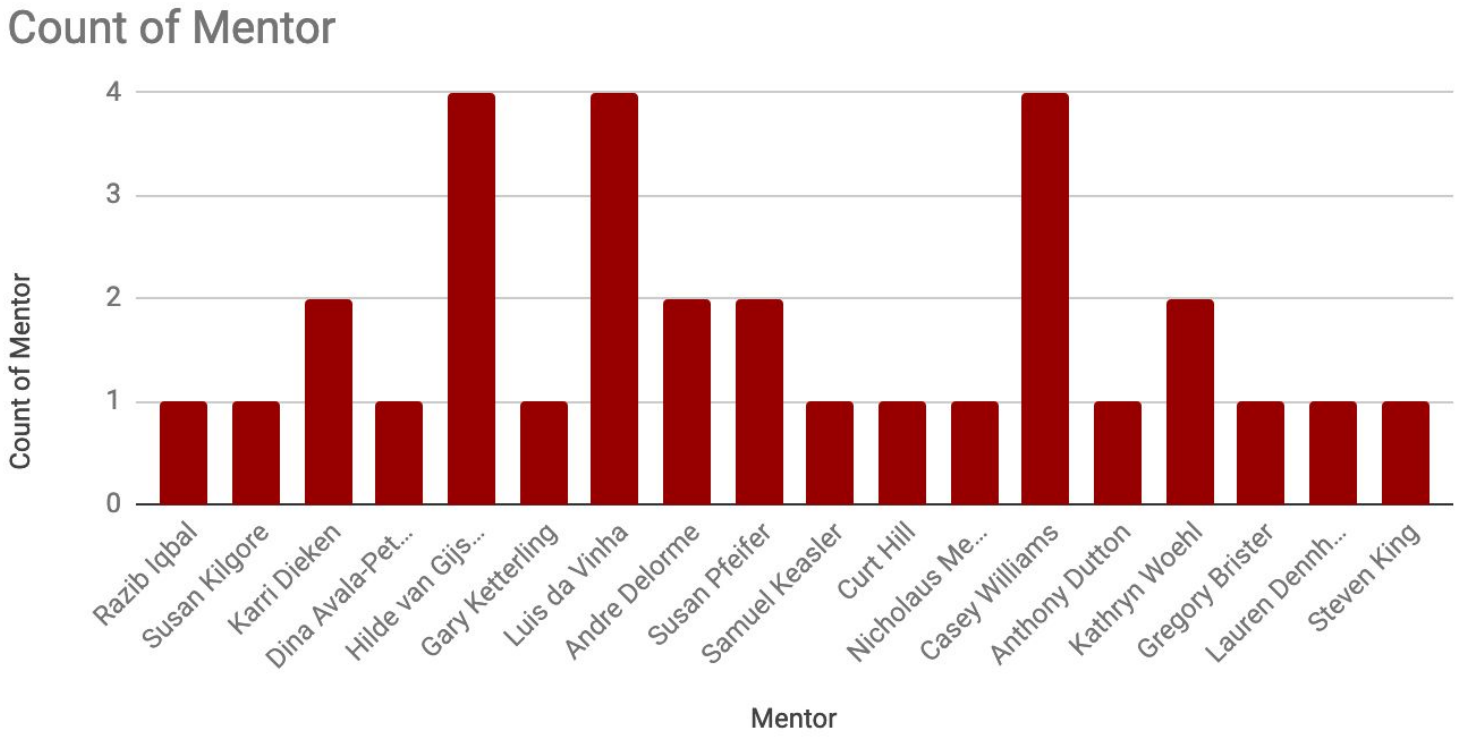


# SOAR: Awards Database

| Description | Unit Cost | Units | Request |
|---|---|---|---|
| Projects | $1,000 | 7 | $7,000 |
| Project materials | $250 | 7 | $1,750 |
| SOAR Gala | $400 | 1 | $400 |
| NCUR Membership | $850 | 1 | $850 |
| | | Total | $10,000 |

# SOAR: Budget Model

- Established infrastructure for administering RFP cycles
  - Goal to support 12-14 projects annually.
  - Special Summertime programming.
- Strategy for  Student and Faculty Retention and Recruitment
  - NSSE High Impact Practices for Freshman/Seniors
- Complementary to other High Impact Practices @VCSU
- SOAR as a model for broader NDUS implementation

## SOAR: Opportunities