

The 2021 Annual Report of Sponsored Research is available in the pages below in PDF to provide year to year comparison and trends.

All awards/amendments received in 2021 are also in Kuali Research and can be viewed individually in the Award Module (<https://byures.kuali.co/dashboard/common-tasks>)

Awards may also be viewed collectively in the Kuali Research Reports (<https://byures.kuali.co/dashboard/reports>). However, a few award transactions are not pulling into the Kuali Research Reports. We are continually fine tuning our award processing procedures to ensure accuracy of the Kuali Research Reports. If you have questions regarding any discrepancies between this PDF report and that which is displayed in Kuali Research, please let us know.

Thank you,

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2021 Annual Report of Sponsored Research

RESEARCH ADMINISTRATION OFFICE

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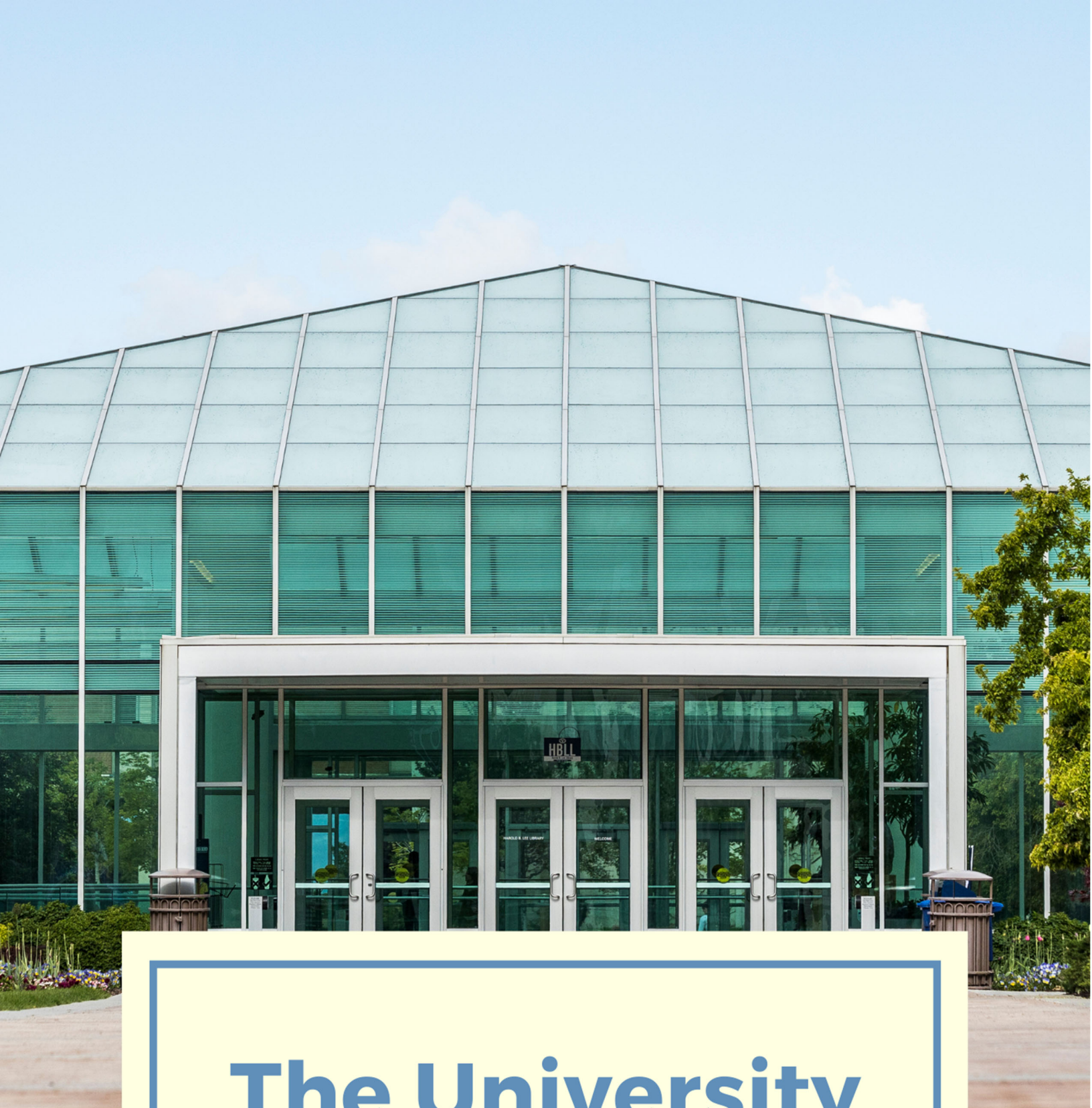
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Preface

This report covers January 1, 2021, to December 31, 2021.

Included are a number of activities that are carried out by the Research Administration Office (RAO).

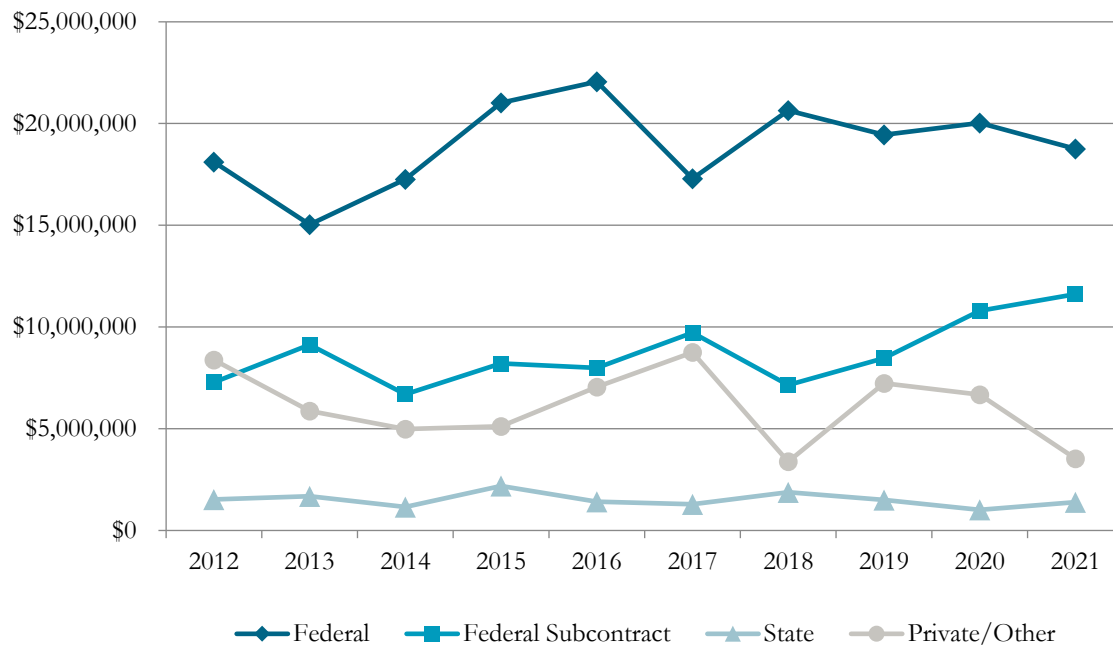
- ***Reports of Sponsored Projects:*** Sponsored projects at BYU are those funded by external sources through RAO. They are largely research projects, but many include programs that are designed to develop or support instructional or service activities. Support for creative activities such as performance, artistic creations, etc., may also come through RAO.
- ***Administrative Activities in Support of Research and Creative Activities:*** RAO supports three university committees which oversee compliance with university, state, and federal regulations.



The University

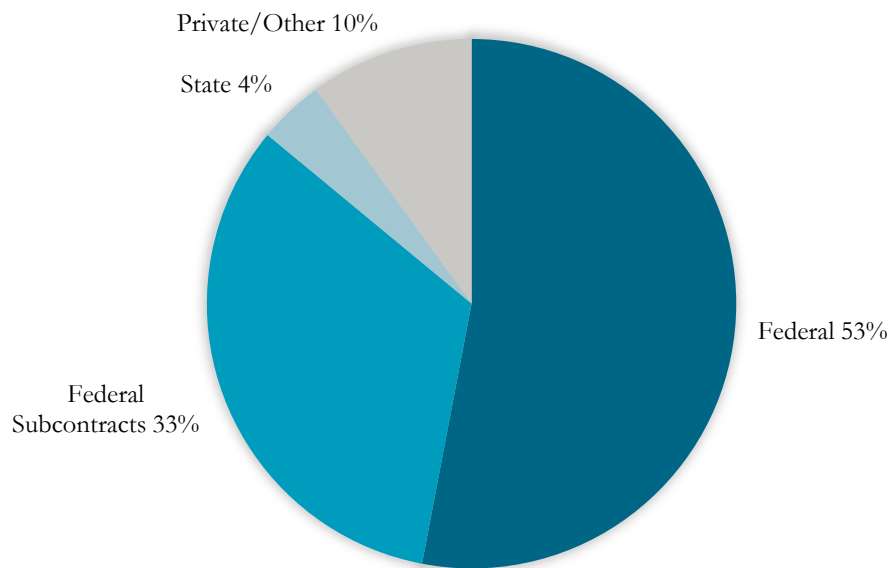
External Research Funding

| Grants/Contracts | | | | | | |
|------------------|--------------|---------------------|-------------|---------------|--------------|----------|
| Year | Federal | Federal Subcontract | State | Private/Other | Total | %Federal |
| 2012 | \$18,110,757 | \$7,282,203 | \$1,523,034 | \$8,379,690 | \$35,295,684 | 72% |
| 2013 | \$15,034,387 | \$9,126,548 | \$1,679,472 | \$5,871,718 | \$31,712,125 | 76% |
| 2014 | \$17,260,137 | \$6,693,946 | \$1,151,886 | \$4,984,448 | \$30,090,417 | 79% |
| 2015 | \$21,015,987 | \$8,205,836 | \$2,192,841 | \$5,115,501 | \$36,433,016 | 80% |
| 2016 | \$22,056,396 | \$7,987,588 | \$1,411,764 | \$7,051,367 | \$38,507,115 | 78% |
| 2017 | \$17,293,839 | \$9,715,815 | \$1,290,090 | \$8,756,281 | \$37,056,025 | 73% |
| 2018 | \$20,636,221 | \$7,147,550 | \$1,876,552 | \$3,386,457 | \$33,046,780 | 84% |
| 2019 | \$19,445,058 | \$8,469,044 | \$1,502,620 | \$7,231,977 | \$36,648,699 | 76% |
| 2020 | \$20,024,907 | \$10,794,493 | \$1,020,133 | \$6,672,388 | \$38,511,921 | 80% |
| 2021 | \$18,753,261 | \$11,614,913 | \$1,389,487 | \$3,526,316 | \$35,283,976 | 86% |



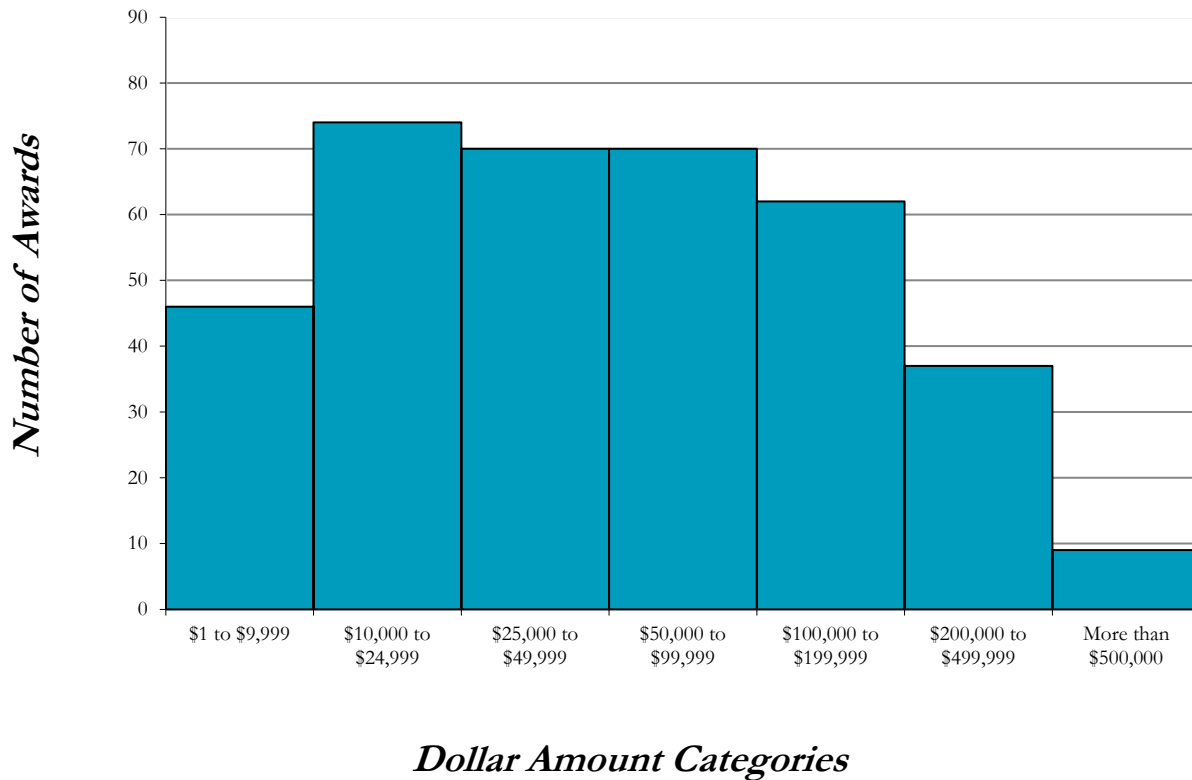
External Funds by Source-2021

| Source | Amount | % of Total |
|----------------------|---------------------|-------------|
| Federal | \$18,753,261 | 53% |
| Federal Subcontracts | \$11,614,913 | 33% |
| State | \$1,389,487 | 4% |
| Private/Other | \$3,526,316 | 10% |
| <i>Total Funding</i> | <i>\$35,283,976</i> | <i>100%</i> |

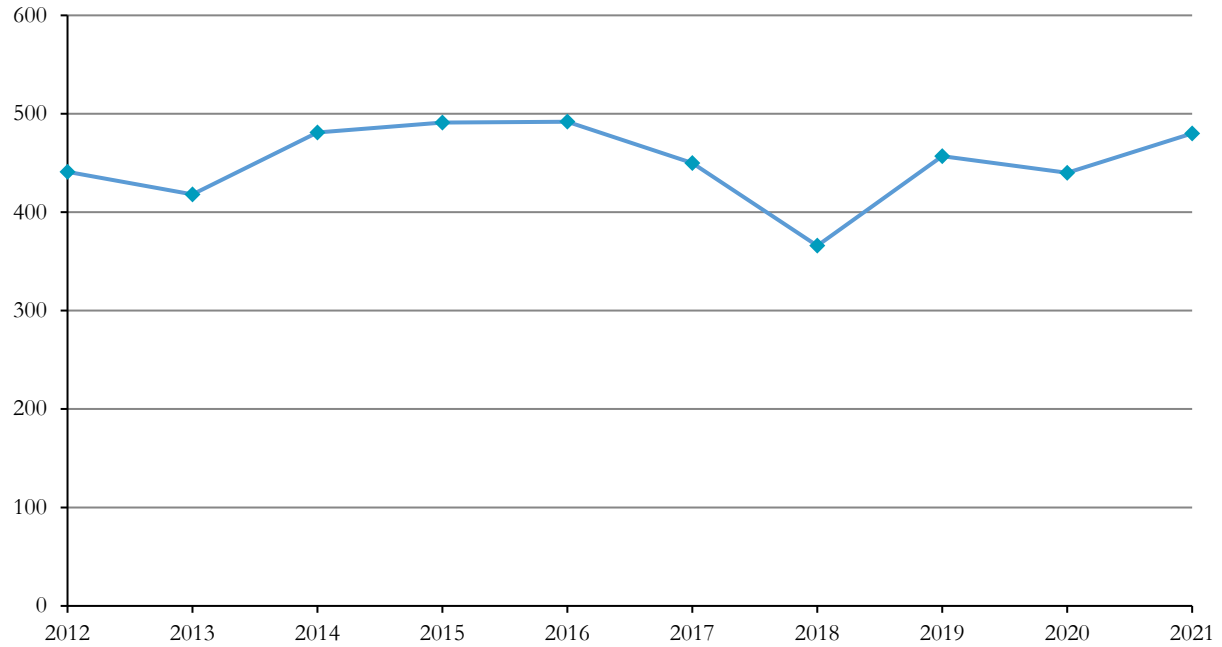


Awards by Amount-2021

| Dollar Amount Categories | # of Awards | % of Total Awards by # | \$ Awards | % of Total Awards by \$ Amount |
|--------------------------|-------------|---------------------------|--------------|--------------------------------------|
| \$1 to \$9,999 | 46 | 13% | \$263,332 | 1% |
| \$10,000 to \$24,999 | 74 | 20% | \$1,190,467 | 3% |
| \$25,000 to \$49,999 | 70 | 19% | \$2,484,498 | 7% |
| \$50,000 to \$99,999 | 70 | 19% | \$4,783,338 | 14% |
| \$100,000 to \$199,999 | 62 | 17% | \$8,750,199 | 25% |
| \$200,000 to \$499,999 | 37 | 10% | \$11,754,914 | 33% |
| More than \$500,000 | 9 | 2% | \$6,057,228 | 17% |
| Totals | 368 | 100% | \$35,283,976 | 100% |

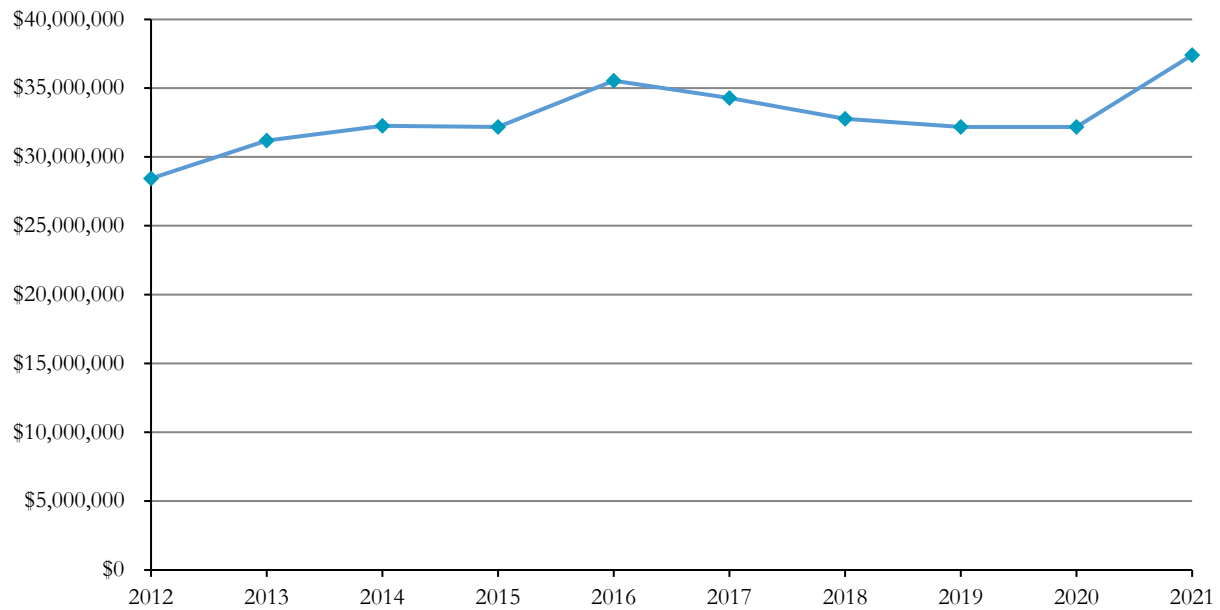


Proposals Submitted



Total Award Expenditures

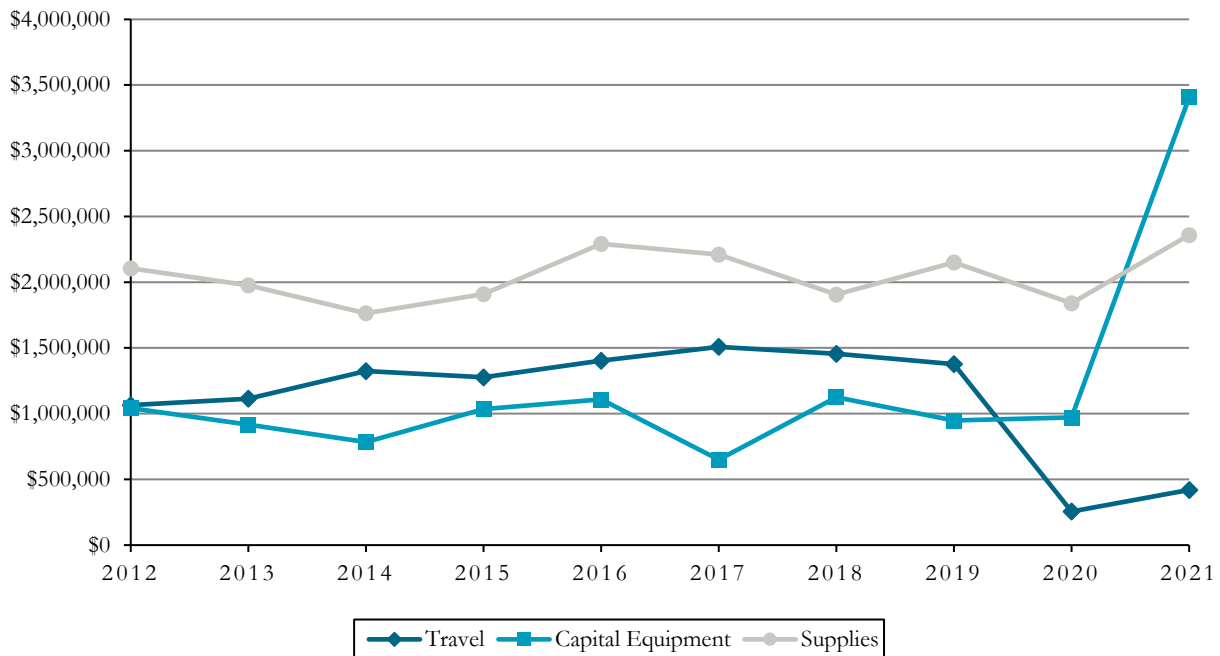
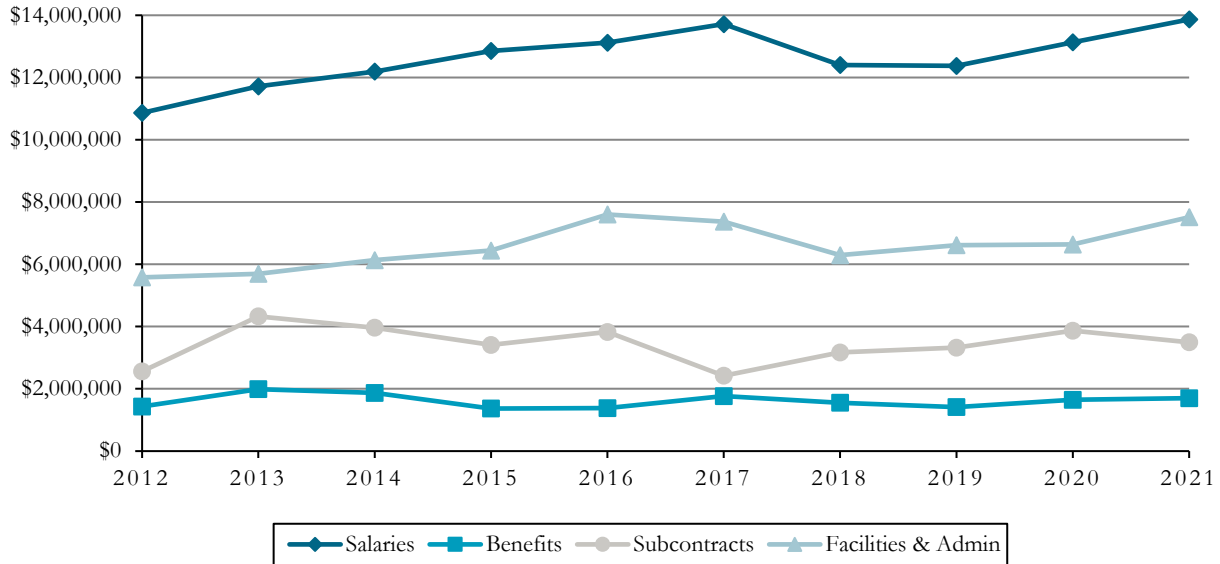
| Year | Total Expenditures |
|------|--------------------|
| 2012 | \$28,438,600 |
| 2013 | \$31,184,980 |
| 2014 | \$32,258,073 |
| 2015 | \$32,177,342 |
| 2016 | \$35,537,915 |
| 2017 | \$34,278,900 |
| 2018 | \$32,772,780 |
| 2019 | \$32,177,733 |
| 2020 | \$32,182,706 |
| 2021 | \$37,401,138 |



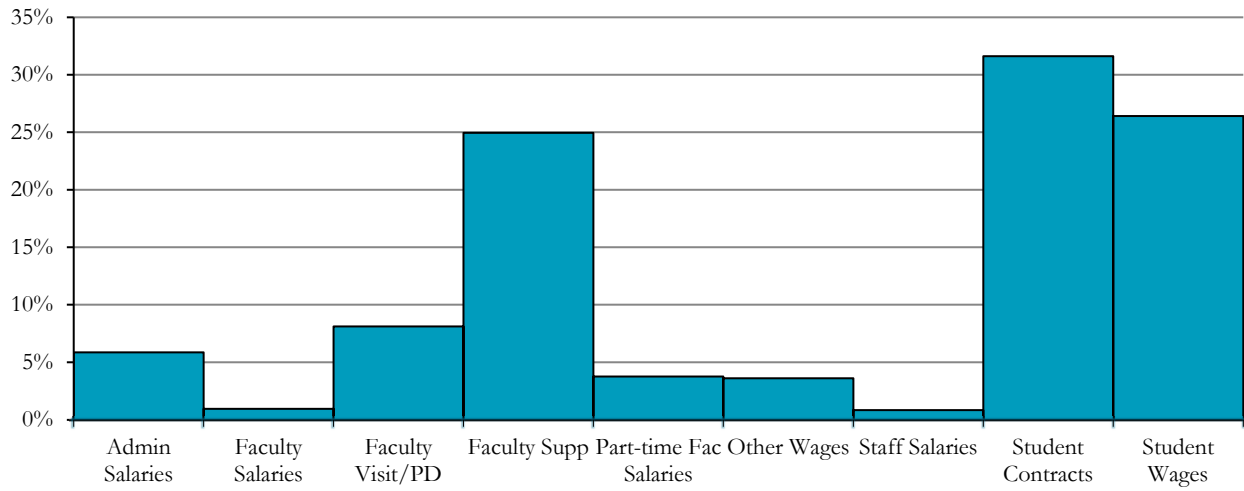
2021 Award Expenditures by Category

| <i>Personnel Costs</i> | <i>Amount</i> |
|---|-----------------------------|
| <i>Salaries & Wages</i> | |
| Admin Salaries | \$ 656,664 |
| Faculty Salaries | 183,520 |
| Faculty Sal-Visit-Health Ben | 1,200,460 |
| Faculty Supplemental | 3,423,792 |
| Other Wages | 403,597 |
| Part-time Faculty Salaries | 372,193 |
| Staff Salaries | 102,869 |
| Student Contracts | 4,176,203 |
| Student Wages | 3,344,991 |
| <i>Total Salaries & Wages</i> | <i>\$ 13,864,291</i> |
| Fringe Benefits | \$ 1,696,505 |
| <i>Total Personnel Cost</i> | <i>\$ 15,560,796</i> |
| <i>Other</i> | |
| Access Equipment | \$ 17,760 |
| Capital Equipment | 3,406,280 |
| Computer Serv-Campus-Contract | 324 |
| Conference & Symposium Costs | 35,270 |
| Consultants | 280,665 |
| Contract Services | 1,278,171 |
| Employee Development/Training | 39,298 |
| Equipment Maintenance | 82,556 |
| Facilities & Administration | 7,511,192 |
| Facilities Maintenance | 932 |
| Hosting, Food, Entertainment | 22,357 |
| Non-Capital Equipment | 182,730 |
| Participant Stipends | 253,756 |
| Postage and Mailing | 14,662 |
| Printing and Copying | 5,306 |
| Purchase Discounts Earned | (146) |
| Rental Expense | 122,659 |
| Research Fellowships | 65,292 |
| Research Publications Costs | 60,022 |
| Software Acquisitions/Support | 25,811 |
| Software Maintenance | 10,549 |
| Student Aid | 2,146,176 |
| SubContracts | 3,493,443 |
| Supplies | 2,358,884 |
| Telecommunications | 6,776 |
| Travel | 419,618 |
| <i>Total Other Expenditures</i> | <i>\$ 21,840,343</i> |
| <i>Total Research Expenditures</i> | <i>\$ 37,401,138</i> |

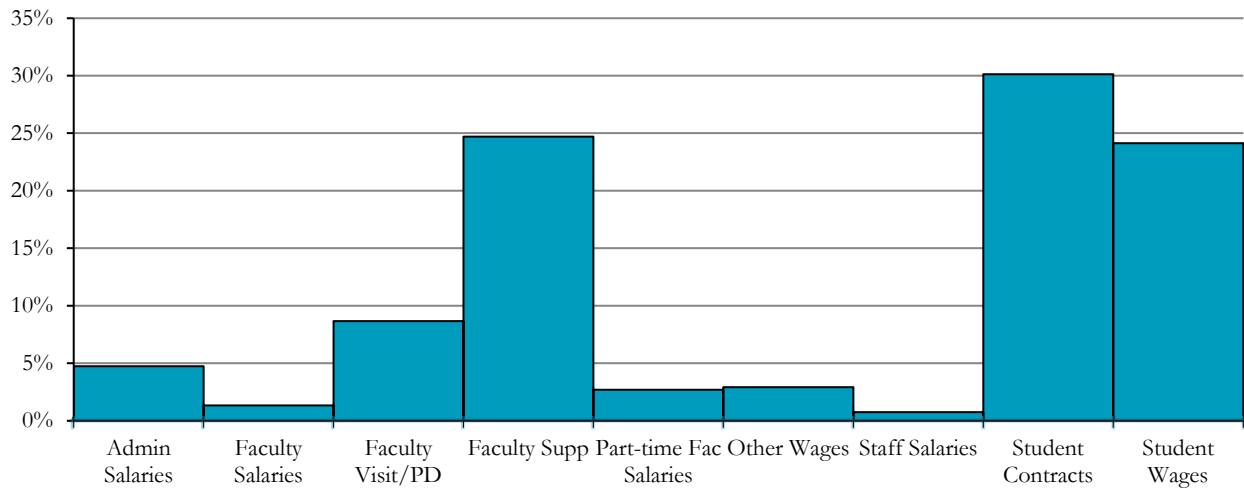
Award Dollars Expended

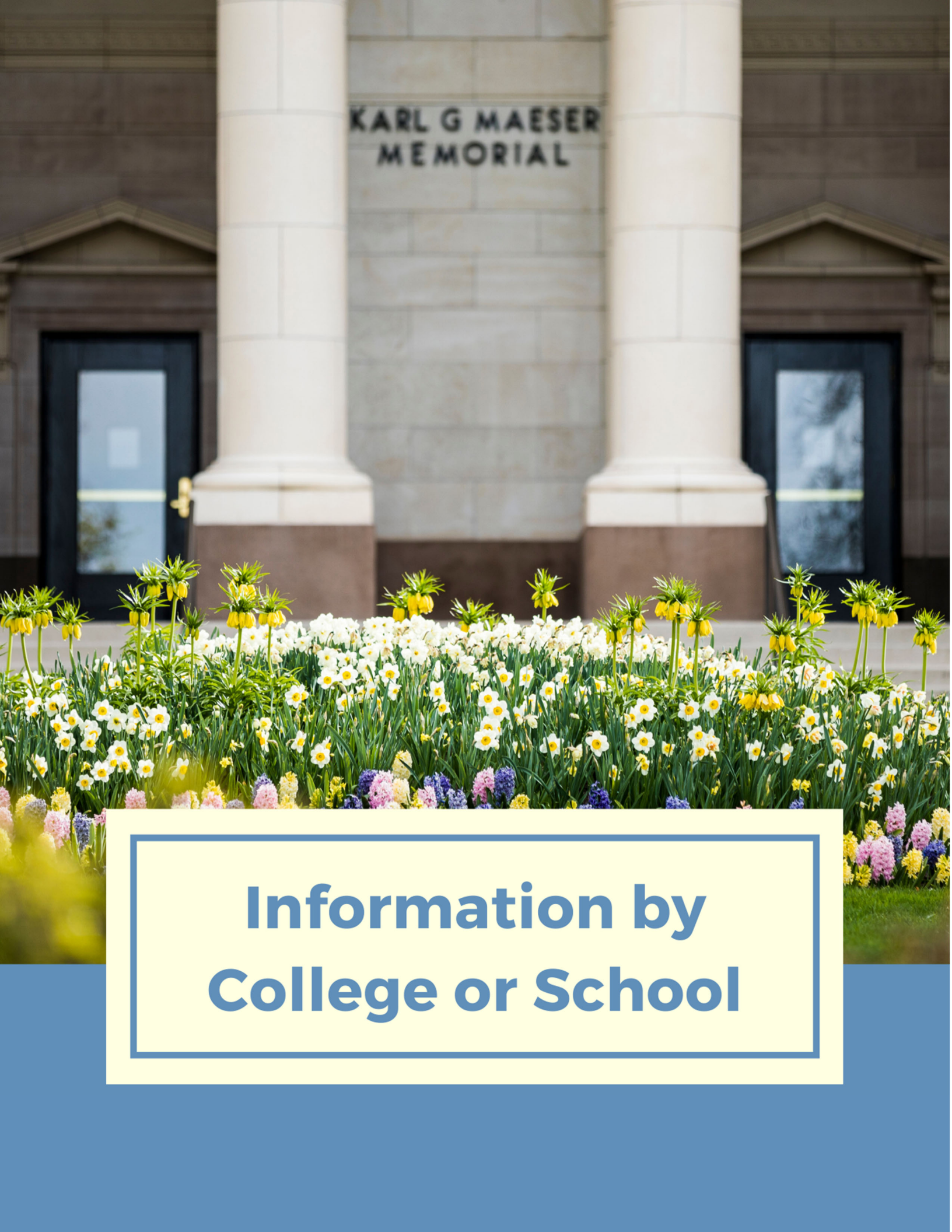


2020 Salaries and Wages Expenditures
Total: \$13,128,621



2021 Salaries and Wages Expenditures
Total: \$13,864,291



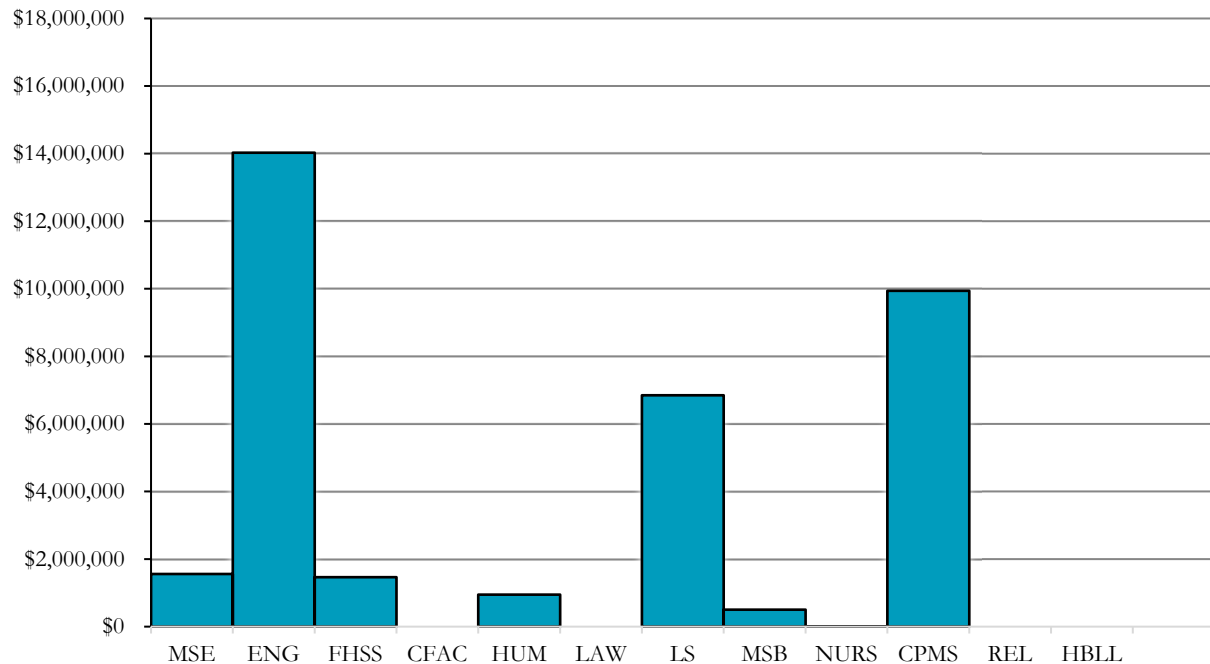
A photograph of the Karl G. Maeser Memorial building, featuring two large white columns and a stone facade. In the foreground, there is a vibrant garden of white and yellow daffodils, with some purple and pink flowers visible at the bottom. The building's entrance is flanked by two dark-framed glass doors.

KARL G MAESER
MEMORIAL

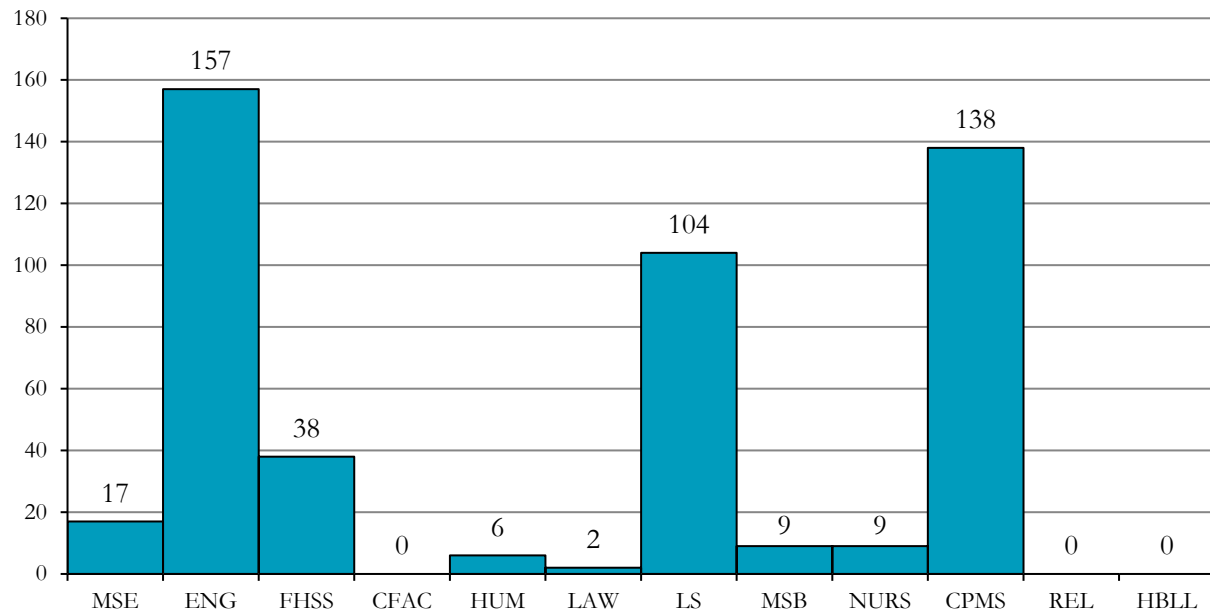
**Information by
College or School**

Total Awards by College

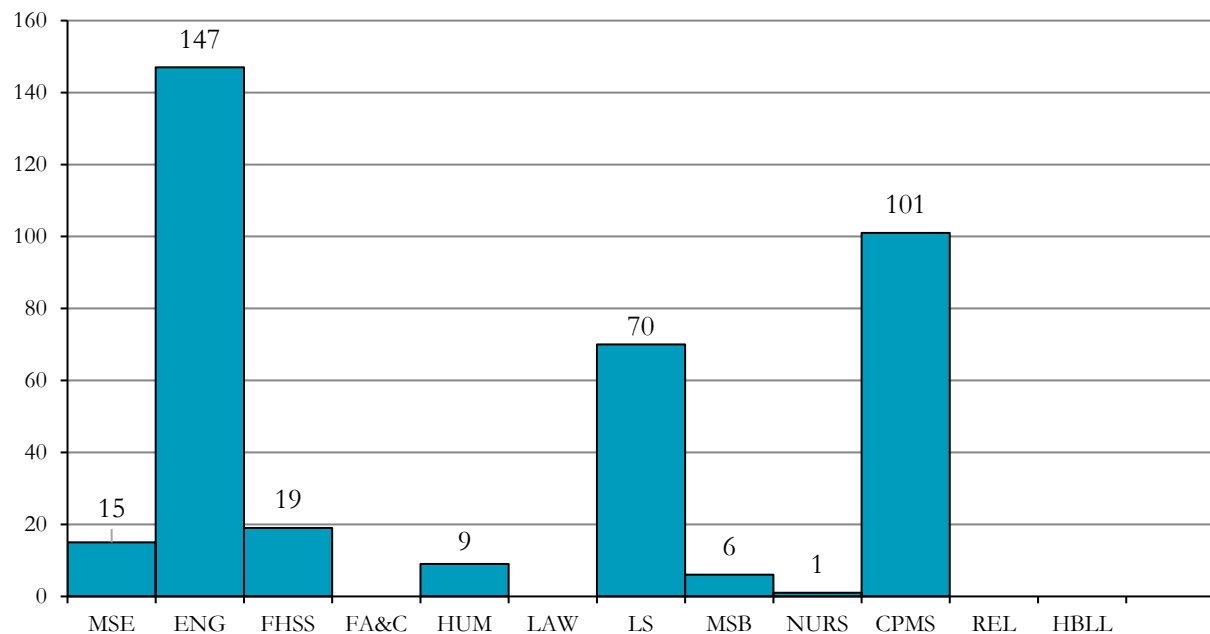
| <i>College or School</i> | <i>Total</i> |
|---|---------------------|
| David O. McKay School of Education | \$1,556,888 |
| Ira A. Fulton College of Engineering | \$14,028,784 |
| College of Family, Home & Social Sciences | \$1,463,898 |
| College of Fine Arts & Communications | \$0 |
| College of Humanities | \$944,640 |
| J. Reuben Clark Law School | \$0 |
| College of Life Sciences | \$6,849,169 |
| Marriot School of Business | \$500,099 |
| College of Nursing | \$750 |
| College of Physical & Mathematical Sciences | \$9,939,748 |
| Religious Education | \$0 |
| Harold B. Lee Library | \$0 |
| University Total | \$35,283,976 |



Number of Proposals-2021



Number of Awards-2021



Total Awards by College and Department

| <i>College and Department</i> | <i>Amount</i> |
|---|---------------------|
| <u>David O. McKay School of Education</u> | |
| Center for Improvement of Teacher Education & Schooling | \$494,927 |
| Communication Disorders | \$342,217 |
| Counseling, Psychology, & Special Education | \$129,167 |
| Education Leadership & Foundations | \$74,809 |
| Instructional Psychology & Technology | \$515,768 |
| Teacher Education | \$0 |
| TOTAL | \$1,556,888 |
| <u>Ira A. Fulton College of Engineering</u> | |
| Chemical Engineering | \$2,121,236 |
| Civil & Construction Engineering | \$1,398,847 |
| Electrical & Computer Engineering | \$3,424,071 |
| Manufacturing Engineering | \$948,986 |
| Mechanical Engineering | \$5,850,417 |
| School of Technology | \$285,227 |
| TOTAL | \$14,028,784 |
| <u>College of Family, Home, & Social Sciences</u> | |
| Anthropology | \$30,140 |
| Economics | \$312,009 |
| Geography | \$11,736 |
| History | \$460,582 |
| Museum of Peoples & Cultures | \$0 |
| Office of Public Archaeology | \$0 |
| Political Science | \$466,119 |
| Psychology | \$153,097 |
| School of Family Life | \$0 |
| School of Social Work | \$18,017 |
| Sociology | \$12,198 |
| TOTAL | \$1,463,898 |
| <u>College of Humanities</u> | |
| Asian & Near East Languages | \$939,268 |
| Comparative Arts & Letters | \$5,372 |
| English | \$0 |
| French & Italian | \$0 |
| German & Russian | \$0 |
| Linguistics | \$0 |
| Philosophy | \$0 |
| Spanish & Portuguese | \$0 |
| TOTAL | \$944,640 |

College of Fine Arts & Communications

| | |
|----------------------|-----|
| Art | \$0 |
| Communications | \$0 |
| Dance | \$0 |
| Design | \$0 |
| School of Music | \$0 |
| Theatre & Media Arts | \$0 |

TOTAL \$0

College of Life Sciences

| | |
|--------------------------------------|-------------|
| Biology | \$1,879,072 |
| Cell Biology & Physiology | \$278,857 |
| Exercise Science | \$261,705 |
| Microbiology & Molecular Biology | \$819,479 |
| Monte Bean Life Science Museum | \$24,000 |
| Nutrition, Dietetics, & Food Science | \$780,445 |
| Plant & Wildlife Sciences | \$2,270,034 |
| Public Health | \$535,577 |

TOTAL \$6,849,169

Marriott School of Business

| | |
|---------------------------------------|-----------|
| Ballard Center for Social Impact | \$5,000 |
| Experience Design & Management | \$0 |
| Finance & Managerial Economics | \$0 |
| Global Management Center | \$285,000 |
| Information Systems | \$6,878 |
| Management | \$203,221 |
| Marketing & Global Supply Chain | \$0 |
| Romney Institute of Public Management | \$0 |
| School of Accountancy | \$0 |

TOTAL \$500,099

College of Nursing

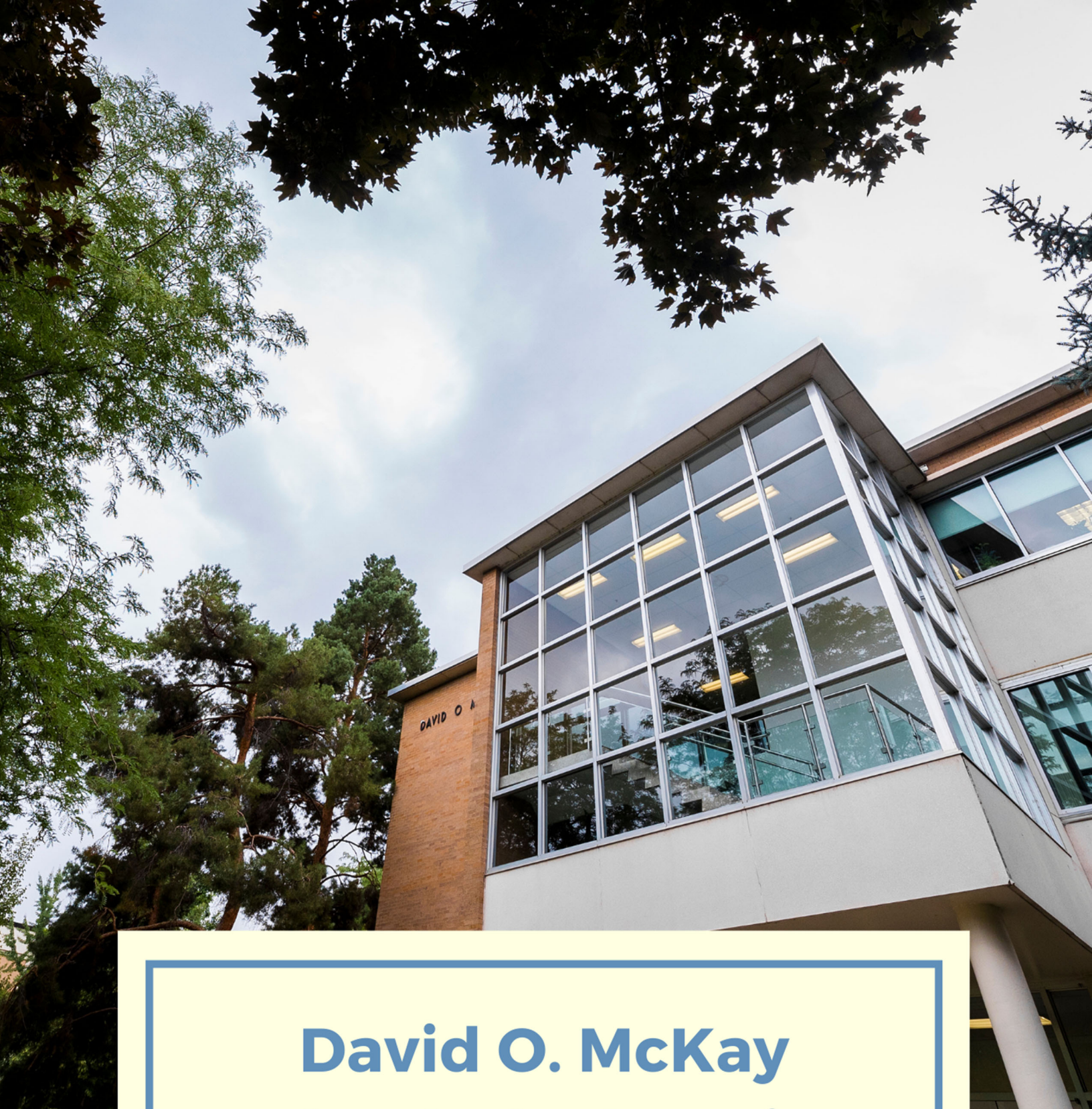
TOTAL \$750

College of Physical & Mathematical Sciences

| | |
|--------------------------|-------------|
| Chemistry & Biochemistry | \$4,521,543 |
| Computer Science | \$1,038,189 |
| Geology | \$386,079 |
| Mathematics | \$417,199 |
| Mathematics Education | \$0 |
| Physics & Astronomy | \$2,793,936 |
| Statistics | \$782,800 |

TOTAL \$9,939,748

Grand Total \$35,283,976

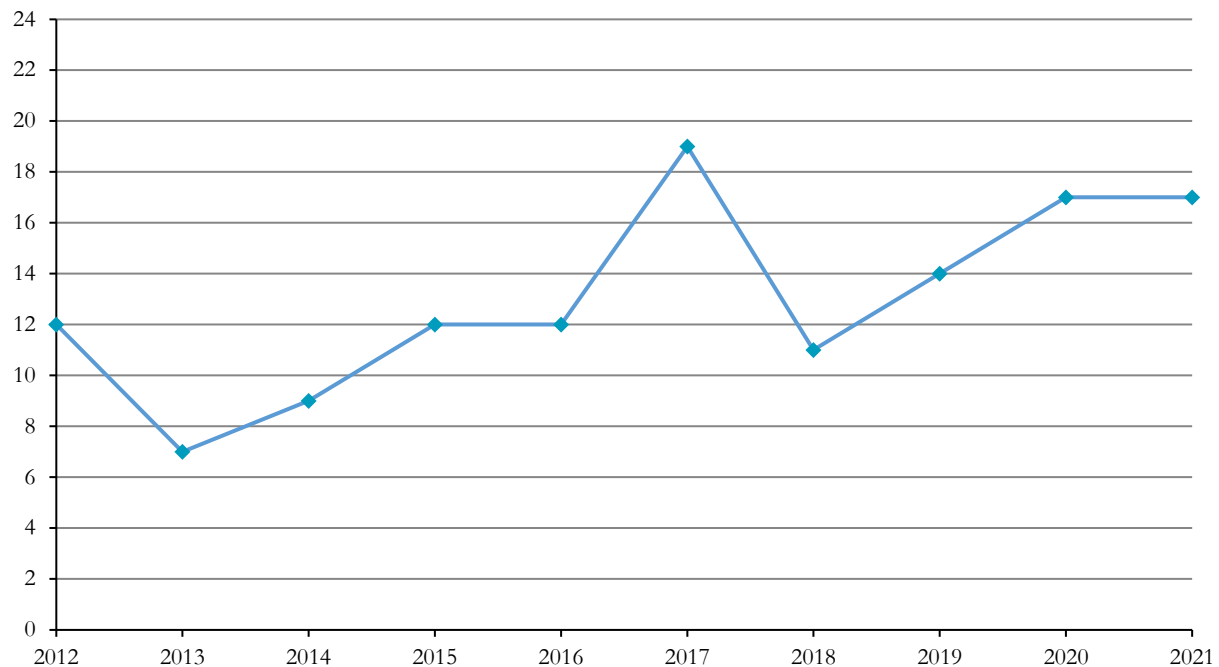


David O. McKay School of Education

Summary by Departments

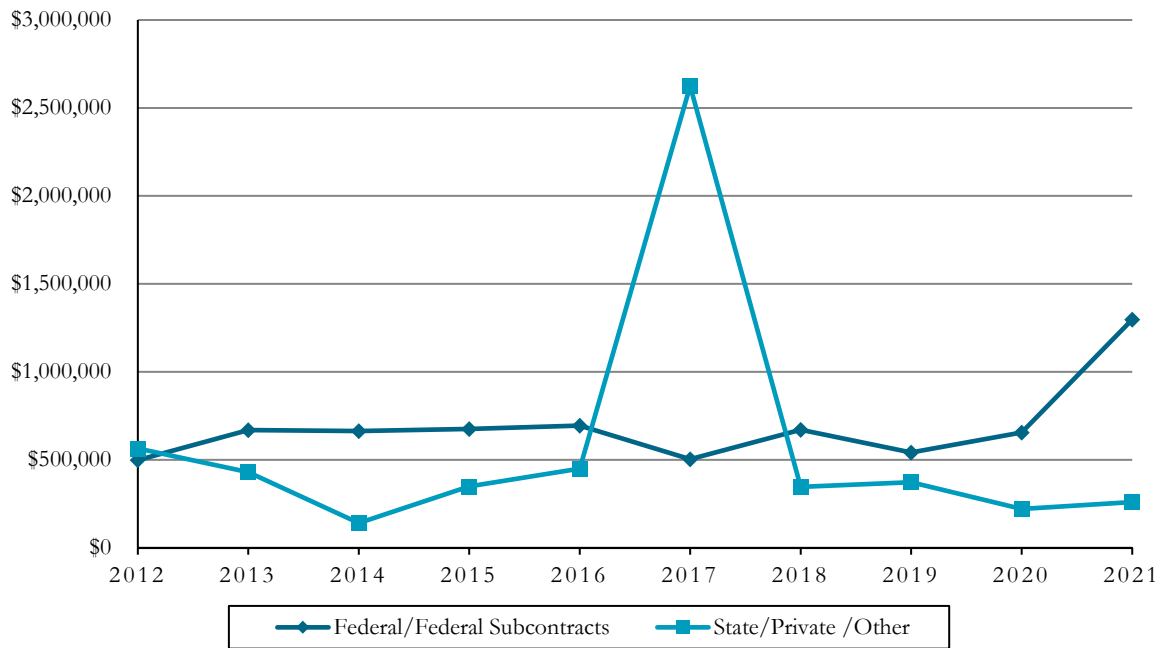
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|---|-------------------------|--------------------------|-------------|-----------------|
| Center for Improvement of Teacher Education & Schooling | 2 | 4 | 7 | \$494,927 |
| Communication Disorders | 3 | 3 | 3 | \$342,217 |
| Counseling, Psychology, & Special Education | 3 | 6 | 3 | \$129,167 |
| Educational Leadership & Foundations | 0 | 0 | 1 | \$74,809 |
| Instructional Psychology & Technology | 0 | 0 | 1 | \$515,768 |
| Teacher Education | 3 | 4 | 0 | \$0 |
| TOTALS | 11 | 17 | 15 | \$1,556,888 |

Proposal Submissions



Awards by Sources

| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|-------------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$498,499 | \$564,185 | \$1,062,684 |
| 2013 | \$669,318 | \$430,120 | \$1,099,438 |
| 2014 | \$663,944 | \$141,000 | \$804,944 |
| 2015 | \$675,327 | \$348,440 | \$1,023,767 |
| 2016 | \$693,993 | \$449,966 | \$1,143,959 |
| 2017 | \$503,548 | \$2,624,841 | \$3,128,389 |
| 2018 | \$671,011 | \$345,902 | \$1,016,913 |
| 2019 | \$541,274 | \$372,300 | \$913,574 |
| 2020 | \$654,922 | \$220,619 | \$875,541 |
| 2021 | \$1,297,390 | \$259,499 | \$1,556,889 |



David O. McKay School of Education 2021 Awards

| <u>Researcher</u> | <u>Role</u> | <u>Sponsor</u> | <u>Prime Sponsor</u> | <u>Title</u> | <u>Beg Date</u> | <u>End Date</u> | <u>Account</u> | <u>Amount</u> |
|---|-------------|--|-------------------------|---|-----------------|-----------------|----------------|---------------|
| <i>Center for Improvement of Teacher Education & Schooling</i> | | | | | | | | |
| Caldarella, Paul | PI | University of Kansas | Department of Education | Middle School Class-wide Function-related intervention Teams (MS CW-FIT): Improving Academic Engagement and Outcomes for Middle School Students | Jul-16 | Jun-21 | Ro302677 | \$4,999 |
| Caldarella, Paul | PI | University of Kansas | Department of Education | Initial Efficacy Evaluation of the CW-FIT Middle School Program: Improving Academic Engagement | Jan-22 | Jun-22 | Ro302988 | \$32,657 |
| Caldarella, Paul | PI | University of Kansas | Department of Education | Initial Efficacy Evaluation of the CW-FIT Middle School Program: Improving Academic Engagement | Jan-22 | Jun-22 | Ro302988 | \$167,272 |
| Flox, Cally | PI | National Endowment for the Arts | | Native American Curriculum Initiative | Jul-21 | Jun-23 | Ro202556 | \$40,000 |
| Flox, Cally | PI | Utah Division of Arts and Museums | | Native American Curriculum Initiative (BYU Arts Partnership) Continuation Project | Jul-20 | Jun-21 | Ro402353 | \$30,000 |
| Flox, Cally | PI | Utah State Board of Education | Department of Education | 2021-22 BTSALP USBE Grant | Jul-21 | Jun-22 | Ro402370 | \$189,999 |
| Flox, Cally | PI | Utah Division of Arts and Museums | | Native American Curriculum Initiative (BYU Arts Partnership) Continuation Project | Jul-21 | Jun-22 | Ro402380 | \$30,000 |
| <i>Communications Disorders</i> | | | | | | | | |
| Harmon, Tyson | PI | American Speech-Language-Hearing Association | | 2021 Advancing Academic-Research Career (AARC) Award | Sep-21 | Feb-23 | Ro502354 | \$5,000 |
| Tanner, Kristine | PI | National Institutes of Health | | Pathophysiology of Voice Disorders due to Combination Inhaled Corticosteroids in Asthma | May-21 | Apr-22 | Ro102086 | \$267,383 |
| Tanner, Kristine | PI | National Institutes of Health | | Imaging and influence of glottic and subglottic anatomy in healthy and stenotic patients | Sep-20 | Aug-22 | Ro102088 | \$69,834 |

Counseling, Psychology, & Special Education

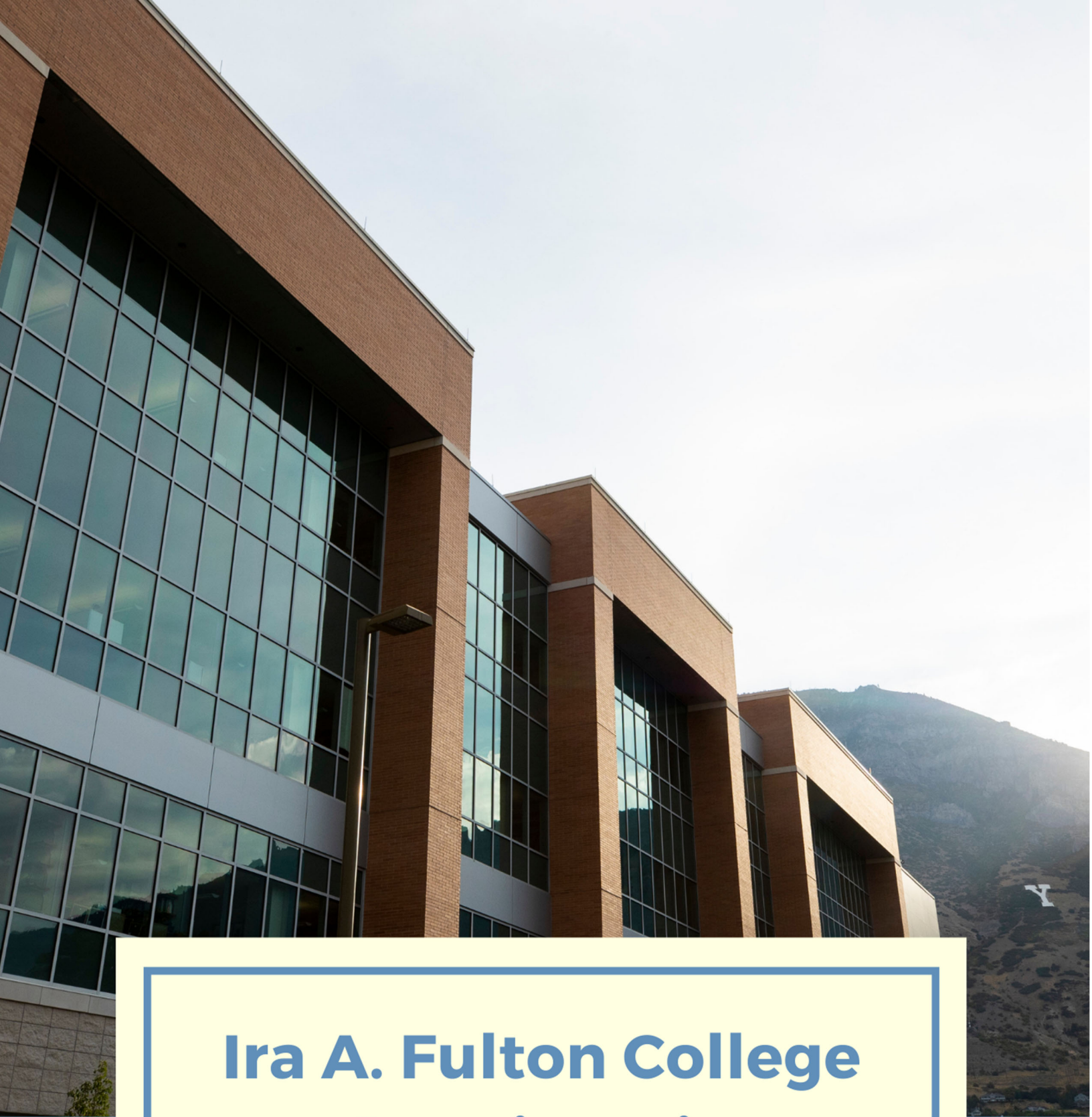
| | | | | | | | | |
|--------------------|-------|-------------------------------|-------------------------------|---|--------|--------|----------|----------|
| Charlton, Cade | PI | University of Florida | Department of Education | CEEDAR Funding | Aug-22 | Dec-22 | RO303007 | \$21,168 |
| Charlton, Cade | PI | Southern Utah University | Utah State Board of Education | SPUF CEEDAR/USBE Pilot | Mar-22 | Jun-22 | RO402374 | \$4,500 |
| Gabrielson, Terisa | PI | Utah State Board of Education | Department of Education | Building Utah's School Psychologist Workforce | Jul-21 | Jun-23 | RO303025 | \$51,750 |
| Young, Ellie | Co-PI | Utah State Board of Education | Department of Education | Building Utah's School Psychologist Workforce | Jul-21 | Jun-23 | RO303025 | \$51,750 |

Educational Leadership & Foundations

| | | | | | | | | |
|----------------|----|-------------------------------|--|--|--------|--------|----------|----------|
| Hallam, Pamela | PI | National Institutes of Health | | Protecting Teacher's voices: Investigating Risk Factors, Conducting Analysis | May-21 | Apr-22 | RO302986 | \$74,809 |
|----------------|----|-------------------------------|--|--|--------|--------|----------|----------|

Instructional Psychology & Technology

| | | | | | | | | |
|----------------|-------|-----------------------------|-----------------------------|--|--------|--------|----------|-----------|
| Leary, Heather | Co-PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | RO112461 | \$5,280 |
| Leary, Heather | Co-PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | RO112460 | \$137,259 |
| Leary, Heather | Co-PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | RO112460 | \$5,280 |
| Leary, Heather | Co-PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | RO112461 | \$59,136 |
| Leary, Heather | Co-PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | RO112460 | \$228,060 |
| Rich, Peter | PI | George Mason University | National Science Foundation | Project REVEAL-HS: Fostering Student Computational Thinking in Data Analysis Through Self-Regulated Learning Prompts and Analytics (Joint Proposal with George Mason University) | Oct-18 | Sep-22 | RO302828 | \$80,753 |

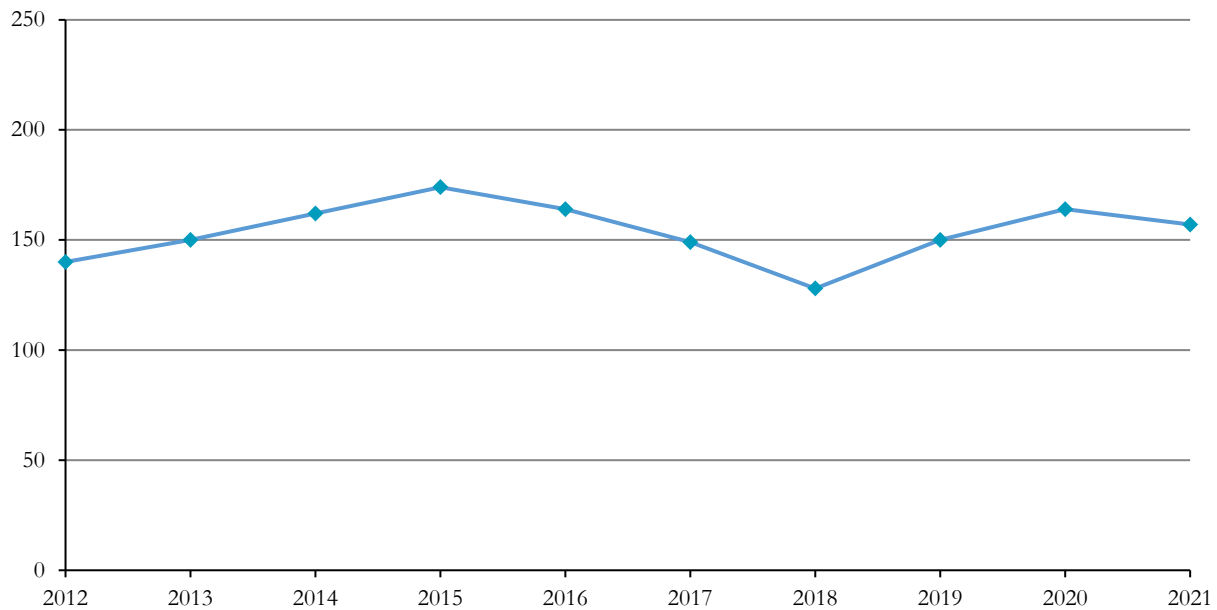


Ira A. Fulton College of Engineering

Summary by Departments

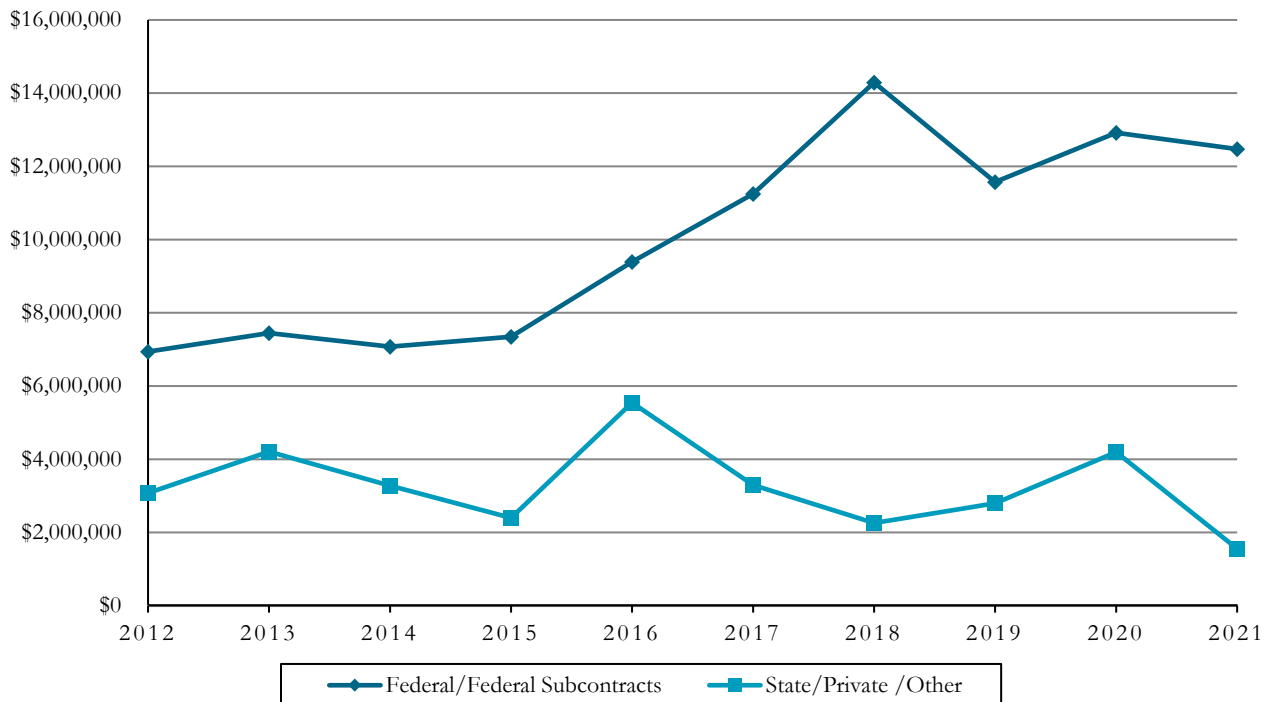
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|-----------------------------------|-------------------------|--------------------------|-------------|-----------------|
| Chemical Engineering | 12 | 24 | 14 | \$2,121,236 |
| Civil & Construction Engineering | 9 | 21 | 14 | \$1,398,847 |
| Electrical & Computer Engineering | 18 | 38 | 36 | \$3,424,071 |
| Manufacturing Engineering | 5 | 10 | 12 | \$948,987 |
| Mechanical Engineering | 22 | 57 | 68 | \$5,850,417 |
| School of Technology | 3 | 7 | 3 | \$285,227 |
| TOTALS | 69 | 157 | 147 | \$14,028,784 |

Proposal Submissions



Awards by Sources

| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|--------------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$6,940,419 | \$3,075,235 | \$10,015,653 |
| 2013 | \$7,446,524 | \$4,208,437 | \$11,654,961 |
| 2014 | \$7,073,257 | \$3,279,114 | \$10,352,371 |
| 2015 | \$7,345,708 | \$2,397,665 | \$9,743,373 |
| 2016 | \$9,391,742 | \$5,546,423 | \$14,938,165 |
| 2017 | \$11,246,406 | \$3,294,087 | \$14,540,493 |
| 2018 | \$14,289,851 | \$2,259,118 | \$16,548,969 |
| 2019 | \$11,570,059 | \$2,794,877 | \$14,364,936 |
| 2020 | \$12,915,725 | \$4,196,130 | \$17,111,855 |
| 2021 | \$12,469,618 | \$1,559,166 | \$14,028,784 |



Ira A. Fulton College of Engineering 2021 Awards

| <u>Researcher</u> | <u>Role</u> | <u>Sponsor</u> | <u>Prime Sponsor</u> | <u>Title</u> | <u>Beg Date</u> | <u>End Date</u> | <u>Account</u> | <u>Amount</u> |
|-----------------------------|-------------|-----------------------------------|----------------------|--|-----------------|-----------------|----------------|---------------|
| Chemical Engineering | | | | | | | | |
| Baxter, Larry | PI | Department of Energy | | Integrated University Program | Aug-21 | Aug-33 | Ro202557 | \$161,000 |
| Baxter, Larry | PI | Department of Energy | | Integrated University Program | Aug-21 | Aug-33 | Ro202558 | \$7,500 |
| Fry, Andrew | PI | Department of Energy | | Testing and model – based optimization of coal-fired primary heater design for indirect supercritical CO ₂ Power Cycles | Oct-20 | Dec-21 | Ro202545 | \$90,000 |
| Fry, Andrew | PI | University of Utah | Department of Energy | Deployment of artificial intelligence for dynamic optimization to measure heat rate during ramping for coal-based power plants | Oct-19 | Sep-22 | Ro302897 | \$744,258 |
| Fry, Andrew | PI | University of Utah | Department of Energy | Deployment of artificial intelligence for dynamic optimization to measure heat rate during ramping for coal-based power plants | Oct-19 | Sep-22 | Ro302897 | \$344,264 |
| Fry, Andrew | PI | Electric Power Research Institute | Department of Energy | Testing of Ash Behavior and Corrosion while Firing Coal in a Pressurized Oxy-Combustor | Nov-21 | Apr-22 | Ro303034 | \$42,450 |
| Fry, Andrew | PI | University of Utah | PacifiCorp | Technical Assistance in Support of Biomass Co-firing Demonstration | Jun-17 | Nov-21 | Ro602554 | \$15,000 |
| Harb, John | PI | Alpha Tech Research Corp | | Fate of Contaminants and Minor Components in a Fuel-containing Molten Salt | Jul-21 | Jun-22 | Ro602670 | \$80,525 |
| Hedengren, John | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112367 | \$20,000 |
| Hedengren, John | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112474 | \$10,500 |

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| Hedengren, John | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Hedengren, John | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Hedengren, John | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Hedengren, John | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Hedengren, John | Co-PI | Insitu (A Boeing Company) | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$8,800 |
| Hedengren, John | PI | Seeq | | Hybrid Physics-based and Deep Learning | Jun-21 | May-24 | Ro602660 | \$150,000 |
| Rapplee, Devin | PI | Department of Energy | | High-Efficiency Electrochemical Test Facility for Corrosion and Hydrodynamic Analysis in Molten Salts | Oct-21 | Sep-22 | Ro202561 | \$180,269 |
| Rapplee, Devin | PI | Lawrence Livermore National Labs | Department of Energy | SCALE-UP OF SUPERIMPOSING AC OVER DC FOR MOLTEN SALT ELECTROREFINING | Apr-21 | Apr-22 | Ro302984 | \$157,998 |
| Rapplee, Devin | PI | Savannah River National Lab | Department of Energy | Technical Exchange on Pyrochemical Processing | Jan-21 | Jan-22 | Ro302967 | \$34,872 |
| Wheeler, Dean | PI | National Renewable Energy Laboratory | Department of Energy | Local Mapping of Electrode Properties for Extreme Fast Charging | Feb-22 | Aug-22 | Ro302898 | \$25,000 |
| Wheeler, Dean | PI | Applied Minerals Inc. | Department of Energy | STTR Phase I: Domestic Halloysite-Derived Silicon as a Low-Cost High-Performance Anode Material for Li-Ion Batteries | Jun-22 | Jun-22 | Ro303036 | \$40,000 |
| Civil & Construction Engineering | | | | | | | | |
| Ames, Dan | Co-PI | National Aeronautics and Space Administration | | Improving Resiliency and Reducing Risk due to Extreme Hydrologic Events through Application of Earth Observations and In-Situ Monitoring Information | Nov-19 | Oct-22 | Ro162040 | \$81,318 |
| Ames, Dan | PI | Utah State University | National Science Foundation | SI2SSI: Cyberinfrastructure of Advancing Hydrologic Knowledge through Collaborative Integration of Data Science, Modeling and Analysis | oct202 | Aug-21 | Ro302774 | \$3,113 |
| Franke, Kevin | PI | National Science Foundation | | BRITE Pivot: Towards Intelligent Health Monitoring, Inspection, and Reconnaissance of Critical Infrastructure using Autonomous Robots | Jan-22 | Dec-24 | Ro112472 | \$595,822 |

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| Franke, Kevin | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112367 | \$20,000 |
| Franke, Kevin | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112474 | \$10,500 |
| Franke, Kevin | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Franke, Kevin | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Franke, Kevin | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Franke, Kevin | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Franke, Kevin | Co-PI | Insitu (A Boeing Company) | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$8,800 |
| Jones, Norm | Co-PI | Utah State University | National Science Foundation | SI2SSI: Cyberinfrastructure of Advancing Hydrologic Knowledge through Collaborative Integration of Data Science, Modeling and Analysis | Oct-20 | Aug-21 | Ro302774 | \$3,021 |
| Judd, Johnn | PI | MTC Solutions | | Strength and behavior of composite timber concrete panels and bearing beam hangers | Dec-19 | Mar-22 | Ro570030 | \$100 |
| Macfarlane, Gregory | Co-PI | Utah Department of Transportation | | ANALYSIS OF PERFORMANCE MEASURES OF UDOTS TRAFFIC INCIDENT MANAGEMENT PROGRAM: PHASE III | Nov-21 | Jun-23 | Ro402379 | \$14,999 |
| Macfarlane, Gregory | PI | Utah Department of Transportation | | Equitable Access to Nutrition in Utah | Oct-21 | Sep-22 | Ro402376 | \$23,797 |
| Macfarlane, Gregory | PI | Utah Department of Transportation | | Optimizing Traffic Incident Management Deployment in Utah | Oct-21 | Dec-23 | Ro402377 | \$34,998 |
| Miller, Woodruff | PI | Timpanogas Special Services District | State of Utah | Utah Lake Nutrient Cycling Studies: Phase I | Feb-21 | Feb-22 | Ro402369 | \$83,112 |
| Nelson, Jim | PI | National Aeronautics and Space Administration | | Improving Resiliency and Reducing Risk due to Extreme Hydrologic Events through Application of Earth Observations and In-Situ Monitoring Information | Nov-19 | Oct-22 | Ro162040 | \$83,782 |
| Nelson, Jim | Co-PI | Utah State University | National Science Foundation | SI2SSI: Cyberinfrastructure of Advancing Hydrologic Knowledge through Collaborative Integration of Data Science, Modeling and Analysis | Oct-20 | Aug-21 | Ro302774 | \$3,021 |

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| Rollins, Kyle | PI | Utah Department of Transportation | | BEHAVIOR OF REINFORCED AND UNREINFORCED LIGHTWEIGHT CELLULAR CONCRETE FOR RETAINING WALLS | May-20 | Sep-22 | Ro402354 | \$35,575 |
| Schultz, Grant | Co-PI | National Science Foundation | | Point Process Models for Traffic Risk Analysis and Crash Prevention | Aug-21 | Jul-24 | Ro112446 | \$49,985 |
| Schultz, Grant | Co-PI | Utah Department of Transportation | | Optimizing Traffic Incident Management Deployment in Utah | Oct-21 | Dec-23 | Ro402377 | \$34,998 |
| Schultz, Grant | PI | Utah Department of Transportation | | ANALYSIS OF PERFORMANCE MEASURES OF UDOTS TRAFFIC INCIDENT MANAGEMENT PROGRAM: PHASE III | Nov-21 | Jun-23 | Ro402379 | \$14,999 |
| Schultz, Grant | PI | Utah Department of Transportation | | BYU SAFETY MODELING FY21 | Apr-21 | Dec-22 | Ro402367 | \$59,994 |
| Schultz, Grant | PI | Utah Department of Transportation | | EFFECTIVENESS OF ITS ON UTAH ROADWAYS | Oct-21 | Feb-23 | Ro402378 | \$75,000 |
| Schultz, Grant | PI | Utah Department of Transportation | | Safe Speed Limit Guidance for Utah | May-21 | Jun-23 | Ro402368 | \$40,000 |
| Scott, Michael | PI | Sandia National Laboratories | Department of Energy | Research into quadrature of Spline Based Simulations | Nov-20 | Sep-21 | Ro302975 | \$10,000 |
| Scott, Michael | PI | Sandia National Laboratories | Department of Energy | Research into quadrature of Spline Based Simulations | Nov-20 | Sep-21 | Ro302975 | \$20,000 |
| Williams, Gus | PI | Timpanogas Special Services District | State of Utah | Utah Lake Nutrient Cycling Studies: Phase I | Feb-21 | Feb-22 | Ro402369 | \$83,112 |
| Electrical and Computer Engineering | | | | | | | | |
| Beard, Randy | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112362 | \$5,000 |
| Beard, Randy | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112367 | \$20,000 |
| Beard, Randy | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112474 | \$10,500 |
| Beard, Randy | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site - REU | Mar-17 | Feb-22 | Ro112343 | \$16,000 |
| Beard, Randy | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site - REU | Mar-17 | Feb-22 | Ro112343 | \$10,000 |
| Beard, Randy | Co-PI | National Science Foundation | | MRI: Development of a Local Air Traffic Information System (LATIS) for UAS Collision Avoidance Research | Oct-17 | se2022 | Ro112473 | \$3,125 |

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| Beard, Randy | PI | Scientific Systems Company, Inc. | Air Force | AFX2oD-TCSO1 TITLE: Phase I Open Topic supporting Agility Prime: Open Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions | Jan-21 | Jun-21 | Ro302974 | \$22,588 |
| Beard, Randy | PI | ImSAR, LLC | Air Force | IMSAR Low-SWaP Sense and Avoid Solution for eVTOL / UAM Platforms | Dec-20 | May-21 | Ro302964 | \$27,589 |
| Beard, Randy | Co-PI | Scientific Systems Company, Inc. | Air Force | C-UAS Membership Dues | May-20 | Jun-22 | Ro302943 | \$33,000 |
| Beard, Randy | Co-PI | Scientific Systems Company, Inc. | Air Force | C-UAS Membership Dues | May-20 | Jun-22 | Ro302964 | \$11,000 |
| Beard, Randy | Co-PI | Utopia Compression | Air Force | RAPID: Airborne Visual Analytics (AVIAN) - C-UAS Membership Dues | Jun-19 | Feb-22 | Ro302879 | \$5,500 |
| Beard, Randy | Co-PI | Utopia Compression | Air Force | RAPID: Airborne Visual Analytics (AVIAN) - C-UAS Membership Dues | Jun-19 | Feb-22 | Ro302879 | \$5,500 |
| Beard, Randy | Co-PI | Utopia Compression | Air Force | RAPID: Airborne Visual Analytics (AVIAN) - C-UAS Membership Dues | Jun-19 | Feb-22 | Ro302879 | \$5,500 |
| Beard, Randy | Co-PI | Archer Aviation | Air Force | STTR: Precision Landing Localization technology for autonomous eVTOL | Feb-21 | Oct-21 | Ro303010 | \$37,419 |
| Beard, Randy | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Beard, Randy | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Beard, Randy | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Beard, Randy | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Beard, Randy | Co-PI | Insitu (A Boeing Company) | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$8,800 |
| Camacho, Ryan | PI | University of Arizona | National Science Foundation | Photonic Circuit Simulation for NSF Engineering Research Center for Quantum Networks (CQN) | Sep-20 | Aug-22 | Ro302961 | \$50,000 |
| Camacho, Ryan | PI | Oak Ridge National Laboratory | Department of Energy | Continuous Variable Integrated Quantum Photonics | Mar-21 | Jul-23 | Ro302977 | \$200,000 |
| Chiang, Shih-hua Wood | Co-PI | Oak Ridge National Laboratory | Department of Energy | Continuous Variable Integrated Quantum Photonics | Mar-21 | Aug-22 | Ro302977 | \$200,000 |
| Goeders, Jeff | Co-PI | National Science Foundation | | Phase-I- I/UCRC Brigham Young University: Center for Space, High-Performance, and Resilient Computing (SHREC) | Sep-17 | Aug-22 | Ro112363 | \$37,500 |

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| Goeders, Jeff | Co-PI | National Science Foundation | | Phase-I- I/UCRC Brigham Young University: Center for Space, High-Performance, and Resilient Computing (SHREC) - MIPR: Government Memberships | Sep-17 | Aug-22 | Ro112389 | \$13,200 |
| Goeders, Jeff | Co-PI | Pennsylvania State University | Defense Threat Reduction Agency | Interaction of Ionizing Radiation with Matter, University Research Alliance (IIRM-URA) | Jul-20 | Dec-21 | Ro302947 | \$51,000 |
| Goeders, Jeff | Co-PI | BAE Systems, Inc. | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Goeders, Jeff | Co-PI | Blue Origin, LLC | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Goeders, Jeff | Co-PI | L3Harris Technologies, Inc. Communication Systems-West | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Goeders, Jeff | Co-PI | Raytheon | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Goeders, Jeff | Co-PI | Raytheon | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Hutchings, Brad | Co-PI | National Science Foundation | | Phase-I- I/UCRC Brigham Young University: Center for Space, High-Performance, and Resilient Computing (SHREC) | Sep-17 | Aug-22 | Ro112363 | \$37,500 |
| Hutchings, Brad | Co-PI | National Science Foundation | | Phase-I- I/UCRC Brigham Young University: Center for Space, High-Performance, and Resilient Computing (SHREC) - MIPR: Government Memberships | Sep-17 | Aug-22 | Ro112389 | \$13,200 |
| Hutchings, Brad | Co-PI | BAE Systems, Inc. | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Hutchings, Brad | Co-PI | Blue Origin, LLC | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Hutchings, Brad | Co-PI | L3Harris Technologies, Inc. Communication Systems-West | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Hutchings, Brad | Co-PI | Raytheon | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Hutchings, Brad | Co-PI | Raytheon | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |

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| Lee, D.J. | PI | Smart Vision Works | | Artificial Intelligence for Detection of Foreign Materials in Food Products | Jun-21 | May-22 | Ro602662 | \$21,000 |
| Long, David | PI | National Aeronautics and Space Administration | | Consistency in the Scatterometer Climate Record | Oct-19 | Oct-22 | Ro162035 | \$150,300 |
| Long, David | PI | National Aeronautics and Space Administration | | Global L-band Active/Passive Observatory for Water Cycle Studies (GLOWS) | Feb-20 | Jan-23 | Ro162041 | \$100,863 |
| Long, David | PI | National Oceanic & Atmospheric Administration | | Operationalizing Ultra High Resolution Scatterometer Wind and Rain | Jun-20 | May-22 | Ro202548 | \$191,497 |
| Long, David | PI | Care Weather Technologies, LLC | Air Force | Care Weather scatterometer analysis | Apr-21 | Jun-21 | Ro302990 | \$15,060 |
| Long, David | PI | University of Colorado, Boulder | National Aeronautics and Space Administration | BYU support for NSIDC proposal for firm aquifers from SMAP | Mar-21 | Mar-24 | Ro303001 | \$45,722 |
| Long, David | PI | University of Utah | National Aeronautics and Space Administration | Utah Space Grant Consortium Proposal for National Space Grant College and Fellowship Program Opportunities in NASA STEM FY 2020-2024 | May-20 | May-22 | Ro302938 | \$83,000 |
| Mangelson, Joshua | PI | Office of Naval Research | Department of Defense | A re-configurable testbed for autonomous heterogeneous marine mapping, sensing, and search | Mar-21 | Mar-22 | Ro202550 | \$104,631 |
| Mangelson, Joshua | PI | Office of Naval Research | Department of Defense | A re-configurable testbed for autonomous heterogeneous marine mapping, sensing, and search | Mar-21 | Mar-22 | Ro202550 | \$104,631 |
| Mangelson, Joshua | PI | Office of Naval Research | Department of Defense | Cross-Modality Localization and Mapping | Apr-21 | Apr-24 | Ro202552 | \$184,775 |
| Mazzeo, Brian | Co-PI | Applied Minerals Inc. | Department of Energy | STTR Phase I: Domestic Halloysite-Derived Silicon as a Low-Cost High-Performance Anode Material for Li-Ion Batteries | Jun-21 | Jun-22 | Ro303036 | \$40,000 |
| Mazzeo, Brian | PI | Los Alamos National Laboratory | Department of Energy | Engineering Capstone Design Projects | Jun-21 | May-21 | Ro302968 | \$48,000 |
| Nelson, Brent | Co-PI | Office of Naval Research | Department of Defense | A re-configurable testbed for autonomous heterogeneous marine mapping, sensing, and search | Mar-21 | Mar-22 | Ro202550 | \$104,631 |
| Nelson, Brent | Co-PI | Office of Naval Research | Department of Defense | A re-configurable testbed for autonomous heterogeneous marine mapping, sensing, and search | Mar-21 | Mar-22 | Ro202550 | \$104,631 |
| Nelson, Brent | Co-PI | National Science Foundation | | Phase-I- I/UCRC Brigham Young University: Center for Space, High-Performance, and Resilient Computing (SHREC) | Sep-17 | Aug-22 | Ro112363 | \$37,500 |

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| Nelson, Brent | PI | GrammaTech | Office of Naval Research | Grammatech STTR Phase 2 - Bitstream Security | Jul-20 | Dec-21 | Ro302955 | \$86,524 |
| Nelson, Brent | PI | GrammaTech | Office of Naval Research | Grammatech STTR Phase 2 - Bitstream Security | Jul-20 | Dec-21 | Ro602555 | \$82,875 |
| Nelson, Brent | Co-PI | BAE Systems, Inc. | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Nelson, Brent | Co-PI | Blue Origin, LLC | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Nelson, Brent | Co-PI | L3Harris Technologies, Inc. Communication Systems-West | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Nelson, Brent | Co-PI | Raytheon | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Nelson, Brent | Co-PI | Raytheon | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Nordin, Greg | Co-PI | National Institutes of Health | | 3D-Printed Integrated Microfluidic Devices for Preterm Birth Biomarker Analysis | Jul-21 | Jun-22 | Ro102090 | \$84,213 |
| Nordin, Greg | PI | National Institutes of Health | | High Density 3D Printed Microfluidics for Cell-Based Biomedical Applications | Sep-20 | Aug-23 | Ro102108 | \$14,781 |
| Nordin, Greg | PI | University of Utah | National Science Foundation | Microfluidic Design Automation | Sep-21 | Aug-22 | Ro303032 | \$99,999 |
| Peterson, Cammy | Co-PI | Office of Naval Research | Department of Defense | A re-configurable testbed for autonomous heterogeneous marine mapping, sensing, and search | Mar-21 | Mar-22 | Ro202550 | \$104,631 |
| Peterson, Cammy | Co-PI | Office of Naval Research | Department of Defense | A re-configurable testbed for autonomous heterogeneous marine mapping, sensing, and search | Mar-21 | Mar-22 | Ro202550 | \$104,631 |
| Peterson, Cammy | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112367 | \$20,000 |
| Peterson, Cammy | Co-PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112474 | \$10,500 |
| Peterson, Cammy | PI | National Science Foundation | | MRI: Development of a Local Air Traffic Information System (LATIS) for UAS Collision Avoidance Research | Oct-17 | Sep-22 | Ro112473 | \$3,125 |
| Peterson, Cammy | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Peterson, Cammy | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Peterson, Cammy | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |

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| Peterson, Cammy | Co-PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$2,200 |
| Peterson, Cammy | Co-PI | Insitu (A Boeing Company) | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro602546 | \$8,800 |
| Rice, Michael | PI | L3Harris Technologies, Inc. Communication Systems-West | | Multi-antenna CDMA MRC Receiver | Jul-21 | Oct-21 | Ro602669 | \$19,686 |
| Schultz, Stephen | PI | Nielson Scientific, LLC | Army | Development and Testing of a Transparent Cryogenic Probe Card Based on Silicon Carbide MEMS | Feb-21 | Jun-21 | Ro302982 | \$214,548 |
| Schultz, Stephen | PI | Nielson Scientific, LLC | National Science Foundation | Integrated Development of CMB-S4 Low-Pass Filters Using a Scalable Proprietary Ablation Process | Jun-21 | Mar-22 | Ro303029 | \$18,860 |
| Schultz, Stephen | PI | Nielson Scientific, LLC | Army | Development and Testing of a Transparent Cryogenic Probe Card Based on Silicon Carbide MEMS | Feb-21 | Jun-21 | Ro302982 | \$16,112 |
| Smalley, Daniel | PI | National Science Foundation | | Breakthrough Display Technology as a New Medium for Spatial Thinking in STEM | Apr-19 | Mar-24 | Ro112399 | \$16,000 |
| Smalley, Daniel | PI | Light Field Lab, Inc. | | FENG Characterization & Transparent "Sell" Membrane Ultrasonic Transducers | Jul-18 | Oct-21 | Ro602573 | \$19,800 |
| Warnick, Karl | Co-PI | National Science Foundation | | MRI: Development of a Local Air Traffic Information System (LATIS) for UAS Collision Avoidance Research | Oct-17 | Sep-22 | Ro112473 | \$3,125 |
| Wirthlin, Mike | PI | National Science Foundation | | Phase-I- I/UCRC Brigham Young University: Center for Space, High-Performance, and Resilient Computing (SHREC) | Sep-17 | Aug-22 | Ro112363 | \$37,500 |
| Wirthlin, Mike | PI | National Science Foundation | | Phase-I- I/UCRC Brigham Young University: Center for Space, High-Performance, and Resilient Computing (SHREC) | Sep-17 | Aug-22 | Ro112378 | \$16,000 |
| Wirthlin, Mike | PI | National Science Foundation | | Phase-I- I/UCRC Brigham Young University: Center for Space, High-Performance, and Resilient Computing (SHREC) - MIPR: Government Memberships | Sep-17 | Aug-22 | Ro112389 | \$13,600 |
| Wirthlin, Mike | PI | Pennsylvania State University | Defense Threat Reduction Agency | Interaction of Ionizing Radiation with Matter, University Research Alliance (IIRM-URA) | Jul-20 | Dec-21 | Ro302947 | \$51,000 |
| Wirthlin, Mike | PI | BAE Systems, Inc. | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |

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| Wirthlin, Mike | PI | Blue Origin, LLC | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Wirthlin, Mike | PI | L3Harris Technologies, Inc. Communication Systems-West | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Wirthlin, Mike | PI | Raytheon | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Wirthlin, Mike | PI | Raytheon | | SHREC I/UCRC Industry Membership Dues | Sep-17 | Aug-22 | Ro602555 | \$10,000 |
| Manufacturing Engineering | | | | | | | | |
| George, Andy | PI | UES, Inc. | Air Force | Void formation and mortality during liquid composite molding using high temperature resins | May-21 | Jun-23 | Ro303011 | \$60,000 |
| George, Andy | PI | UES, Inc. | Air Force | Void formation and mortality during liquid composite molding using high temperature resins | May-21 | Jun-23 | Ro303011 | \$70,000 |
| George, Andy | PI | ElectraFly, LLC | Air Force Office of Scientific Research | STTR: Carbon-Fiber Infusion for ORB Aircraft Parts | Jan-21 | Jul-21 | Ro302989 | \$60,345 |
| George, Andy | PI | AnalySwift | Air Force Office of Scientific Research | STTR: Integrated computational blades engineering for rapid | Dec-20 | Jun-21 | Ro302970 | \$20,520 |
| Hovanski, Yuri | PI | National Aeronautics and Space Administration | National Aeronautics and Space Administration | Center for Friction Stir Processing Membership | Aug-20 | Aug-21 | Ro202544 | \$100,000 |
| Hovanski, Yuri | Co-PI | Office of Naval Research | Department of Defense | Investigation of friction stir additive repair techniques of AA7050 for naval applications | Jun-20 | Jun-23 | Ro202537 | \$115,591 |
| Hovanski, Yuri | PI | Pacific Northwest National Laboratory | Department of Energy | Center of Friction Stir Processing Membership | Sep-21 | Aug-22 | Ro303012 | \$50,000 |
| Hovanski, Yuri | PI | Bond Technologies, Inc. | | Center of Friction Stir Processing Membership | Dec-19 | Nov-20 | Ro602623 | \$6,250 |
| Hovanski, Yuri | PI | Bond Technologies, Inc. | | Center of Friction Stir Processing Membership | Dec-19 | Nov-20 | Ro602623 | \$35,000 |
| Hovanski, Yuri | PI | Northrop Grumman | | Mobile Smart Manufacturing Demonstrator | Jun-19 | Aug-22 | Ro602608 | \$75,000 |
| Miles, Michael | Co-PI | Office of Naval Research | Department of Defense | Investigation of friction stir additive repair techniques of AA7050 for naval applications | Jun-20 | Jun-23 | Ro202537 | \$115,591 |
| Miles, Michael | Co-PI | National Science Foundation | | Improving Friction Stir Welding: Quantifying Thermal Interfaces using Thermal Waves | Jan-20 | Dec-22 | Ro112431 | \$8,000 |
| Miles, Michael | Co-PI | National Science Foundation | | Improving Friction Stir Welding: Quantifying Thermal Interfaces using Thermal Waves | Jan-20 | Dec-22 | Ro112431 | \$8,000 |

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|--------------------------------------|-------|---|-------------------------------|---|---------|--------|----------|-------------|
| Miles, Michael | PI | National Aeronautics and Space Administration | | DEVELOPMENT OF A METHODOLOGY FOR CHARACTERIZING THE TOOL/PART INTERFACE IN FRICTION STIR WELDING FOR IMPROVEMENT OF | Jan-19 | Jan-22 | Ro162036 | \$49,526 |
| Miles, Michael | PI | National Science Foundation | | GOALI/Collaborative Research: Strain Gradient Plasticity Modeling to Link Microstructural Non-Local Effects of Dislocation/Interface Interactions with Ductility and Springback | Oct-19 | Sep-22 | Ro112432 | \$8,000 |
| Nelson, Tracy | Co-PI | National Aeronautics and Space Administration | | DEVELOPMENT OF A METHODOLOGY FOR CHARACTERIZING THE TOOL/PART INTERFACE IN FRICTION STIR WELDING FOR IMPROVEMENT OF | Jan-19 | Jan-22 | Ro162036 | \$48,069 |
| Nelson, Tracy | PI | Office of Naval Research | Department of Defense | Investigation of friction stir additive repair techniques of AA7050 for naval applications | Jun-20 | Jun-23 | Ro202537 | \$119,094 |
| <i>Mechanical Engineering</i> | | | | | | | | |
| Adams, Brad | Co-PI | National Science Foundation | | Collaborative Research: Network Cluster: Dust in the Critical Zone from the Great Basin to the Rocky Mountains | 9/20021 | Aug-22 | Ro112444 | \$70,023 |
| Adams, Brad | PI | Utah Division of Air Quality | | Development of a WRF-based Urban Canopy Model for Salt Lake Metro Area | Oct-21 | Aug-23 | Ro402375 | \$59,411 |
| Allen, Matt | PI | Kansas City National Security Campus | Department of Energy | Influence of Boundary Conditions in Smart Environmental Testing | Nov-21 | Aug-22 | Ro303030 | \$70,000 |
| Blotter, Jonathan | Co-PI | PhotoPharmics, Inc. | National Institutes of Health | Amelioration of opioid withdrawal-induced anxiety and craving with heterodyned whole body vibration | Jun-21 | Jun-22 | Ro303005 | \$62,678 |
| Bowden, Anton | PI | National Institutes of Health | | Arthritis, Musculoskeletal and Skin Diseases Research | Sep-21 | Aug-24 | Ro102114 | \$1,233,342 |
| Bowden, Anton | PI | Healix Spine | | Tri-axial Deployment Spinal Fusion Device | Jul-21 | Dec-21 | Ro602665 | \$12,500 |
| Bowden, Anton | PI | Healix Spine | | Tri-axial Deployment Spinal Fusion Device | Jul-21 | Dec-21 | Ro602665 | \$17,525 |
| Charles, Steven | PI | National Institutes of Health | | Predicting tremor: Developing a validated, subject-specific model of tremor | Aug-21 | Jul-24 | Ro102113 | \$444,507 |
| Cook, Douglas | PI | National Science Foundation | | CAREER: Combining Engineering, Biomechanics, and Genetic Analysis to Enable the Design of Structurally Superior Grain Crops | Apr-21 | Mar-26 | Ro112459 | \$8,000 |

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|-----------------|-------|--|---|---|--------|--------|----------|-----------|
| Cook, Douglas | PI | National Science Foundation | | CAREER: Combining Engineering, Biomechanics, and Genetic Analysis to Enable the Design of Structurally Superior Grain Crops | Apr-21 | Mar-26 | Ro112462 | \$8,000 |
| Cook, Douglas | PI | National Science Foundation | | CAREER: Crop Biomechanics - Toward the Design of Superior Crop Architecture | Apr-21 | Mar-26 | Ro112459 | \$624,188 |
| Cook, Douglas | PI | Bayer | | Continuation: Maize Stalk Strength (Bayer Grant, transferred from NYU) | Jul-21 | Jun-22 | Ro602668 | \$25,198 |
| Crane, Nathan | PI | National Science Foundation | | Collaborative Research: Modulating Powder Bed Cohesion to Reduce Defects in Binder Jetting | Aug-20 | Jul-23 | Ro112455 | \$8,000 |
| Crane, Nathan | PI | National Science Foundation | | Could Slower Be Better? Assessing Sintering Time, Temperature, and Area Tradeoffs in Polymer Sintering | Aug-18 | Jan-22 | Ro112411 | \$8,000 |
| Crane, Nathan | PI | National Science Foundation | | Could Slower Be Better? Assessing Sintering Time, Temperature, and Area Tradeoffs in Polymer Sintering | Aug-18 | Jan-22 | Ro112422 | \$30,259 |
| Fullwood, David | Co-PI | National Science Foundation | | GOALI/Collaborative Research: Strain Gradient Plasticity Modeling to Link Microstructural Non-Local Effects of Dislocation/Interface Interactions with Ductility and Springback | Oct-19 | Sep-22 | Ro112432 | \$8,000 |
| Gorrell, Steve | PI | University of Utah | National Aeronautics and Space Administration | Utah Space Grant Consortium Proposal for National Space Grant College and Fellowship Program Opportunities in NASA STEM FY 2020-2024 | May-20 | May-22 | Ro302996 | \$6,000 |
| Gorrell, Steve | PI | OpenTeams | | Analysis of a Large Turbomachinery Database Using Open Source Tool | Oct-21 | Sep-22 | Ro602674 | \$10,000 |
| Gorrell, Steve | Co-PI | Concepts NREC | | CFD Study of a Wide Flow Range Turbocharger Compressor | Nov-22 | Dec-22 | Ro602672 | \$10,000 |
| Homer, Eric | PI | Department of Energy | | Computational and Experimental Investigation of Cryogenic Grain Boundary Motion for Enhanced Mechanical Behavior and Properties | Aug-21 | Jul-22 | Ro202473 | \$183,414 |
| Howell, Larry | Co-PI | Florida International University | Air Force Office of Scientific Research | Transforming Antennas Center (TAC) | Aug-19 | Aug-24 | Ro302882 | \$75,000 |
| Howell, Larry | Co-PI | Science Systems and Applications, Inc. | National Aeronautics and Space Administration | Conceptual Design and Prototyping of Origami-Based Deployable Systems for LIDAR Telescopes | Jul-20 | Mar-22 | Ro302931 | \$10,615 |
| Howell, Larry | Co-PI | Science Systems and Applications, Inc. | National Aeronautics and Space Administration | Conceptual Design and Prototyping of Origami-Based Deployable Systems for LIDAR Telescopes | Jul-20 | Mar-22 | Ro302931 | \$10,000 |

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|---------------------|-------|--|--|---|--------|--------|----------|-----------|
| Howell, Larry | PI | VentureWell | | LaparoVision: Eliminating Visual Disruption in Laparoscopic Surgery | Jun-21 | Mar-22 | Ro502349 | \$5,000 |
| Howell, Larry | Co-PI | Healix Spine | | Tri-axial Deployment Spinal Fusion Device | Jul-21 | Sep-22 | Ro602665 | \$17,525 |
| Howell, Larry | Co-PI | Healix Spine | | Tri-axial Deployment Spinal Fusion Device | Jul-21 | Dec-21 | Ro602665 | \$12,500 |
| Iverson, Brian | PI | National Aeronautics and Space Administration | | Passively Actuated, Triangular Fin Array for CubeSat Thermal Control | Aug-21 | Aug-23 | Ro162043 | \$69,500 |
| Jensen, Brian | Co-PI | Tula Health, Inc | | TULA health - Non- Invasive health sensing | Apr-21 | Mar-22 | Ro602659 | \$100,000 |
| Johnson, Oliver | PI | National Science Foundation | | CAREER: CDS&E: Quantifying & Designing Grain Boundary Network Structure via Spectral Graph Theory | Jun-17 | May-22 | Ro112336 | \$71,103 |
| Killpack, Marc | PI | University of Utah | National Aeronautics and Space Administration | Utah Space Grant Consortium Proposal for National Space Grant College and Fellowship Program Opportunities in NASA STEM FY 2020- 2024 | May-20 | May-22 | Ro302997 | \$6,020 |
| Magleby, Spencer | PI | Florida International University | Air Force Office of Scientific Research | Transforming Antennas Center (TAC) | Aug-19 | Aug-24 | Ro302882 | \$75,000 |
| Magleby, Spencer | PI | Science Systems and Applications, Inc. | National Aeronautics and Space Administration | Conceptual Design and Prototyping of Origami- Based Deployable Systems for LIDAR Telescopes | Jul-20 | Mar-22 | Ro302931 | \$10,615 |
| Magleby, Spencer | PI | Science Systems and Applications, Inc. | National Aeronautics and Space Administration | Conceptual Design and Prototyping of Origami- Based Deployable Systems for LIDAR Telescopes | Jul-20 | Mar-22 | Ro302931 | \$10,000 |
| Mattson, Chris | PI | United States Air Force Academy | Department of Defense | Promoting Desirability and Transferability in Engineering Design through Customized Development Processes | May-19 | Sep-21 | Ro202505 | \$6,061 |
| Mattson, Chris | PI | United States Air Force Academy | Department of Defense | Effective Use of Product Architecture to Help Engineering Teams Manage Complexity in the Design Process | Oct-21 | Sep-25 | Ro202564 | \$51,439 |
| Maynes, Daniel | PI | Concepts NREC | | CFD Study of a Wide Flow Range Turbocharger Compressor | Nov-21 | Dec-21 | Ro602672 | \$10,000 |
| Maynes, Daniel | Co-PI | OpenTeams | National Aeronautics and Space Administration | Analysis of a Large Turbomachinery Database Using Open Source Tool | Oct-21 | Sep-22 | Ro602675 | \$10,000 |
| McLain, Tim | PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112362 | \$5,000 |
| McLain, Tim | PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112367 | \$20,000 |

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|-------------|-------|---|-----------------------------|---|--------|--------|----------|----------|
| McLain, Tim | PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site | Mar-17 | Feb-22 | Ro112474 | \$10,500 |
| McLain, Tim | PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site - AFRL Munitions Add-on | Mar-17 | Feb-22 | Ro112355 | \$50,000 |
| McLain, Tim | PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site - Interagency Memberships | Mar-17 | Feb-22 | Ro112353 | \$81,332 |
| McLain, Tim | PI | National Science Foundation | | I/UCRC: Center for Unmanned Aircraft Systems, Phase II Site - REU | Mar-17 | Feb-22 | Ro112343 | \$16,000 |
| McLain, Tim | Co-PI | National Science Foundation | | MRI: Development of a Local Air Traffic Information System (LATIS) for UAS Collision Avoidance Research | Oct-17 | Sep-22 | Ro112473 | \$3,125 |
| McLain, Tim | PI | Scientific Systems Company, Inc. | Air Force | C-UAS Membership Dues | May-20 | Jun-22 | Ro302943 | \$11,000 |
| McLain, Tim | PI | Scientific Systems Company, Inc. | Air Force | C-UAS Membership Dues | May-20 | Jun-22 | Ro302943 | \$33,000 |
| McLain, Tim | PI | Utopia Compression | Air Force | RAPID: Airborne Visual Analytics (AVIAN) - C-UAS Membership Dues | Jun-19 | Feb-22 | Ro302879 | \$5,500 |
| McLain, Tim | PI | Utopia Compression | Air Force | RAPID: Airborne Visual Analytics (AVIAN) - C-UAS Membership Dues | Jun-19 | Feb-22 | Ro302879 | \$5,500 |
| McLain, Tim | PI | Utopia Compression | Air Force | RAPID: Airborne Visual Analytics (AVIAN) - C-UAS Membership Dues | Jun-19 | Feb-22 | Ro302879 | \$5,500 |
| McLain, Tim | PI | Archer Aviation | Air Force | STTR: Precision Landing Localization technology for autonomous eVTOL | Feb-21 | Oct-21 | Ro303010 | \$37,419 |
| McLain, Tim | PI | University of Colorado, Boulder | National Science Foundation | Center for Unmanned Aircraft Systems Phase II, Managing Director Support | Apr-21 | Mar-22 | Ro302750 | \$39,912 |
| McLain, Tim | PI | Virginia Polytechnic Institute and State University | National Science Foundation | I/UCRC: Center for Unmanned Aircraft Systems Phase II, Managing Director Support | Mar-17 | Feb-22 | Ro302761 | \$40,910 |
| McLain, Tim | PI | Texas A&M University | National Science Foundation | Phase II IUCRC Texas A&M University: Center for Unmanned Air Systems C-UAS | Mar-20 | Feb-22 | Ro302953 | \$39,627 |
| McLain, Tim | PI | University of Michigan | National Science Foundation | Phase II IUCRC University of Michigan: Center for Unmanned Aircraft Systems (C-UAS) | Sep-17 | Aug-21 | Ro302777 | \$37,753 |
| McLain, Tim | Co-PI | Scientific Systems Company, Inc. | Air Force | AFX20D-TCSO1 TITLE: Phase I Open Topic supporting Agility Prime: Open Call for Innovative Defense-Related Dual-Purpose Technologies/Solutions | Jan-21 | Jun-21 | Ro302974 | \$22,588 |
| McLain, Tim | Co-PI | ImSAR, LLC | Air Force | IMSAR Low-SWaP Sense and Avoid Solution for eVTOL / UAM Platforms | Dec-20 | May-21 | Ro302964 | \$27,589 |

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|--------------|----|---|----------------------|---|--------|--------|----------|-----------|
| McLain, Tim | PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro302546 | \$2,200 |
| McLain, Tim | PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro302546 | \$2,200 |
| McLain, Tim | PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro302546 | \$2,200 |
| McLain, Tim | PI | AeroVironment | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro302546 | \$2,200 |
| McLain, Tim | PI | Insitu (A Boeing Company) | | C-UAS I/UCRC Phase II Industry Sponsors | Mar-17 | Feb-22 | Ro302546 | \$8,800 |
| Munro, Troy | PI | National Science Foundation | | EAGER: Feasibility of Parallelized Measurements of Kapitza Resistance | Aug-21 | Jul-22 | Ro112464 | \$149,977 |
| Munro, Troy | PI | National Science Foundation | | Improving Friction Stir Welding: Quantifying Thermal Interfaces using Thermal Waves | Jan-20 | Dec-22 | Ro112431 | \$8,000 |
| Munro, Troy | PI | National Science Foundation | | Improving Friction Stir Welding: Quantifying Thermal Interfaces using Thermal Waves | Jan-20 | Dec-22 | Ro112431 | \$8,000 |
| Munro, Troy | PI | Idaho National Laboratory | Department of Energy | Development of a Diamond Substrate-based Hot-Wire Sensor for Irradiated Molten Salt Thermal Conductivity Measurements | Jul-20 | Jun-21 | Ro302926 | \$36,000 |
| Ning, Andrew | PI | Whisper Aero | Air Force | STTR. eVTOL Acoustic Design Framework Development | Dec-20 | Jun-21 | Ro302981 | \$45,000 |
| Ning, Andrew | PI | National Renewable Energy Laboratory | Department of Energy | 2022 U.S. Department of Energy Collegiate Wind Competition | May-21 | Jul-22 | Ro302991 | \$20,000 |
| Ning, Andrew | PI | National Renewable Energy Laboratory | Department of Energy | Advanced Numerical and Physics Modeling for Wind Plant Array Optimization | Oct-21 | Sep-22 | Ro303024 | \$119,999 |
| Ning, Andrew | PI | Rutgers, The State University of New Jersey | Department of Energy | Computationally Efficient Atmospheric-Data-Driven Control Co-Design Optimization Framework with Mixed-Fidelity Fluid and Structure Analysis | Feb-21 | Jan-22 | Ro302909 | \$120,580 |
| Ning, Andrew | PI | Rutgers, The State University of New Jersey | Department of Energy | Computationally Efficient Atmospheric-Data-Driven Control Co-Design Optimization Framework with Mixed-Fidelity Fluid and Structure Analysis | Feb-20 | Jan-22 | Ro302909 | \$60,000 |
| Ning, Andrew | PI | National Renewable Energy Laboratory | Department of Energy | DOE Collegiate Wind Competition | Aug-20 | Dec-21 | Ro302985 | \$20,000 |
| Ning, Andrew | PI | National Renewable Energy Laboratory | Department of Energy | Multidisciplinary Optimization and Uncertainty Qualification of Wind Energy Systems | Dec-20 | Sep-21 | Ro302778 | \$95,000 |

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|-----------------------------|-------|---|---|---|--------|--------|----------|-----------|
| Ning, Andrew | PI | University of California- San Diego | National Aeronautics and Space Administration | Rapid development of urban air mobility vehicle concepts throughfull-configuration multidisciplinary design, analysis, and optimization | Oct-21 | Sep-25 | Ro303031 | \$230,000 |
| Sorensen, Carl | Co-PI | United States Air Force Academy | Department of Defense | Promoting Desirability and Transferability in Engineering Design through Customized Development Processes | May-19 | Sep-21 | Ro202505 | \$6,061 |
| Sorensen, Carl | Co-PI | National Aeronautics and Space Administration | | DEVELOPMENT OF A METHODOLOGY FOR CHARACTERIZING THE TOOL/PART INTERFACE IN FRICTION STIR WELDING FOR IMPROVEMENT OF | Jan-19 | Jan-22 | Ro162036 | \$48,069 |
| Sorensen, Carl | Co-PI | United States Air Force Academy | Department of Defense | Effective Use of Product Architecture to Help Engineering Teams Manage Complexity in the Design Process | Oct-21 | Sep-25 | Ro202564 | \$51,439 |
| Sorensen, Carl | PI | Innovative Scientific Solutions Inc. | Air Force Research Laboratory | Ceramic Turbine Integration | Jan-21 | May-21 | Ro302973 | \$22,000 |
| Sorensen, Carl | PI | Innovative Scientific Solutions Inc. | Air Force Research Laboratory | Turbine Nozzle Traversing Probe | Sep-21 | May-22 | Ro303026 | \$22,000 |
| Sorensen, Carl | PI | Sandia National Laboratories | Department of Energy | Capstone BYU project- Assessment of Two Machine Learning Algorithms for the xView Dataset | Dec-20 | May-21 | Ro303008 | \$88,951 |
| Sorensen, Carl | PI | Idaho National Laboratory | Department of Energy | Development of a nuclear fuel rod profilometry device | Jan-21 | Apr-21 | Ro302979 | \$27,000 |
| Sorensen, Carl | PI | Idaho National Laboratory | Department of Energy | Malcolm Network Forensic Tool IDS Integration Development | Sep-21 | Apr-22 | Ro303019 | \$22,000 |
| Sorensen, Carl | PI | Sandia National Laboratories | Department of Energy | Prototype Impact Tester | Jan-21 | Jun-21 | Ro303006 | \$5,000 |
| Sorensen, Carl | PI | Idaho National Laboratory | Department of Energy | THOR Capsule Unloading Fixture | Sep-21 | Apr-22 | Ro303021 | \$25,000 |
| Thomson, Scott | PI | National Institutes of Health | | Imaging and Influence of Glottic and Subglottic Anatomy in healthy and stenotic patients | Sep-20 | Aug-22 | Ro102087 | \$524,360 |
| Thomson, Scott | PI | McGill University | National Institutes of Health | Bioprintable composite materials and microfluidic tools for vocal fold restoration and repair | Jan-21 | Dec-21 | Ro302965 | \$136,702 |
| School of Technology | | | | | | | | |
| Bartholomew, Scott | PI | Purdue University | National Science Foundation | Learning by evaluating (LbE): Engaging students in evaluation as a pedagogical | Aug-21 | Jul-24 | Ro303035 | \$159,141 |
| Giboney, Justin | Co-PI | Sandia National Laboratories | Department of Energy | Sandia cybersecurity camp sponsorship | Jul-21 | Sep-21 | Ro303015 | \$9,900 |

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|-------------------|-------|--|-----------------------------------|--|--------|--------|----------|----------|
| Hansen, Derek | PI | Sandia National Laboratories | Department of Energy | Sandia cybersecurity camp sponsorship | Jul-21 | Sep-21 | Ro303015 | \$10,200 |
| Hughes, Amanda | Co-PI | National Aeronautics and Space Administration | | Improving Resiliency and Reducing Risk due to Extreme Hydrologic Events through Application of Earth Observations and In-Situ Monitoring Information | Nov-19 | Oct-22 | Ro162040 | \$81,318 |
| Hughes, Amanda | PI | Clemson University | National Science Foundation | SCC-PG: Human-AI Teaming for Flood Evacuation Decision Making | Oct-21 | Sep-22 | Ro303028 | \$24,668 |



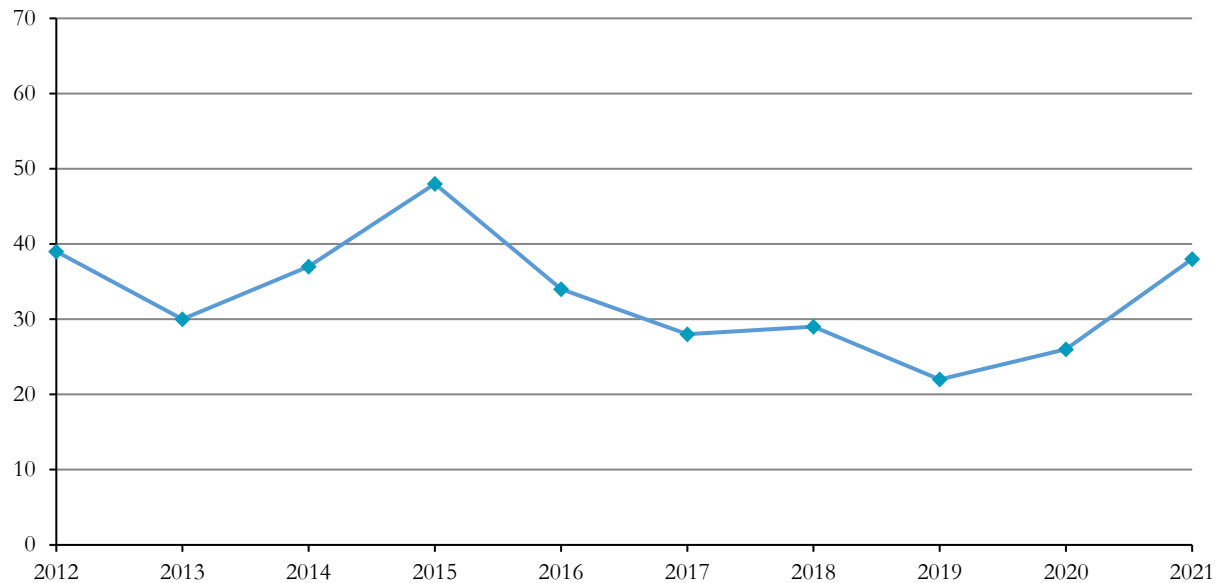
**College of Family,
Home, & Social
Sciences**

Spencer W. Kimball
Tower

Summary by Departments

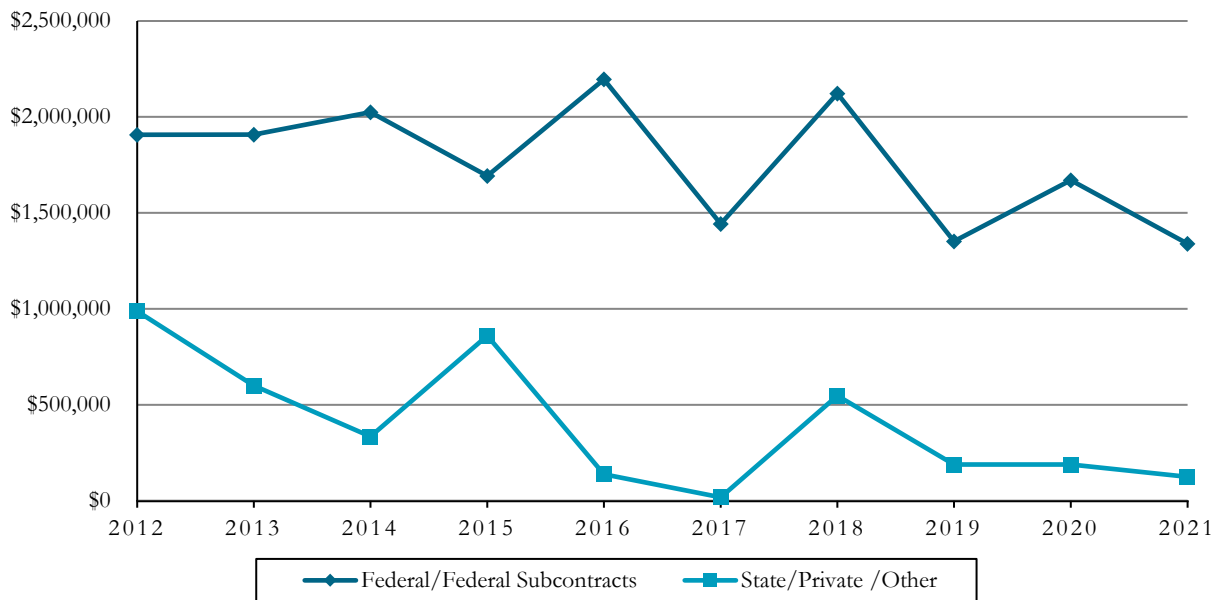
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|------------------------------|-------------------------|--------------------------|-------------|-----------------|
| Anthropology | 2 | 2 | 1 | \$30,140 |
| Economics | 5 | 14 | 6 | \$312,010 |
| Geography | 2 | 2 | 1 | \$11,736 |
| History | 3 | 4 | 5 | \$460,582 |
| Museum of Peoples & Cultures | 0 | 0 | 0 | \$0 |
| Office of Public Archaeology | 0 | 0 | 0 | \$0 |
| Political Science | 1 | 1 | 2 | \$466,119 |
| Psychology | 7 | 10 | 2 | \$153,097 |
| School of Family Life | 3 | 3 | 0 | \$0 |
| School of Social Work | 1 | 1 | 1 | \$18,017 |
| Sociology | 1 | 1 | 1 | \$12,198 |
| TOTALS | 25 | 38 | 19 | \$1,463,898 |

Proposal Submissions



Awards by Sources

| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|-------------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$1,907,383 | \$987,853 | \$2,564,522 |
| 2013 | \$1,908,007 | \$600,123 | \$2,377,935 |
| 2014 | \$2,024,525 | \$334,700 | \$2,359,225 |
| 2015 | \$1,692,729 | \$859,560 | \$2,552,289 |
| 2016 | \$2,196,122 | \$137,839 | \$2,333,961 |
| 2017 | \$1,442,760 | \$18,636 | \$1,461,396 |
| 2018 | \$2,121,801 | \$547,574 | \$2,669,375 |
| 2019 | \$1,351,545 | \$188,421 | \$1,539,966 |
| 2020 | \$1,669,813 | \$188,847 | \$1,858,660 |
| 2021 | \$1,339,532 | \$124,366 | \$1,463,898 |



College of Family, Home, & Social Sciences 2021 Awards

| <u>Researcher</u> | <u>Role</u> | <u>Sponsor</u> | <u>Prime Sponsor</u> | <u>Title</u> | <u>Beg Date</u> | <u>End Date</u> | <u>Account</u> | <u>Amount</u> |
|----------------------------|-------------|---|---------------------------------|--|-----------------|-----------------|----------------|---------------|
| <i>Anthropology</i> | | | | | | | | |
| Allison, Jim | PI | School and Institutional Trust Lands Administration | | Coal Bed Village Excavation | Jun-21 | Dec-25 | R0402372 | \$30,140 |
| <i>Economics</i> | | | | | | | | |
| Denning, Jeff | PI | Columbia University | Arnold Ventures | The Effect of Graduate PLUS Student Loan Increases on Access, Program Prices, Student Debt, and Labor Market Outcomes | Jan-21 | Dec-21 | R0502346 | \$25,976 |
| Pope, Arden | PI | Carnegie Mellon University | Environmental Protection Agency | Center for Air, Climate, and Energy Solutions (CASES) | May-16 | Apr-21 | R0302696 | \$20,000 |
| Pope, Arden | PI | University of Louisville | National Institutes of Health | Endothelial progenitor cells and particulate air pollution | Apr-20 | Mar-22 | R0302786 | \$60,624 |
| Price, Joe | PI | Department of Agriculture | | Differences in School Meal Nutritional Characteristics Under the SBP/NSLP Standards and the Summer Food Service Program During Period of COVID-related Waivers | Jul-21 | May-23 | R0152021 | \$35,000 |
| Price, Joe | PI | Colorado School of Mines | National Science Foundation | Property, People, and Progress along Frontiers: How Land Policy Impacts Selection and Outcomes | Sep-21 | Aug-24 | R0303023 | \$143,160 |
| Price, Joe | PI | University of Toronto | | Solving the 2 Sigma Problem with Khan Academy: A Pilot Study | Jul-20 | Dec-21 | R0502347 | \$27,250 |
| <i>Geography</i> | | | | | | | | |
| Bekker, Matt | PI | Utah State University | National Science Foundation | Hydroclimate Variability and the Evolution of Socioecological Complexity in Dryland Farming Communities | Aug-21 | Aug-22 | R0303022 | \$11,736 |
| <i>History</i> | | | | | | | | |
| Cannon, Brian | PI | The Church of Jesus Christ of Latter-day Saints | | Ottoman Census of Palestine Index/Research | May-21 | Dec-21 | R0702020 | \$17,500 |
| Crandell, Jill | PI | University of Wisconsin, Madison | Department of Defense | Defense POW/MIA Accounting Agency Repatriation Project | Sep-19 | Sep-22 | R0302894 | \$75,000 |
| Crandell, Jill | PI | University of Washington | | Linking Families for Cancer Prevention | Aug-21 | Jul-22 | R0802048 | \$6,000 |

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|------------------------------|-------|---|-------------------------------|---|--------|--------|----------|-----------|
| McCollum, Jonathon | Co-PI | The Church of Jesus Christ of Latter-day Saints | | Ottoman Census of Palestine Index/Research | May-21 | Dec-21 | R0702020 | \$17,500 |
| Shumway, Jeffrey | PI | University of Utah | Department of Education | Intermountain Consortium for Latin American Studies Undergraduate FLAS Program | Aug-18 | Aug-22 | R0302823 | \$279,000 |
| Shumway, Jeffrey | PI | University of Utah | Department of Education | Intermountain Consortium for Latin American Studies Undergraduate NRC and FLAS programs (NRC) | Aug-18 | Aug-22 | R0302839 | \$65,582 |
| Political Science | | | | | | | | |
| Argyle, Lisa | Co-PI | National Science Foundation | | EAGER: Harnessing Accurate Bias in Large-Scale Language Models | Sep-21 | Feb-23 | R0112468 | \$24,292 |
| Busby, Ethan | Co-PI | National Science Foundation | | EAGER: Harnessing Accurate Bias in Large-Scale Language Models | Sep-21 | Feb-23 | R0112468 | \$24,292 |
| Gubler, Joshua | Co-PI | National Science Foundation | | EAGER: Harnessing Accurate Bias in Large-Scale Language Models | Sep-21 | Feb-23 | R0112468 | \$24,292 |
| Hyer, Eric | PI | University of Utah | Department of Education | Intermountain Consortium for Asian and Pacific Studies Undergraduate FLAS Program | Aug-18 | Aug-22 | R0302824 | \$289,500 |
| Hyer, Eric | PI | University of Utah | Department of Education | Intermountain Consortium for Asian and Pacific Studies Undergraduate NRC and FLAS Programs (NRC) | Aug-19 | Aug-22 | R0302829 | \$103,744 |
| Psychology | | | | | | | | |
| Kirwan, Brock | Co-PI | Temple University | National Science Foundation | SaTC: CORE: Small: The Blurring of Non-essential Notifications and Critical Security Warnings: Examining the Problem of Generalization in the Brain | Sep-18 | Aug-21 | R0302878 | \$6,878 |
| Steffensen, Scott | PI | National Institutes of Health | | Novel methods of acupuncture delivery in the treatment of drug-abuse disorders | Jan-21 | Dec-21 | R0102092 | \$81,642 |
| Steffensen, Scott | PI | PhotoPharmics, Inc. | National Institutes of Health | Amelioration of opioid withdrawal-induced anxiety and craving with heterodyned whole body vibration | Jun-21 | Jun-22 | R0303005 | \$64,577 |
| School of Social Work | | | | | | | | |
| Clark, Charlene | PI | Utah Commission on Service and Volunteerism | | AmeriCorps Program 2021-2022 | Aug-21 | Jul-22 | R0303018 | \$18,017 |
| Sociology | | | | | | | | |
| Ward, Carol | PI | Chief Dull Knife College | National Science Foundation | Evaluation of CDKC project: Research Engagement Across Curricular Tracks | Oct-21 | Sep-22 | R0302636 | \$12,198 |

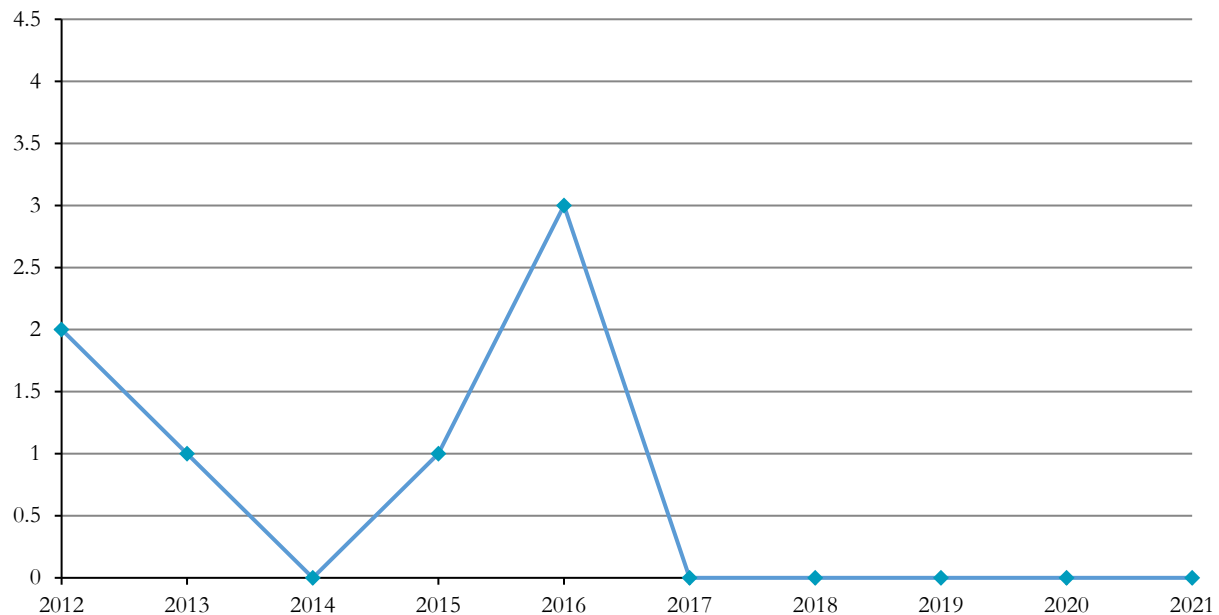


College of Fine Arts & Communications

Summary by Departments

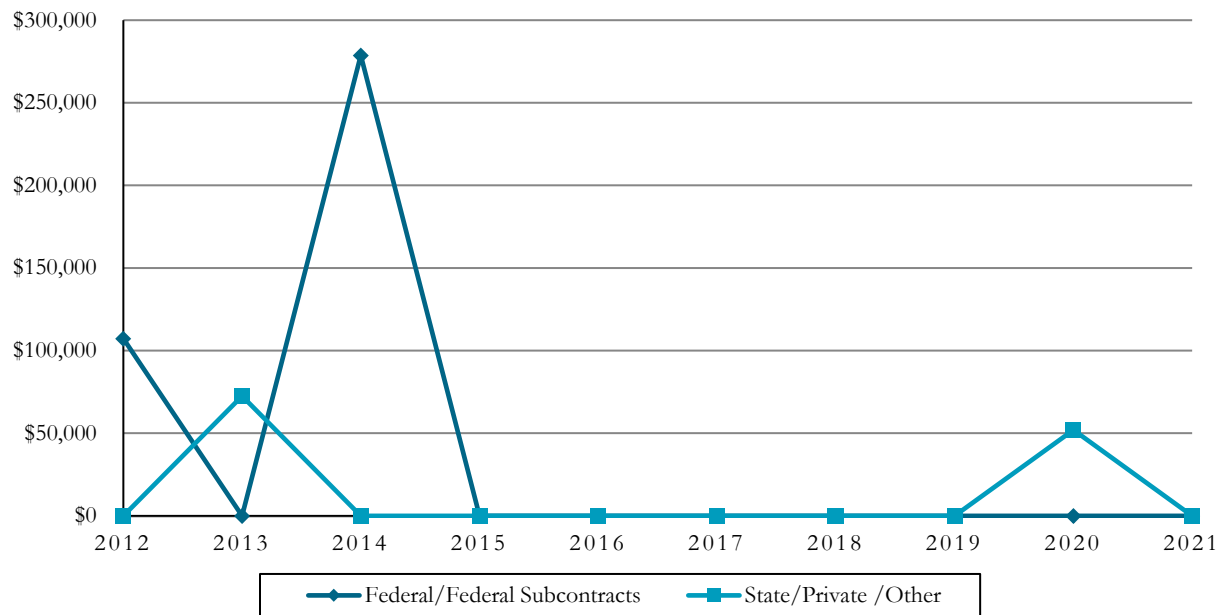
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|----------------------|-------------------------|--------------------------|-------------|-----------------|
| Art | 0 | 0 | 0 | \$0 |
| Communications | 0 | 0 | 0 | \$0 |
| Dance | 0 | 0 | 0 | \$0 |
| Design | 0 | 0 | 0 | \$0 |
| School of Music | 0 | 0 | 0 | \$0 |
| Theatre & Media Arts | 0 | 0 | 0 | \$0 |
| TOTALS | 0 | 0 | 0 | \$0 |

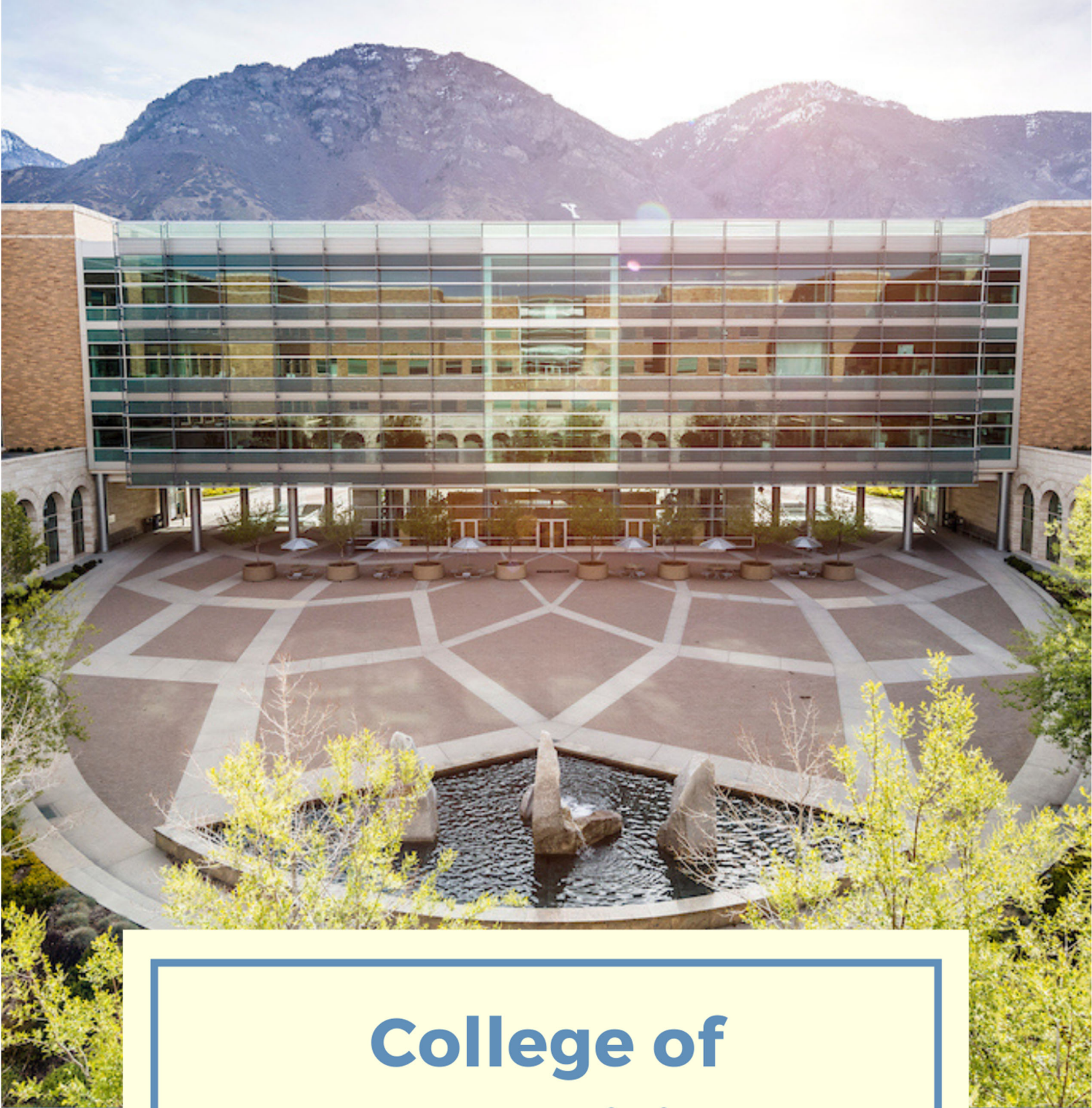
Proposal Submissions



Awards by Sources

| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|-----------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$107,250 | \$0 | \$107,250 |
| 2013 | \$0 | \$72,500 | \$72,500 |
| 2014 | \$278,688 | \$0 | \$278,688 |
| 2015 | \$0 | \$0 | \$0 |
| 2016 | \$0 | \$0 | \$0 |
| 2017 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 |
| 2019 | \$0 | \$0 | \$0 |
| 2020 | \$0 | \$51,938 | \$51,938 |
| 2021 | \$0 | \$0 | \$0 |



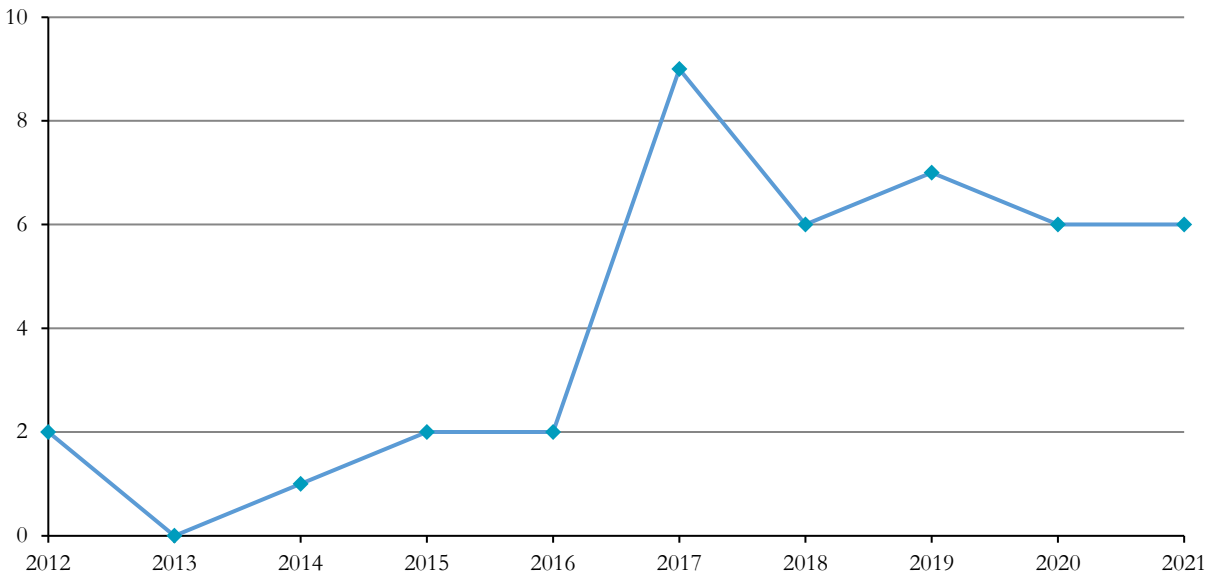


College of Humanities

Summary by Departments

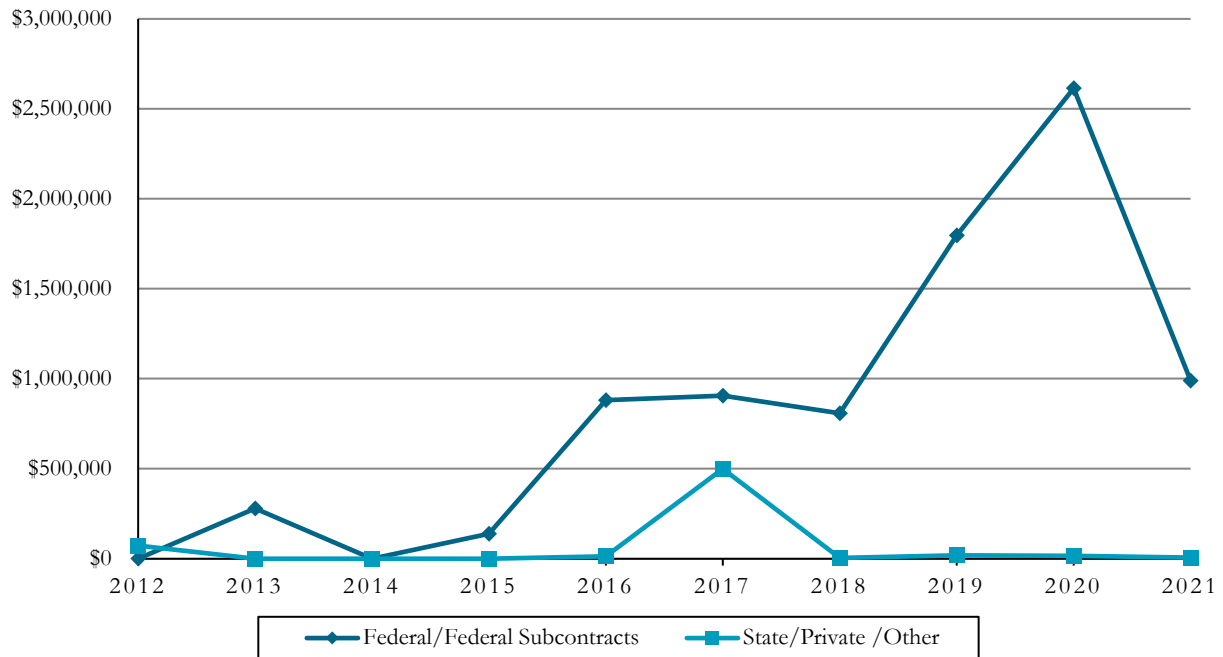
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|--------------------------------|-------------------------|--------------------------|-------------|-----------------|
| Asian & Near Eastern Languages | 3 | 6 | 7 | \$939,267 |
| Comparative Arts & Letters | 0 | 0 | 2 | \$5,372 |
| English | 0 | 0 | 0 | \$0 |
| French & Italian | 0 | 0 | 0 | \$0 |
| German & Russian | 0 | 0 | 0 | \$0 |
| Linguistics | 0 | 0 | 0 | \$0 |
| Philosophy | 0 | 0 | 0 | \$0 |
| Spanish & Portuguese | 0 | 0 | 0 | \$0 |
| TOTALS | 3 | 6 | 9 | \$944,640 |

Proposal Submissions



Awards by Sources

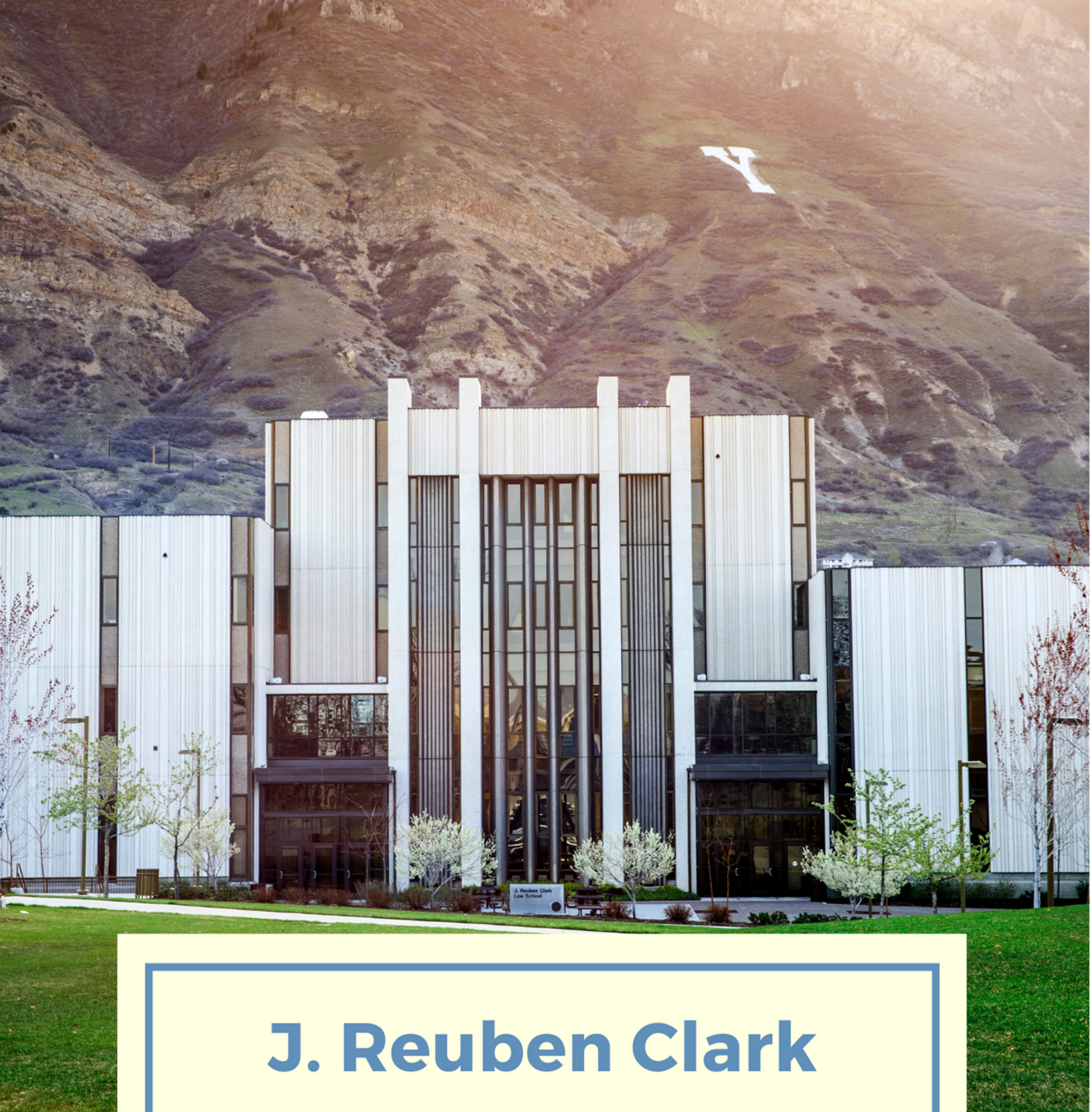
| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|-------------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$0 | \$72,500 | \$72,500 |
| 2013 | \$278,688 | \$0 | \$278,688 |
| 2014 | \$0 | \$0 | \$0 |
| 2015 | \$137,798 | \$0 | \$137,798 |
| 2016 | \$880,583 | \$12,320 | \$892,903 |
| 2017 | \$904,942 | \$499,520 | \$1,403,942 |
| 2018 | \$807,501 | \$4,000 | \$811,501 |
| 2019 | \$1,795,832 | \$18,000 | \$1,813,832 |
| 2020 | \$2,613,986 | \$15,453 | \$2,629,438 |
| 2021 | \$939,268 | \$5,372 | \$944,640 |



College of Humanities

2021 Awards

| <u>Researcher</u> | <u>Role</u> | <u>Sponsor</u> | <u>Prime Sponsor</u> | <u>Title</u> | <u>Beg Date</u> | <u>End Date</u> | <u>Account</u> | <u>Amount</u> |
|--|-------------|---------------------------------------|-------------------------------------|--|-----------------|-----------------|----------------|---------------|
| <i>Asian & Near Eastern Languages</i> | | | | | | | | |
| Belnap, Kirk | PI | Institute of International Education | Department of Defense | Arabic Flagship Center Student Support 21-22 | Mar-21 | Feb-22 | R0303002 | \$60,000 |
| Belnap, Kirk | PI | Institute of International Education | National Security Education Program | Arabic Flagship Center-Domestic FY 21-22 | Jun-21 | Mar-22 | R0302999 | \$324,997 |
| Belnap, Kirk | PI | Institute of International Education | National Security Education Program | Arabic Flagship Center 2020-2021 | Jun-20 | May-21 | R0302914 | \$54,135 |
| Christensen, Matthew | PI | Institute of International Education | Department of Defense | Chinese Flagship Center Student Support 20-21 | Apr-20 | Mar-21 | R0302908 | \$14,233 |
| Christensen, Matthew | PI | Institute of International Education | Department of Defense | Chinese Flagship Center Student Support 20-21 | Mar-21 | Feb-22 | R0303003 | \$106,750 |
| Christensen, Matthew | PI | Institute of International Education | National Security Education Program | BYU Domestic Chinese Flagship Program 2020-2021 | Jun-20 | Mar-21 | R0302913 | \$54,155 |
| Christensen, Matthew | PI | Institute of International Education | National Security Education Program | Chinese Flagship Center-Domestic FY 21-22 | Jun-21 | Mar-22 | R0303000 | \$324,997 |
| <i>Comparative Arts & Letters</i> | | | | | | | | |
| Kramer, Nate | PI | Finnish National Agency for Education | | Support for the Teaching of Finnish Language and Culture | Jan-20 | Dec-21 | R0570032 | \$2,770 |
| Kramer, Nate | PI | Finnish National Agency for Education | | Support for the Teaching of Finnish Language and Culture | Jan-20 | Dec-21 | R0570032 | \$2,602 |

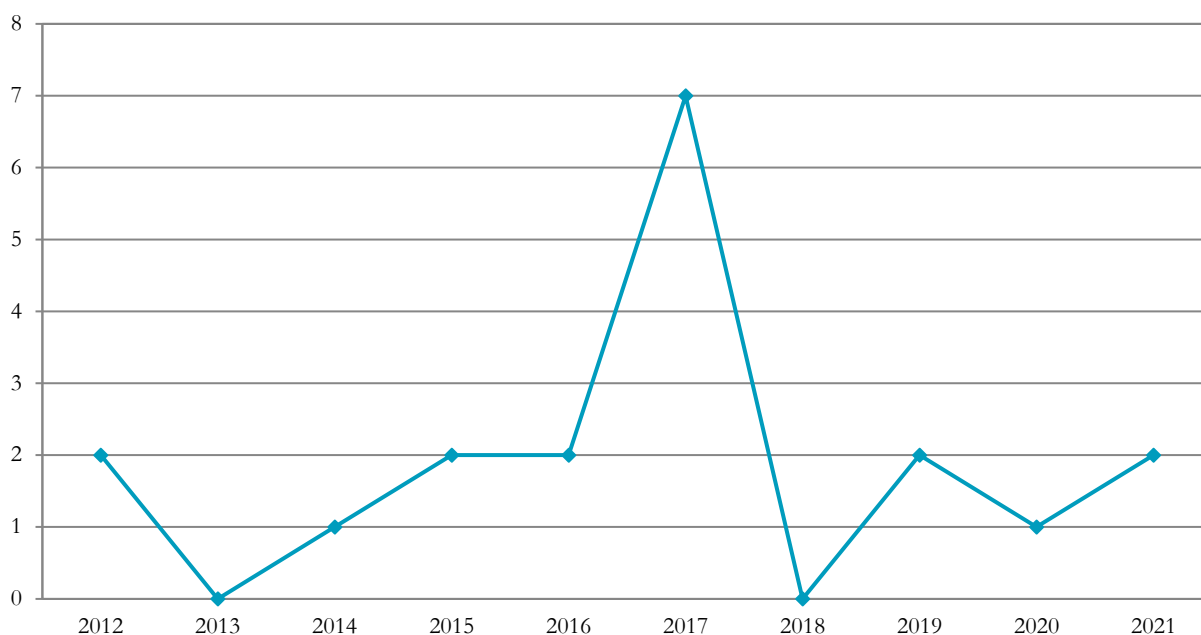


J. Reuben Clark Law School

Summary by Departments

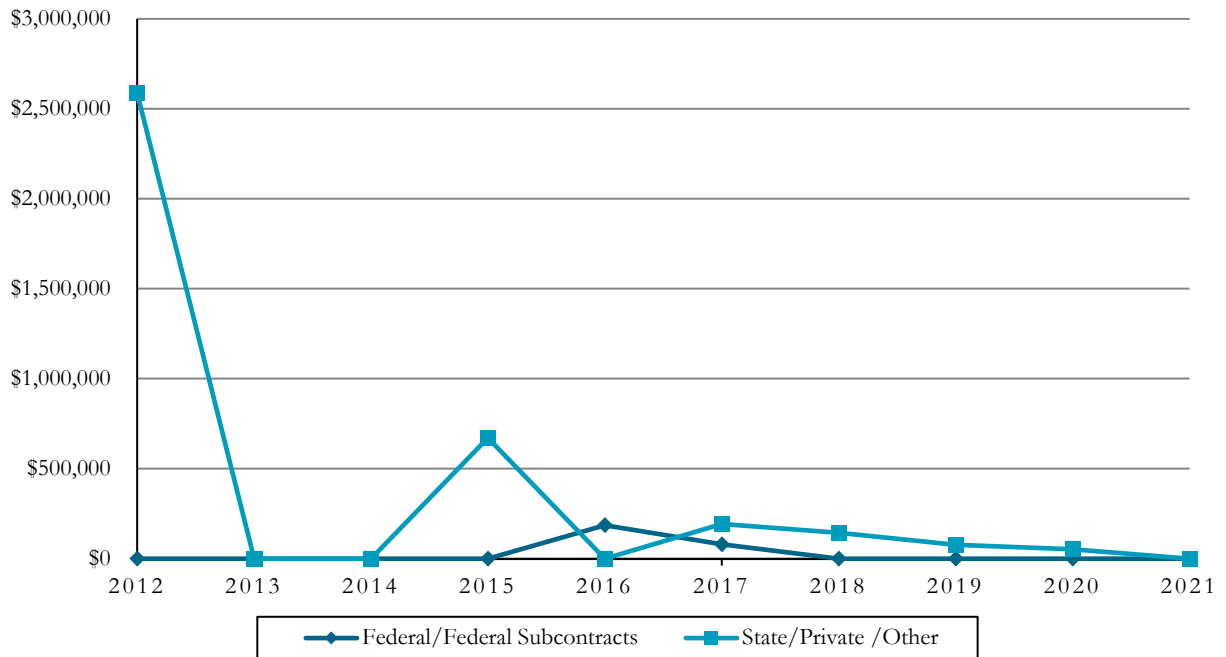
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|---------------|-------------------------|--------------------------|-------------|-----------------|
| Law School | 1 | 2 | 0 | \$0 |
| TOTALS | 1 | 2 | 0 | \$0 |

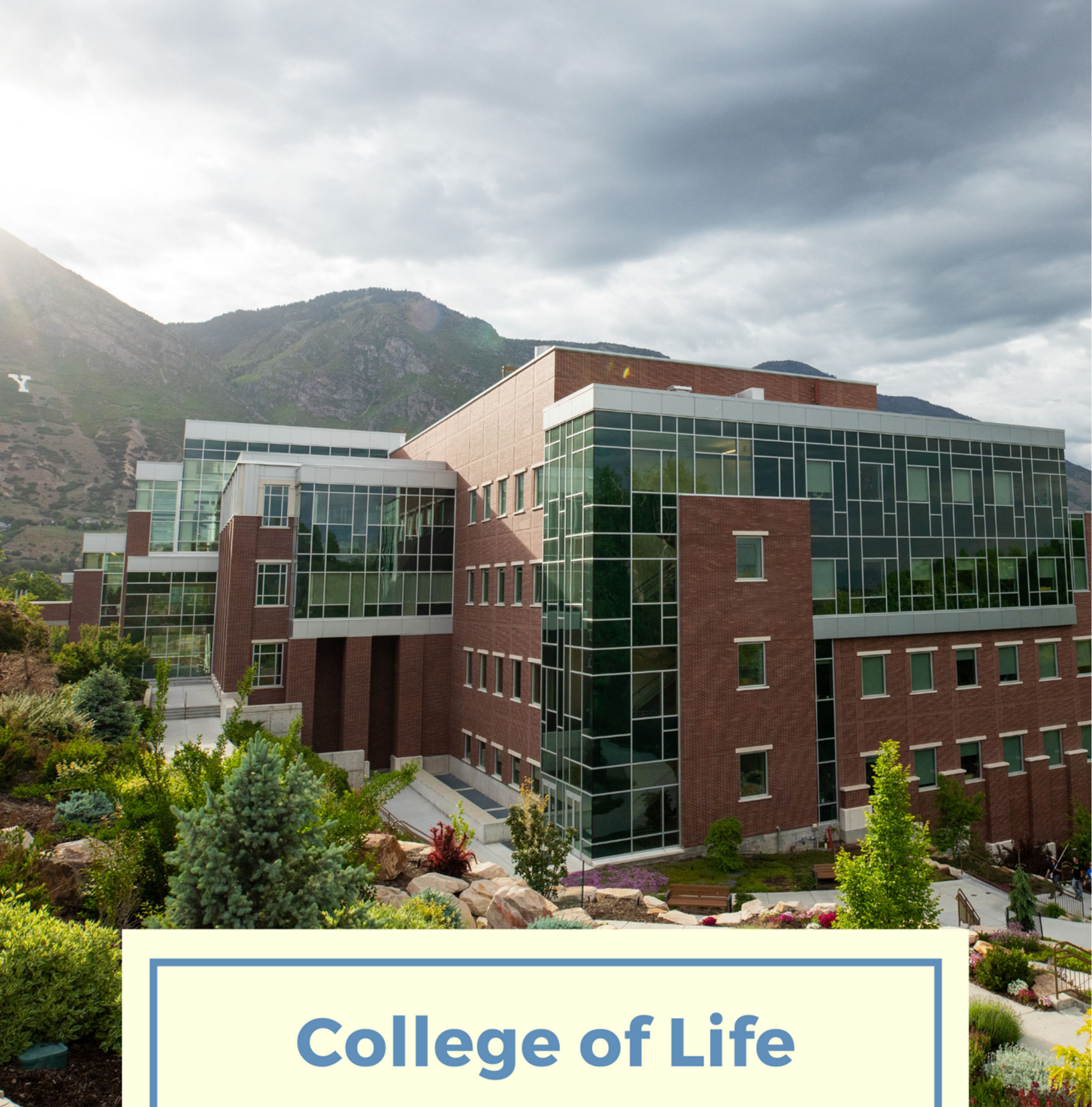
Proposal Submissions



Awards by Sources

| Year | Grants/Contracts | | Total |
|------|------------------------------|---------------|-------------|
| | Federal/Federal Subcontracts | State/Private | |
| 2012 | \$0 | \$2,588,209 | \$2,588,209 |
| 2013 | \$0 | \$0 | \$0 |
| 2014 | \$0 | \$0 | \$0 |
| 2015 | \$0 | \$670,637 | \$670,637 |
| 2016 | \$185,790 | \$0 | \$185,790 |
| 2017 | \$79,189 | \$191,800 | \$270,989 |
| 2018 | \$0 | \$143,423 | \$143,423 |
| 2019 | \$0 | \$76,117 | \$76,117 |
| 2020 | \$0 | \$51,568 | \$51,568 |
| 2021 | \$0 | \$0 | \$0 |



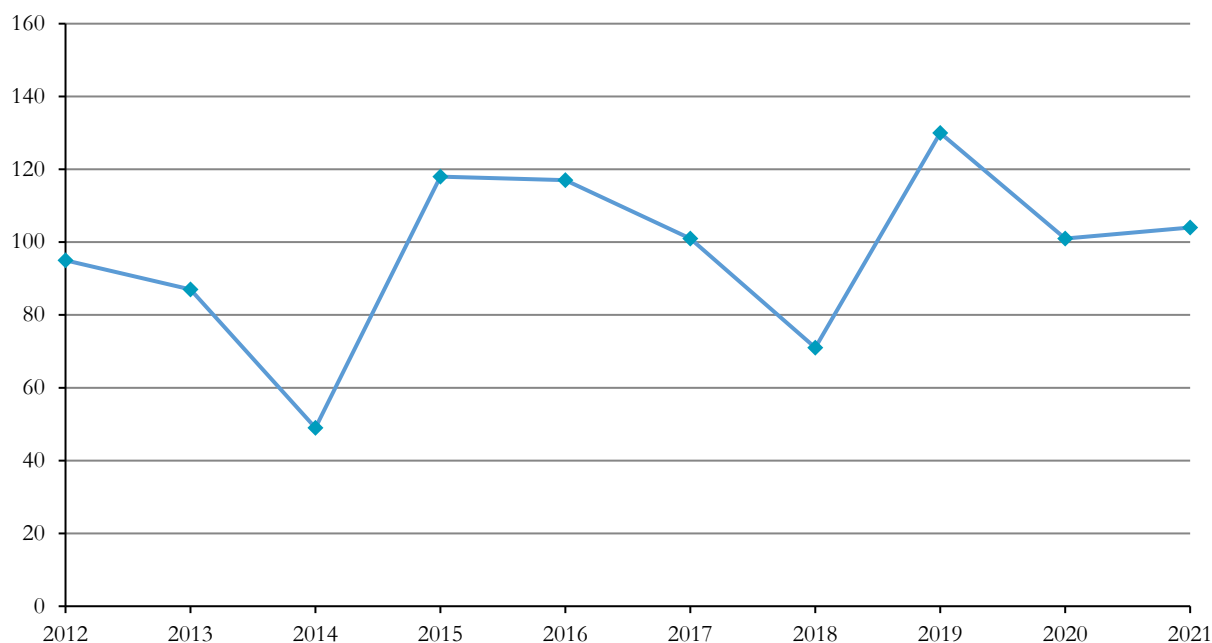


College of Life Sciences

Summary by Departments

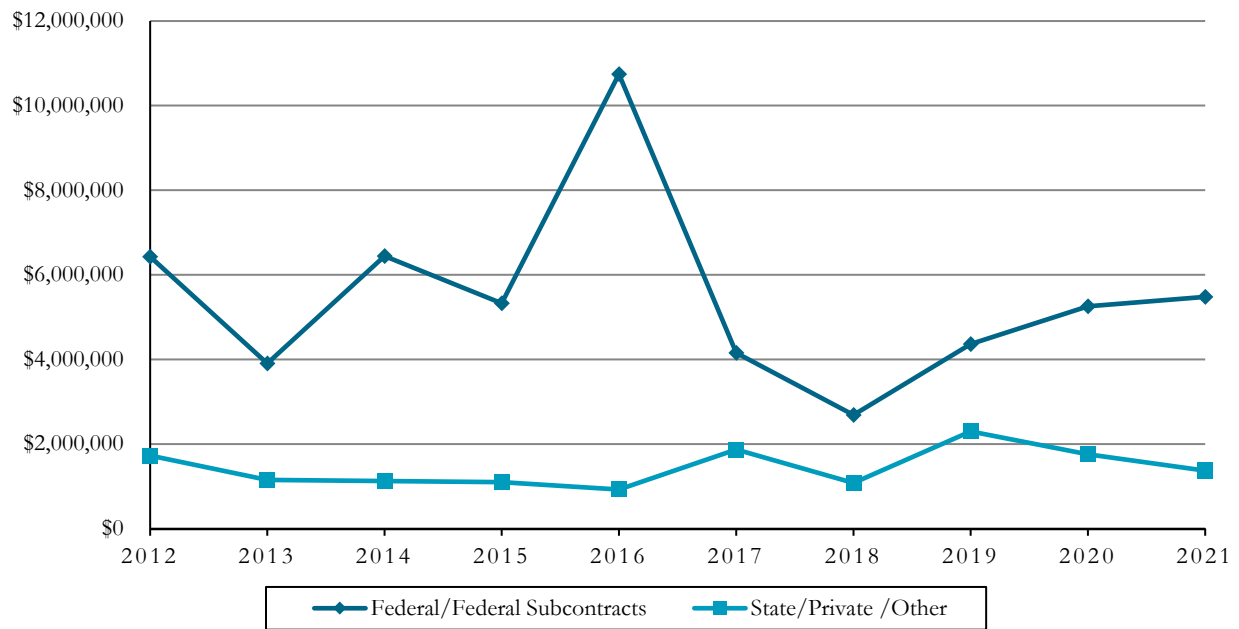
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|-------------------------------------|-------------------------|--------------------------|-------------|-----------------|
| Monte L. Bean Life Science Museum | 1 | 1 | 1 | \$24,000 |
| Biology | 12 | 20 | 13 | \$1,879,072 |
| Cell Biology & Physiology | 10 | 15 | 5 | \$278,857 |
| Exercise Science | 5 | 7 | 2 | \$261,705 |
| Microbiology & Molecular Biology | 8 | 15 | 9 | \$819,479 |
| Nutrition, Dietetics & Food Science | 5 | 11 | 7 | \$780,445 |
| Plant & Wildlife Sciences | 16 | 29 | 32 | \$2,270,034 |
| Public Health | 6 | 6 | 1 | \$535,577 |
| TOTALS | 63 | 104 | 70 | \$6,849,169 |

Proposal Submissions



Awards by Sources

| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|--------------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$6,426,283 | \$1,727,334 | \$8,163,617 |
| 2013 | \$3,905,977 | \$1,151,388 | \$4,988,584 |
| 2014 | \$6,442,140 | \$1,125,358 | \$7,567,498 |
| 2015 | \$5,327,507 | \$1,099,440 | \$6,426,947 |
| 2016 | \$10,743,176 | \$929,921 | \$11,673,097 |
| 2017 | \$4,154,421 | \$1,869,843 | \$6,024,264 |
| 2018 | \$2,688,968 | \$1,082,714 | \$3,771,682 |
| 2019 | \$4,363,993 | \$2,301,116 | \$6,665,109 |
| 2020 | \$5,256,149 | \$1,760,079 | \$7,016,228 |
| 2021 | \$5,477,453 | \$1,371,716 | \$6,849,169 |



College of Life Sciences

2021 Awards

| <u>Researcher</u> | <u>Role</u> | <u>Sponsor</u> | <u>Prime Sponsor</u> | <u>Title</u> | <u>Beg Date</u> | <u>End Date</u> | <u>Account</u> | <u>Amount</u> |
|-------------------|-------------|--|-------------------------------|---|-----------------|-----------------|----------------|---------------|
| Biology | | | | | | | | |
| Belk, Mark | PI | Kodiak Roofing & Waterproofing company | | Marine food web in Icy Strait Alaska using stable isotope analysis | Jun-21 | May-23 | R0602661 | \$33,390 |
| Bybee, Seth | PI | National Science Foundation | | Collaborative Research: Shedding light on firefly phylogenetic systematics and the evolution of their sexual signal types | Feb-18 | Jun-21 | R0112371 | \$15,000 |
| Bybee, Seth | PI | National Science Foundation | | Collaborative Research: Genealogy of Odonata (GEODE): Dispersal and color as drivers of 300 million years of global dragonfly evolution | Jun-20 | May-21 | R0112441 | \$3,525 |
| Bybee, Seth | PI | National Science Foundation | | Collaborative Research: Genealogy of Odonata (GEODE): Dispersal and color as drivers of 300 million years of global dragonfly evolution | Jun-20 | May-21 | R0112442 | \$25,514 |
| Griffen, Blaine | PI | National Science Foundation | | Can optimal energy allocation in bioenergetic models improve predictions? | Sep-21 | Aug-24 | R0112469 | \$411,574 |
| Jensen, Jamie | Co-PI | National Science Foundation | | Collaborative Research: Genealogy of Odonata (GEODE): Dispersal and color as drivers of 300 million years of global dragonfly evolution | Jun-20 | May-21 | R0112441 | \$3,525 |
| Jensen, Jamie | Co-PI | National Science Foundation | | Collaborative Research: Genealogy of Odonata (GEODE): Dispersal and color as drivers of 300 million years of global dragonfly evolution | Jun-20 | May-21 | R0112442 | \$25,514 |
| Kauwe, Keoni | Co-PI | Washington State University | National Institutes of Health | Natives Engaged in Alzheimer's Research | Aug-21 | Apr-22 | R0303014 | \$165,805 |
| Kauwe, Keoni | PI | Icahn School of Medicine at Mt. Sinai | National Institutes of Health | Integrative Network Modeling of Cognitive Resilience to Alzheimer's Disease | Sep-17 | May-22 | R0302775 | \$30,030 |
| Koide, Roger | PI | University of Montana | Department of Energy | Mycorrhizal networks, plant carbohydrate depletion and vulnerability to drought: an experimental test in the field | Sep-21 | Aug-23 | R0303039 | \$10,500 |

| | | | | | | | | |
|----------------|-------|--|-------------------------------|---|--------|--------|----------|-----------|
| Leavitt, Steve | PI | Bureau of Land Management | | Characterizing genetic diversity in populations of Florida Perforate Cladonia | Jul-21 | Dec-22 | R0202553 | \$7,931 |
| Leavitt, Steve | PI | The University of Tennessee, Knoxville | | Digitization TCN: Collaborative Research: Building a global consortium of bryophytes and lichens: keystones of cryptobiotic communities | Sep-20 | Aug-23 | R0302966 | \$11,093 |
| Nelson, Riley | Co-PI | Utah Department of Natural Resources | | Megafire impacts on terrestrial and aquatic ecosystems and management interventions to protect wildlife habitat and watershed hydrology | Jul-20 | Jun-21 | R0402356 | \$7,350 |
| Nelson, Riley | Co-PI | Utah Department of Natural Resources | | Megafire impacts on terrestrial and aquatic ecosystems and management interventions to protect wildlife habitat and watershed hydrology | Jul-21 | Jun-22 | R0402371 | \$14,493 |
| Payne, Samuel | Co-PI | National Institutes of Health | | Biochemical Consequences of Regiospecific Metabolic Bias in the Brain | May-20 | Feb-22 | R0102106 | \$147,563 |
| Payne, Samuel | Co-PI | National Institutes of Health | | Fully Automated and Ultra-high Throughput Platform for In-depth Single Cell Proteomics | Sep-20 | Aug-22 | R0102106 | \$165,263 |
| Payne, Samuel | PI | Leidos Biomedical Research | National Institutes of Health | PanCancer Proteogenomic Analysis | Sep-21 | Apr-23 | R0303013 | \$67,500 |
| Payne, Samuel | PI | New York University | National Institutes of Health | Proteogenomic Data Analysis for Cancer Systems Biology and Clinical Translation | Sep-18 | Aug-21 | R0302818 | \$107,683 |
| Payne, Samuel | PI | New York University | National Institutes of Health | Proteogenomic Data Analysis for Cancer Systems Biology and Clinical Translation | Sep-18 | Aug-22 | R0302818 | \$25,000 |
| Ridge, Perry | PI | Washington State University | National Institutes of Health | Natives Engaged in Alzheimer's Research | Aug-21 | Apr-22 | R0303014 | \$165,805 |
| Stowers, Josh | Co-PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | R0112461 | \$5,280 |
| Stowers, Josh | Co-PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | R0112460 | \$137,259 |
| Stowers, Josh | Co-PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | R0112460 | \$5,280 |
| Stowers, Josh | Co-PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | R0112461 | \$59,136 |
| Stowers, Josh | Co-PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | R0112460 | \$228,060 |

Cell Biology & Physiology

| | | | | | | | | |
|------------------|----|----------------------------|-------------------------------|--|--------|--------|----------|-----------|
| Bikman, Benjamin | PI | Levels Health | | Understanding the paradoxical rise in blood glucose in the context of a low-carbohydrate diet and the use of real-time glycemic status to alter behavior | Feb-21 | Jan-22 | R0602653 | \$130,000 |
| Hansen, Jason | PI | University of Oklahoma | National Institutes of Health | Hyperoxic Modulation of Thioredoxin Signaling | Nov-20 | Jun-21 | R0302969 | \$37,500 |
| Hansen, Jason | PI | University of Oklahoma | National Institutes of Health | Hyperoxic Modulation of Thioredoxin Signaling | Nov-20 | Jun-22 | R0302969 | \$37,500 |
| Hansen, Jason | PI | University of Pittsburgh | National Institutes of Health | Mechanism of Telomere-Mediated Lung Disease | Jul-20 | Jun-21 | R0302816 | \$46,056 |
| Jenkins, Timothy | PI | Inherent Biosciences, Inc. | | A Study of Semen Quality and Sperm Epigenetics Among Healthy Men Before and After Nutritional Supplementation | Aug-21 | May-22 | R0602663 | \$27,801 |

Exercise Science

| | | | | | | | | |
|------------------|-------|-------------------------------------|-------------------------------|---|--------|--------|----------|-----------|
| Bruening, Dustin | PI | National Science Foundation | | Don't forget the foot! Exposing foot energetics to enhance foot orthoses and gait rehabilitation. | Feb-21 | Jan-24 | R0112452 | \$196,527 |
| Feland, Brent | Co-PI | PhotoPharmics, Inc. | National Institutes of Health | Amelioration of opioid withdrawal-induced anxiety and craving with heterodyned whole body vibration | Jun-21 | Jun-22 | R0303005 | \$62,678 |
| Hopkins, Ty | PI | American College of Sports Medicine | | Effects of 4-week Augmented Neuromuscular Training Via External Feedback on Movement Strategies in Individuals with Chronic Ankle Instability | May-21 | Apr-22 | R0502348 | \$2,500 |

Microbiology & Molecular Biology

| | | | | | | | | |
|------------------|-------|-----------------------------------|-----------------------|---|--------|--------|----------|-----------|
| Griffitts, Joel | Co-PI | Western Dairy Center | Utah State University | BIOCONVERSION OF DAIRY LACTOSE TO RARE SUGARS | Jul-20 | Jun-22 | R0502334 | \$17,895 |
| Grose, Julianne | PI | National Institutes of Health | | Investigating the partitioning of glucose to lipids versus respiration, an undergraduate-based approach to dissect a pivotal point of metabolic control | Sep-20 | Aug-23 | R0102111 | \$437,614 |
| Grose, Julianne | PI | Beekeeping 101 | | Manipulating the Microbiome of small hive beetles and Varroa mites. | Jun-19 | May-21 | R0602602 | \$250 |
| Robison, Richard | PI | Bruce Lindorf Memorial Foundation | | Microbial Pathogens Involved in Tick-borne Diseases | Jan-21 | Dec-21 | R0502320 | \$53,420 |
| Robison, Richard | PI | Bruce Lindorf Memorial Foundation | | Microbial Pathogens Involved in Tick-borne Diseases | Jan-21 | Dec-21 | R0502320 | \$13,050 |
| Robison, Richard | PI | Bruce Lindorf Memorial Foundation | | Microbial Pathogens Involved in Tick-borne Diseases | Jan-21 | Dec-22 | R0502320 | \$54,770 |

| | | | | | | | | |
|---|-------|---|-------------------------------|--|--------|--------|----------|-----------|
| Robison, Richard | PI | Pennsylvania State University | | SARS-CoV-2 Nasal Pharyngeal and Oral Pharyngeal Wash (SNOW) Trial | Nov-21 | Sep-22 | Ro802049 | \$60,000 |
| Robison, Richard | PI | Young Living Holdings, LLC | | The Antimicrobial Effects of Essential Oil Mixtures | Feb-19 | Jul-22 | Ro602592 | \$18,000 |
| Robison, Richard | PI | Zehn-X | | The Inactivation Kinetics of a Novel Disinfectant Formula used in ZEHN-X Wipes on SARS-CoV-2 | Dec-20 | Jan-21 | Ro602652 | \$20,000 |
| Wilson, Eric | PI | Montana State University | National Institutes of Health | Role of the Staphylococcus aureus SaeR/S regulatory system in neutrophil evasion | Jul-21 | Jun-22 | Ro302905 | \$144,480 |
| Monte Bean Life Science Museum | | | | | | | | |
| Rogers, Duke | PI | Center for the Involvement of Teacher Education and Schooling | | Education Partnership-Bean Museum | Jan-11 | Dec-21 | Ro502113 | \$24,000 |
| Nutrition, Dietetics, & Food Science | | | | | | | | |
| Ahlborn, Gene | PI | Alliance for Potato Research and Education | | The Effect of Potatoes on Vegetable Consumption | Nov-21 | Dec-22 | Ro602675 | \$9,308 |
| Bellini, Sara | Co-PI | Alliance for Potato Research and Education | | The Effect of Potatoes on Vegetable Consumption | Nov-21 | Dec-22 | Ro602675 | \$8,776 |
| Jefferies, Laura | Co-PI | Alliance for Potato Research and Education | | The Effect of Potatoes on Vegetable Consumption | Nov-21 | Dec-22 | Ro602675 | \$8,776 |
| LeCheminant, James | Co-PI | Alliance for Potato Research and Education | | The Effect of Potatoes on Vegetable Consumption | Nov-21 | Dec-22 | Ro602675 | \$8,776 |
| Patten, Emily | Co-PI | Alliance for Potato Research and Education | | The Effect of Potatoes on Vegetable Consumption | Nov-21 | Dec-22 | Ro602675 | \$8,776 |
| Pike, Oscar | Co-PI | Utah Department of Agriculture | Department of Agriculture | Identification and evaluation of high-yielding Pinus edulis native to the Four Corners as pine-nut crops | Nov-20 | Sep-23 | Ro302971 | \$25,815 |
| Pike, Oscar | PI | Welfare Services, The Church of Jesus Christ of Latter-day Saints | | BYU Quality Assurance Laboratory | Jan-21 | Dec-21 | Ro700031 | \$54,000 |
| Pike, Oscar | PI | Welfare Services, The Church of Jesus Christ of Latter-day Saints | | BYU Quality Assurance Laboratory | Jan-21 | Dec-22 | Ro70031 | \$5,000 |
| Steele, Frost | PI | Deseret Meats - The Church of Jesus Christ of Latter-day Saints | | Pathogen Analysis for Meat Products Produced at Deseret Meats & Houston Peanut Butter | Jan-21 | Dec-21 | Ro702001 | \$65,250 |
| Stokes, Nathan | Co-PI | Alliance for Potato Research and Education | | The Effect of Potatoes on Vegetable Consumption | Nov-21 | Dec-22 | Ro602675 | \$8,776 |

| | | | | | | | | |
|---|-------|---|---------------------------|--|--------|--------|----------|-----------|
| Taylor, Brad | Co-PI | Western Dairy Center | | Rapid and Sensitive Detection of Foodborne Pathogens in Dairy Powders | Jul-21 | Jun-23 | R0502353 | \$34,797 |
| Taylor, Brad | PI | Western Dairy Center | | BIOCONVERSION OF DAIRY LACTOSE TO RARE SUGARS | Jul-20 | Jun-22 | R0502334 | \$17,895 |
| Tessem, Jeff | PI | National Institutes of Health | | Sex dependent function of the orphan nuclear receptor Nr4a1 in the pancreatic beta cell during Type 2 Diabetes disease progression | Apr-21 | Mar-24 | R0102112 | \$441,165 |
| Tessem, Jeff | PI | North Carolina State University | Department of Agriculture | Bioavailable gut microbial metabolites potentiate the beta-cell stimulatory and anti-obesity activities of poorly-bioavailable cocoa flavanols | Apr-21 | Mar-22 | R0302903 | \$83,333 |
| <i>Plant & Wildlife Sciences</i> | | | | | | | | |
| Aanderud, Zach | Co-PI | National Science Foundation | | Collaborative Research: Network Cluster: Dust in the Critical Zone from the Great Basin to the Rocky Mountains | Sep-21 | Aug-22 | R0112444 | \$70,023 |
| Aanderud, Zach | PI | State of Utah Department of Environmental Quality | | Monitoring Utah's Wastewater to Assist in Utah's Response to the COVID-19 Pandemic | Jul-20 | Dec-20 | R0402358 | \$34,599 |
| Aanderud, Zach | PI | Utah Department of Health | | Monitoring Utah's Wastewater to Assist in Utah's Response to the COVID-19 Pandemic | Jan-21 | Jul-21 | R0402366 | \$58,905 |
| Abbott, Ben | PI | National Science Foundation | | Collaborative Research: Network Cluster: Using Big Data approaches to assess ecohydrological resilience across scales | Sep-21 | Aug-22 | R0112445 | \$56,875 |
| Abbott, Ben | Co-PI | Utah Department of Natural Resources | | Megafire impacts on terrestrial and aquatic ecosystems and management interventions to protect wildlife habitat and watershed hydrology | Jul-20 | Jun-21 | R0402356 | \$7,350 |
| Abbott, Ben | Co-PI | Utah Department of Natural Resources | | Megafire impacts on terrestrial and aquatic ecosystems and management interventions to protect wildlife habitat and watershed hydrology | Jul-21 | Jun-22 | R0402371 | \$14,493 |
| Anderson, Val Jo | Co-PI | US Fish and Wildlife Service | Department of Interior | Natural Resources Support for Natural Resources Program, UTTR, Utah and Nevada | Sep-19 | Sep-22 | R0202533 | \$25,956 |
| Anderson, Val Jo | Co-PI | Rio Tinto Kennecott | | Improving Vegetation Establishment on Kennecott Mine Waste Rock Dumps and Tailings | Jun-20 | Dec-21 | R0602635 | \$25,435 |
| Anderson, Val Jo | Co-PI | Rio Tinto Kennecott | | Improving Vegetation Establishment on Kennecott Mine Waste Rock Dumps and Tailings | Jun-20 | Dec-21 | R0602635 | \$20,000 |
| Flinders, Loreen Allphin | PI | USDA U.S. Forest Service | | RE-MONITORING OF LONG-TERM GRAZING PADDocks ON THE DESERT EXPERIMENTAL RANGE IN UTAH, USA | Jul-21 | Sep-22 | R0202554 | \$15,107 |
| Frandsen, Paul | Co-PI | Utah Department of Natural Resources | | Megafire impacts on terrestrial and aquatic ecosystems and management interventions to protect | Jul-20 | Jun-21 | R0402356 | \$7,350 |

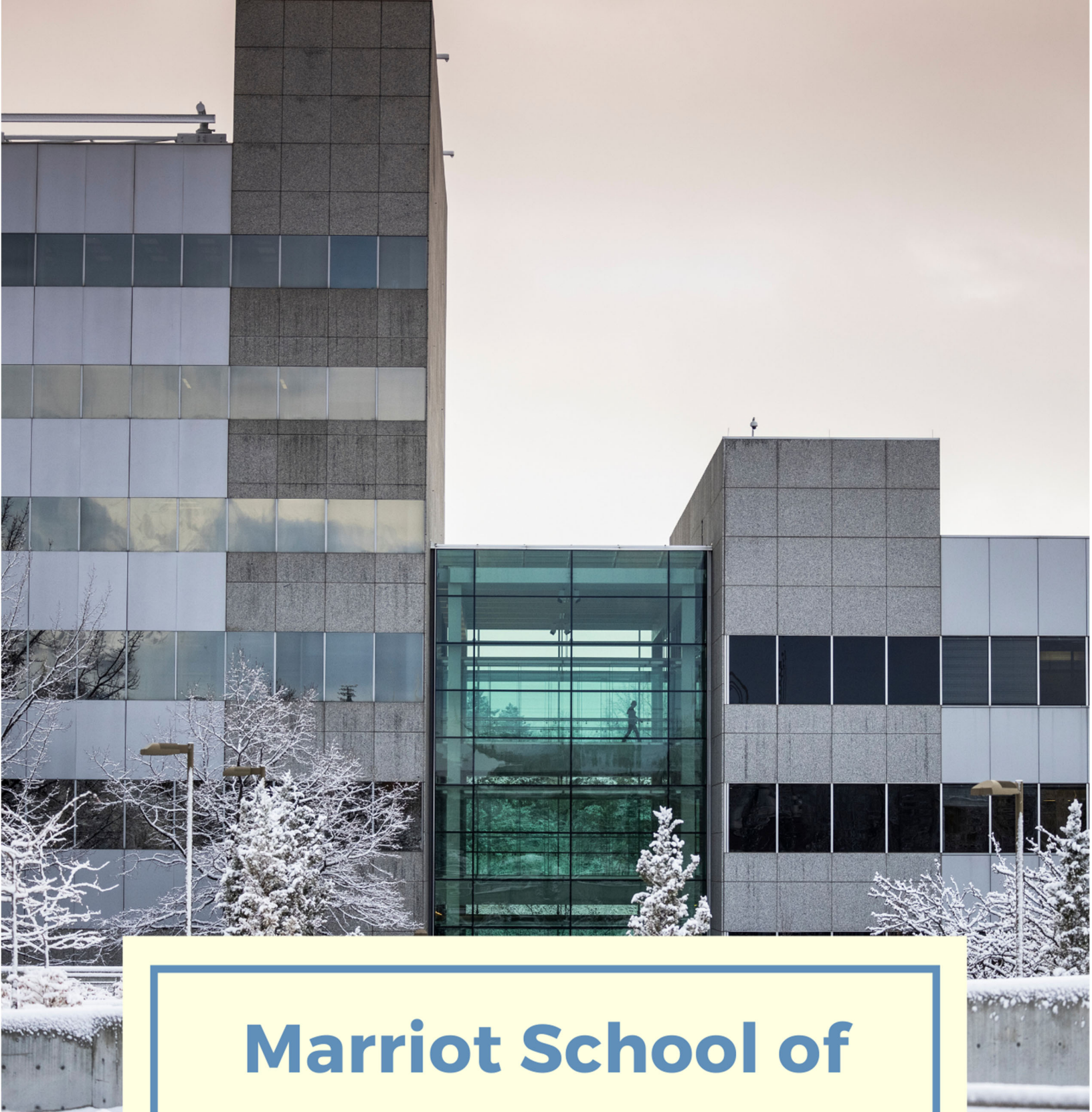
| | | | | | | | | |
|----------------|-------|--------------------------------------|---------------------------|--|--------|--------|----------|----------|
| | | | | wildlife habitat and watershed hydrology | | | | |
| Frandsen, Paul | Co-PI | Utah Department of Natural Resources | | Megafire impacts on terrestrial and aquatic ecosystems and management interventions to protect wildlife habitat and watershed hydrology | Jul-21 | Jun-22 | R0402371 | \$14,493 |
| Geary, Bradley | PI | Department of Agriculture | | Control of Pythium Leak (Pythium Ultimum) and Silver Scurf (Helminthosporium Solani) Infection of Potato Using Antagonistic Streptomyces | Jul-18 | Jun-22 | R0152014 | \$25,900 |
| Geary, Bradley | PI | Western Dairy Center | | Rapid and Sensitive Detection of Foodborne Pathogens in Dairy Powders | Jul-21 | Jun-23 | R0502353 | \$34,797 |
| Geary, Bradley | Co-PI | Rio Tinto Kennecott | | Improving Vegetation Establishment on Kennecott Mine Waste Rock Dumps and Tailings | Jun-20 | Dec-21 | R0602635 | \$25,435 |
| Geary, Bradley | Co-PI | Rio Tinto Kennecott | | Improving Vegetation Establishment on Kennecott Mine Waste Rock Dumps and Tailings | Jun-20 | Dec-21 | R0602635 | \$20,000 |
| Hansen, Neil | PI | Utah State University | 4R Research Fund | Stacking and Intersecting Nutrient and Irrigation 4R's | Jan-21 | Dec-21 | R0502317 | \$20,069 |
| Hansen, Neil | PI | Utah State University | Department of Agriculture | Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture | Jul-19 | Jun-21 | R0302891 | \$12,946 |
| Hansen, Neil | PI | Utah State University | Department of Agriculture | Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture | Jul-19 | Jun-21 | R0302891 | \$5,436 |
| Hopkins, Bryan | PI | US Geological Services | Department of Interior | USGS - Soil Analysis | Sep-20 | Sep-25 | R0202546 | \$1,500 |
| Hopkins, Bryan | Co-PI | US Fish and Wildlife Service | Department of Interior | Natural Resources Support for Natural Resources Program, UTTR, Utah and Nevada | Sep-19 | Sep-22 | R0202533 | \$25,956 |
| Hopkins, Bryan | Co-PI | Utah State University | 4R Research Fund | Stacking and Intersecting Nutrient and Irrigation 4R's | Jan-21 | Dec-21 | R0502317 | \$20,069 |
| Hopkins, Bryan | Co-PI | Utah State University | Department of Agriculture | Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture | Jul-19 | Jun-21 | R0302891 | \$12,565 |
| Hopkins, Bryan | Co-PI | Utah State University | Department of Agriculture | Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture | Jul-19 | Jun-21 | R0302891 | \$5,276 |
| Jarvis, David | Co-PI | Department of Agriculture | | Avena Pangenome | Aug-20 | Jul-22 | R0152019 | \$10,763 |
| Jellen, Eric | PI | Department of Agriculture | | Avena Genome Sequence Comparison: Clintland 60 | Apr-21 | Apr-22 | R0152020 | \$17,008 |
| Jellen, Eric | PI | Department of Agriculture | | Avena Pangenome | Aug-20 | Jul-22 | R0152019 | \$11,089 |

| | | | | | | | | |
|-----------------|-------|---|-------------------------------|--|--------|--------|----------|-----------|
| Jellen, Eric | PI | Department of Agriculture | | Small Grains Pangenome Assembly and Annotation | Aug-20 | Jul-25 | R0152018 | \$29,865 |
| Jellen, Eric | PI | General Mills | | Project Charter VIII: Genetic Refinement of Moroccan High-Protein Oats for Subsistence Farmers | Apr-21 | Apr-22 | R0602657 | \$7,500 |
| Larsen, Randy | PI | Army, Dugway Proving Grounds | Department of Defense | Monitoring of Natural Resources with Remote Cameras, Photo Database and Automation Algorithm-Dugway Proving Ground, UT | Sep-19 | Sep-22 | R0202529 | \$50,000 |
| Larsen, Randy | PI | Utah Reclamation Mitigation and Conservation Commission | Department of Interior | Monitoring bird abundance and movement for Provo river detal restoration project | Feb-17 | Jan-22 | R0202489 | \$30,000 |
| Larsen, Randy | PI | Utah Reclamation Mitigation and Conservation Commission | Department of Interior | Study of Sage-grouse in Strawberry Valley | Jul-21 | Jun-24 | R0202518 | \$60,000 |
| Larsen, Randy | Co-PI | US Fish and Wildlife Service | Department of Interior | Natural Resources Support for Natural Resources Program, UTTR, Utah and Nevada | Sep-19 | Sep-22 | R0202533 | \$25,956 |
| Larsen, Randy | PI | Colorado State University | Department of Defense | Technician Support for the US Army Dugway Proving Ground--Summer 2021 | May-21 | Oct-21 | R0302992 | \$31,500 |
| Larsen, Randy | Co-PI | Utah Division of Wildlife Resources | US Fish and Wildlife Services | Neonate deer and elk survival on the book cliffs management unit, Utah | Dec-18 | Jun-22 | R0402331 | \$7,718 |
| Madsen, Matthew | PI | Department of Agriculture | | Helping Producers Improve Wildlife Habitat with Innovative Seed Coating Technologies | Feb-21 | Mar-24 | R0202551 | \$519,150 |
| Madsen, Matthew | Co-PI | US Fish and Wildlife Service | Department of Interior | Natural Resources Support for Natural Resources Program, UTTR, Utah and Nevada | Sep-19 | Sep-22 | R0202533 | \$25,956 |
| Madsen, Matthew | PI | University of Colorado, Boulder | National Institutes of Health | From seed to service: Managing the microsite to maximize returns in rangeland restoration and rehabilitation | Nov-20 | Nov-24 | R0302976 | \$200,000 |
| Madsen, Matthew | PI | State of Utah | US Fish and Wildlife Services | Development of Novel Seed Coating Technologies to Improve Wildlife Habitat in the Sagebrush Steppe | Sep-20 | Oct-24 | R0302972 | \$212,410 |
| Madsen, Matthew | PI | Rio Tinto Kennecott | | Improving Vegetation Establishment on Kennecott Mine Waste Rock Dumps and Tailings | Jun-20 | Dec-21 | R0602635 | \$25,435 |
| Madsen, Matthew | PI | Rio Tinto Kennecott | | Improving Vegetation Establishment on Kennecott Mine Waste Rock Dumps and Tailings | Jun-20 | Dec-21 | R0602635 | \$20,000 |
| Maughan, Jeff | PI | Department of Agriculture | | Application of enhanced sequencing techniques | Jul-20 | Jun-22 | R0152017 | \$83,325 |
| Maughan, Jeff | PI | Department of Agriculture | | Application of enhanced sequencing techniques - Acquisition of Goods and Services | Jul-21 | Jun-22 | R0152022 | \$55,000 |
| Maughan, Jeff | Co-PI | Department of Agriculture | | Avena Genome Sequence Comparison: Clintland 60 | Apr-21 | Apr-22 | R0152020 | \$17,008 |

| | | | | | | | | |
|------------------|-------|--------------------------------------|-------------------------------|---|--------|--------|----------|----------|
| Maughan, Jeff | Co-PI | Department of Agriculture | | Avena Pangenome | Aug-20 | Jul-22 | R0152019 | \$10,763 |
| Maughan, Jeff | Co-PI | Department of Agriculture | | Small Grains Pangenome Assembly and Annotation | Aug-20 | Jul-25 | R0152018 | \$29,865 |
| Maughan, Jeff | Co-PI | General Mills | | Project Charter VIII: Genetic Refinement of Moroccan High-Protein Oats for Subsistence Farmers | Apr-21 | Apr-22 | R0602657 | \$7,500 |
| McMillan, Brock | Co-PI | Army, Dugway Proving Grounds | Department of Defense | Monitoring of Natural Resources with Remote Cameras, Photo Database and Automation Algorithm-Dugway Proving Ground, UT | Sep-19 | Sep-22 | R0202529 | \$50,000 |
| McMillan, Brock | PI | Utah Division of Wildlife Resources | US Fish and Wildlife Services | Neonate deer and elk survival on the book cliffs management unit, Utah | Dec-18 | Jun-22 | R0402331 | \$7,718 |
| Petersen, Steve | PI | US Fish and Wildlife Service | Department of Interior | Natural Resources Support for Natural Resources Program, UTTR, Utah and Nevada | Sep-19 | Sep-22 | R0202533 | \$26,019 |
| Petersen, Steve | PI | Nevada Department of Wildlife | | Quantifying the influence of feral horses on greater sage-grouse populations in Nevada: a case study using lek count and HMA data | Jul-21 | Jun-22 | R0470019 | \$5,900 |
| Petersen, Steve | Co-PI | Rio Tinto Kennecott | | Improving Vegetation Establishment on Kennecott Mine Waste Rock Dumps and Tailings | Jun-20 | Dec-21 | R0602635 | \$25,435 |
| Petersen, Steve | Co-PI | Rio Tinto Kennecott | | Improving Vegetation Establishment on Kennecott Mine Waste Rock Dumps and Tailings | Jun-20 | Dec-21 | R0602635 | \$20,000 |
| Smith, Tom | Co-PI | US Fish and Wildlife Service | Department of Interior | Natural Resources Support for Natural Resources Program, UTTR, Utah and Nevada | Sep-19 | Sep-22 | R0202533 | \$25,956 |
| St Clair, Samuel | PI | USDA U.S. Forest Service | | Global Change Interactions in Drylands | Aug-21 | Sep-25 | R0202560 | \$13,000 |
| St Clair, Samuel | PI | Utah Department of Natural Resources | | Megafire impacts on terrestrial and aquatic ecosystems and management interventions to protect wildlife habitat and watershed hydrology | Jul-20 | Jun-21 | R0402356 | \$7,350 |
| St Clair, Samuel | PI | Utah Department of Natural Resources | | Megafire impacts on terrestrial and aquatic ecosystems and management interventions to protect wildlife habitat and watershed hydrology | Jul-21 | Jun-22 | R0402371 | \$14,493 |
| Stewart, Ryan | PI | Utah Department of Agriculture | Department of Agriculture | Identification and evaluation of high-yielding Pinus edulis native to the Four Corners as pine-nut crops | Nov-20 | Sep-23 | R0302971 | \$25,815 |

Public Health

| | | | | | | | | |
|-----------------|-------|-----------------------------------|---------------|--|--------|--------|----------|-----------|
| Barnes, Michael | Co-PI | Utah County Health Department | State of Utah | A Campus-Community Partnership to Address Utah County Health Disparities: Enhancing Public Health Training through Health Equity Champions | Aug-21 | May-23 | R0303017 | \$55,500 |
| Chaney, Robbie | Co-PI | Utah County Health Department | State of Utah | A Campus-Community Partnership to Address Utah County Health Disparities: Enhancing Public Health Training through Health Equity Champions | Aug-21 | May-23 | R0303017 | \$55,500 |
| Crandall, Ali | Co-PI | Utah County Health Department | State of Utah | A Campus-Community Partnership to Address Utah County Health Disparities: Enhancing Public Health Training through Health Equity Champions | Aug-21 | May-23 | R0303017 | \$55,500 |
| Hanson, Carl | PI | Utah County Health Department | State of Utah | A Campus-Community Partnership to Address Utah County Health Disparities: Enhancing Public Health Training through Health Equity Champions | Aug-21 | May-23 | R0303017 | \$55,500 |
| Merrill, Ray | Co-PI | National Institutes of Health | | Pathophysiology of Voice Disorders due to Combination Inhaled Corticosteroids in Asthma | May-21 | Apr-22 | R0102086 | \$267,383 |
| Redelfs, Alisha | Co-PI | Utah Department of Transportation | | Equitable Access to Nutrition in Utah | Oct-21 | Sep-22 | R0402376 | \$23,097 |
| Spruance, Lori | Co-PI | Utah Department of Transportation | | Equitable Access to Nutrition in Utah | Oct-21 | Sep-22 | R0402376 | \$23,097 |

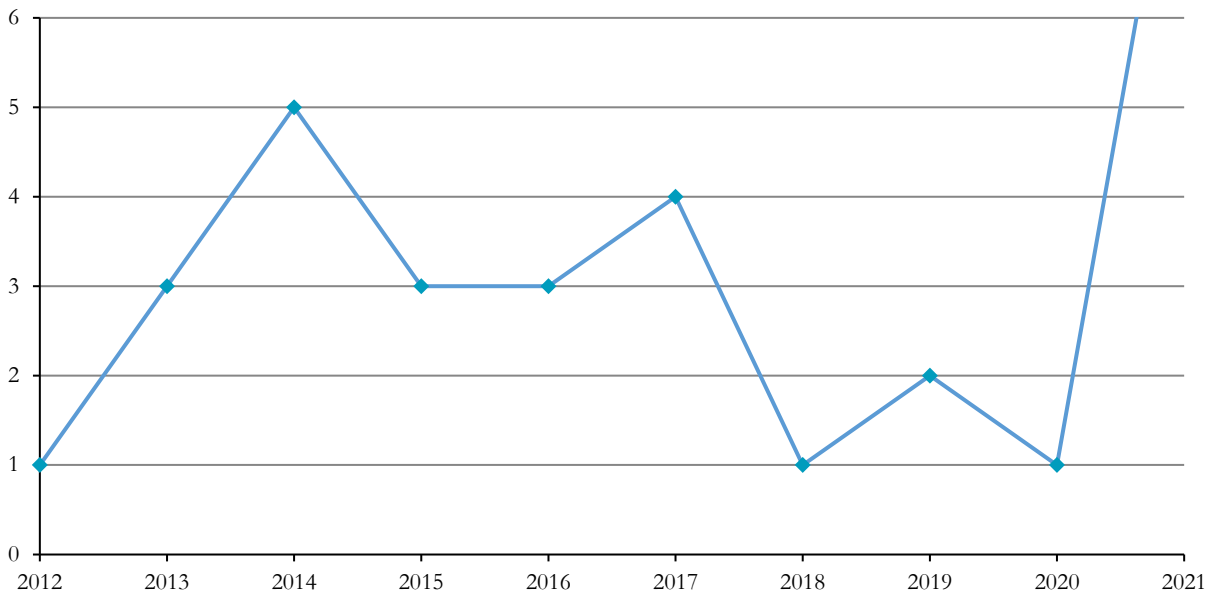


Marriot School of Business

Summary by Departments

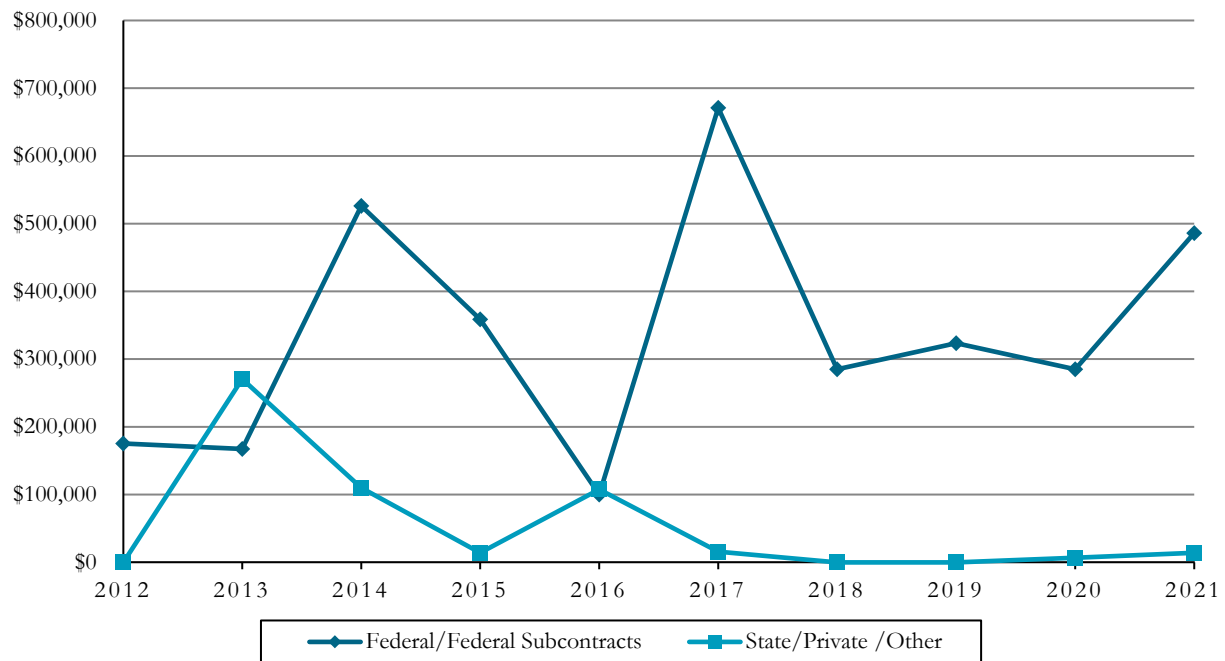
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|---------------------------------------|-------------------------|--------------------------|-------------|------------------|
| School of Accountancy | 0 | 0 | 0 | \$0 |
| Ballard Center for Social Impact | 1 | 1 | 1 | \$5,000 |
| Experience Design & Management | 1 | 1 | 0 | \$0 |
| Finance & Managerial Economics | 0 | 0 | 0 | \$0 |
| Global Management Center | 1 | 1 | 2 | \$285,000 |
| Information Systems | 1 | 2 | 1 | \$6,878 |
| Management | 2 | 3 | 2 | \$203,221 |
| Marketing & Global Supply Chain | 0 | 0 | 0 | \$0 |
| Romney Institute of Public Management | 1 | 1 | 0 | \$0 |
| TOTALS | 7 | 9 | 6 | \$500,099 |

Proposal Submissions



Awards by Sources

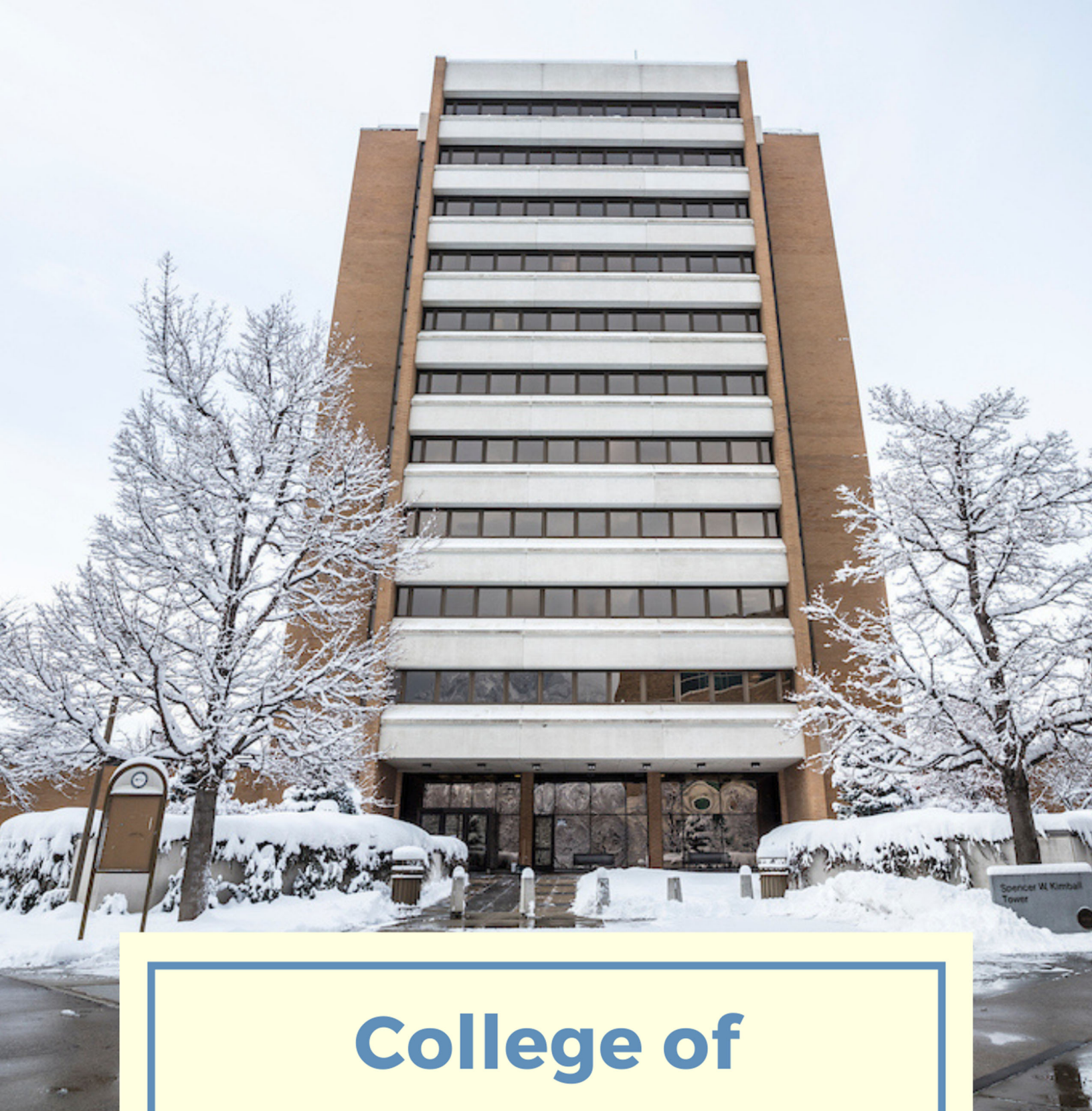
| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|-----------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$175,321 | \$0 | \$175,321 |
| 2013 | \$167,256 | \$270,767 | \$438,023 |
| 2014 | \$526,276 | \$110,000 | \$636,276 |
| 2015 | \$358,690 | \$13,910 | \$372,600 |
| 2016 | \$100,000 | \$107,500 | \$207,500 |
| 2017 | \$671,051 | \$15,600 | \$686,651 |
| 2018 | \$285,000 | \$0 | \$285,000 |
| 2019 | \$323,439 | \$0 | \$323,439 |
| 2020 | \$285,000 | \$6,750 | \$291,750 |
| 2021 | \$486,139 | \$13,960 | \$500,099 |



Marriott School of Business

2021 Awards

| <u>Researcher</u> | <u>Role</u> | <u>Sponsor</u> | <u>Prime Sponsor</u> | <u>Title</u> | <u>Beg Date</u> | <u>End Date</u> | <u>Account</u> | <u>Amount</u> |
|---|-------------|---|-----------------------------|---|-----------------|-----------------|----------------|---------------|
| <i>Ballard Center for Soc Impact</i> | | | | | | | | |
| Manwaring, Todd | PI | VentureWell | | LacNation | Sep-21 | Jun-22 | R0502355 | \$5,000 |
| <i>Global Management Center</i> | | | | | | | | |
| Money, Bruce | PI | Department of Education | | 2018-2022 Center for International Business Education Grant | Oct-18 | Sep-22 | R0132024 | \$142,500 |
| Wood, Jonathon | Co-PI | Department of Education | | 2018-2022 Center for International Business Education Grant | Oct-18 | Sep-22 | R0132024 | \$142,500 |
| <i>Information Systems</i> | | | | | | | | |
| Anderson, Bonnie | PI | Temple University | National Science Foundation | SaTC: CORE: Small: The Blurring of Non-essential Notifications and Critical Security Warnings: Examining the Problem of Generalization in the Brain | Sep-18 | Aug-21 | R0302878 | \$6,878 |
| <i>Management</i> | | | | | | | | |
| Madsen, Peter | PI | Virginia Polytechnic Institute and State University | National Science Foundation | Safety and Learning from Errors and Near Misses in the Human-Automation Interaction of Socio-Technical Infrastructure Systems | Aug-21 | Jun-25 | R0303033 | \$194,261 |
| Rees, McKenzie | PI | Negotiation and Team Resources | | Extreme Dependence: Negotiating via the Favor Bank | Aug-20 | Aug-21 | R0502350 | \$8,960 |

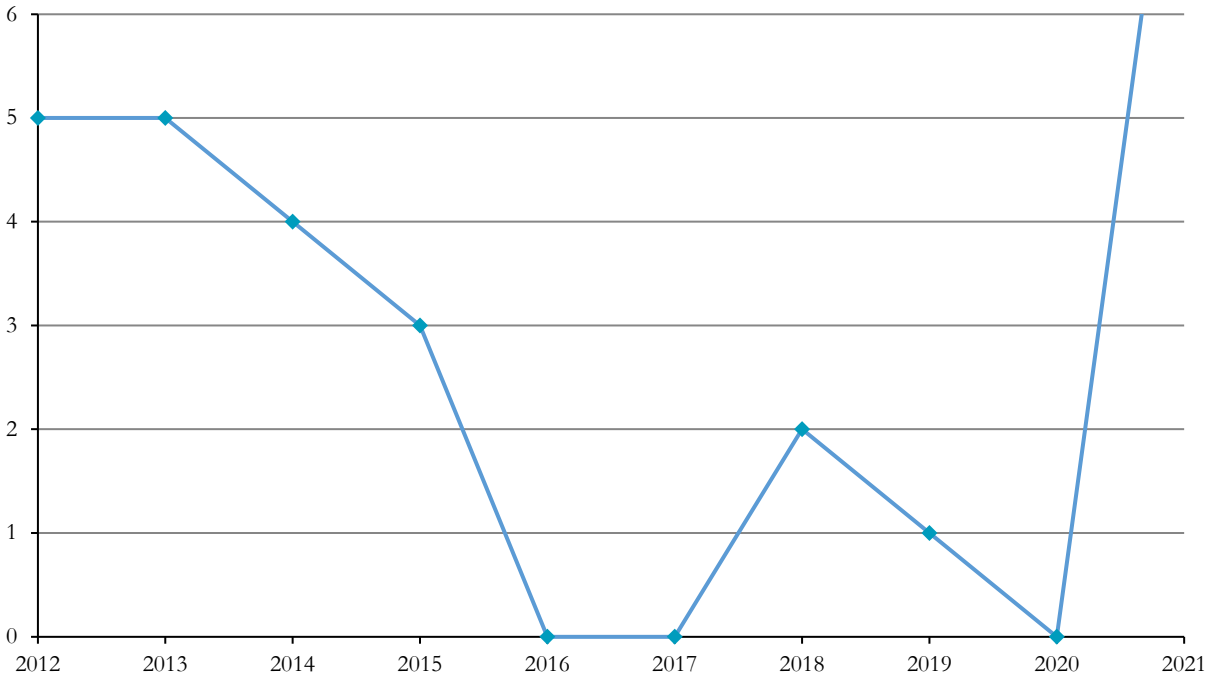


College of Nursing

Summary by Departments

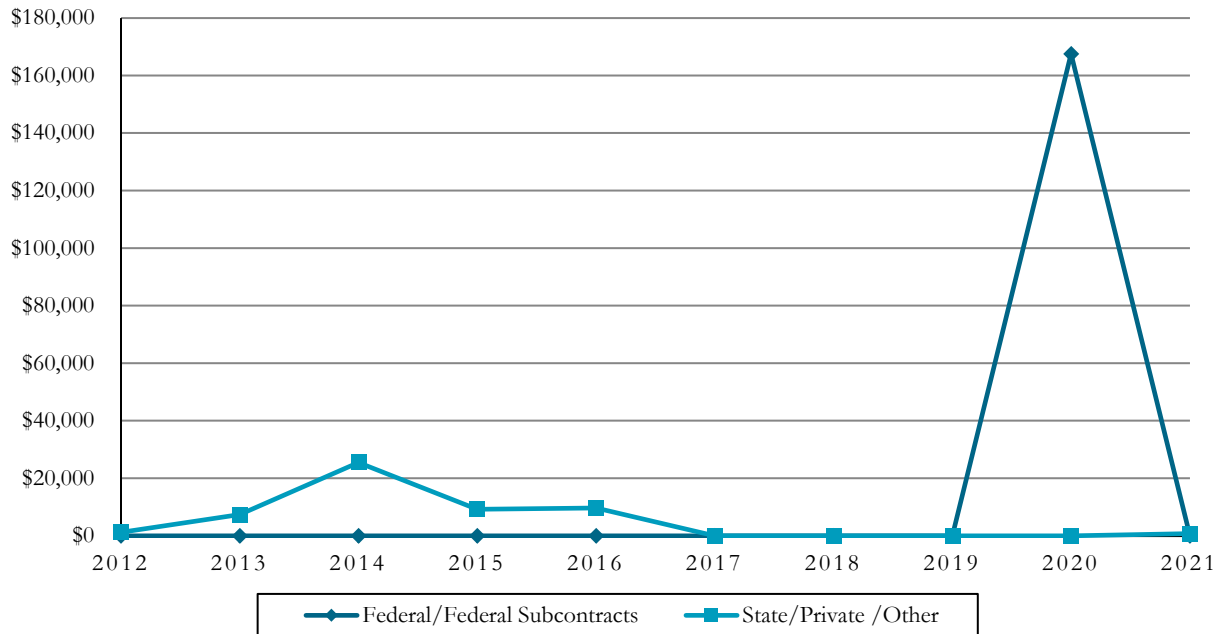
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|---------------|-------------------------|--------------------------|-------------|-----------------|
| Nursing | 8 | 9 | 1 | \$750 |
| TOTALS | 8 | 9 | 1 | \$750 |

Proposal Submissions



Awards by Sources

| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|-----------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$0 | \$1,200 | \$1,200 |
| 2013 | \$0 | \$7,350 | \$7,350 |
| 2014 | \$0 | \$25,500 | \$25,500 |
| 2015 | \$0 | \$9,200 | \$9,200 |
| 2016 | \$0 | \$9,626 | \$9,626 |
| 2017 | \$0 | \$0 | \$0 |
| 2018 | \$0 | \$0 | \$0 |
| 2019 | \$0 | \$0 | \$0 |
| 2020 | \$167,500 | \$0 | \$167,500 |
| 2021 | \$0 | \$750 | \$750 |



College of Nursing

2021 Awards

| <u>Researcher</u> | <u>Role</u> | <u>Sponsor</u> | <u>Prime Sponsor</u> | <u>Title</u> | <u>Beg Date</u> | <u>End Date</u> | <u>Account</u> | <u>Amount</u> |
|-------------------|-------------|--|--------------------------|--|-----------------|-----------------|----------------|---------------|
| Himes, Deborah | PI | International Society of Nurses in Genetics | | Development of a Credential for Genomic Nursing Education: Delphi Study for Consensus | Aug-21 | Aug-22 | R0502356 | \$750 |

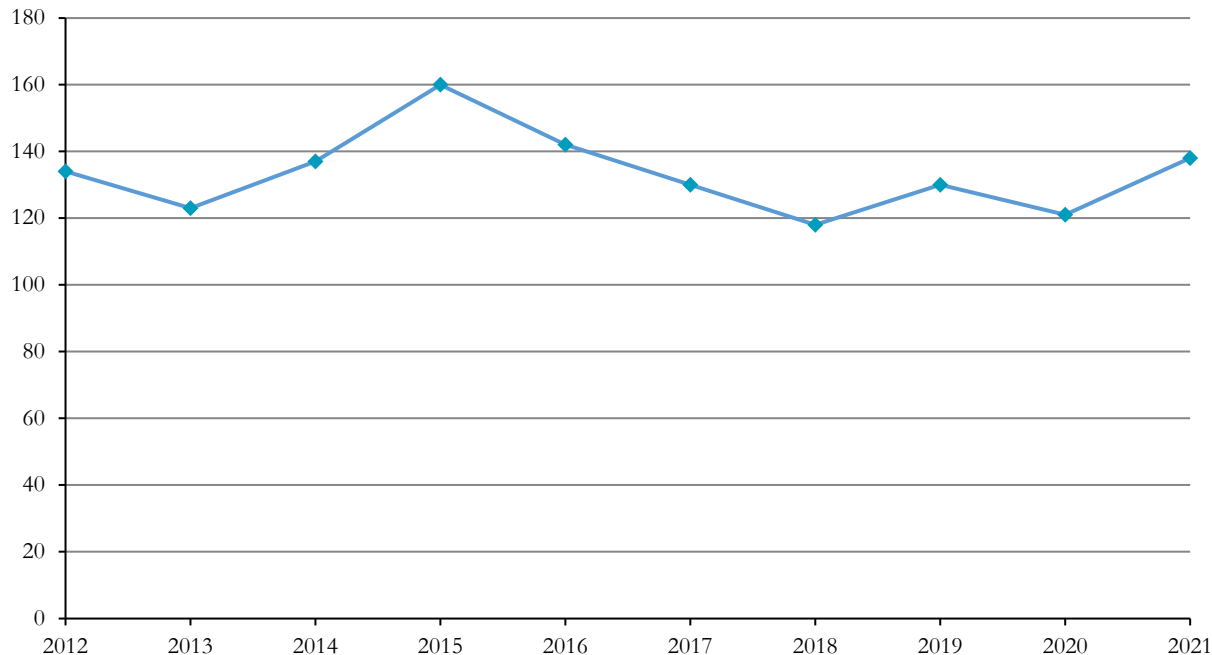


College of Physical & Mathematical Sciences

Summary by Departments

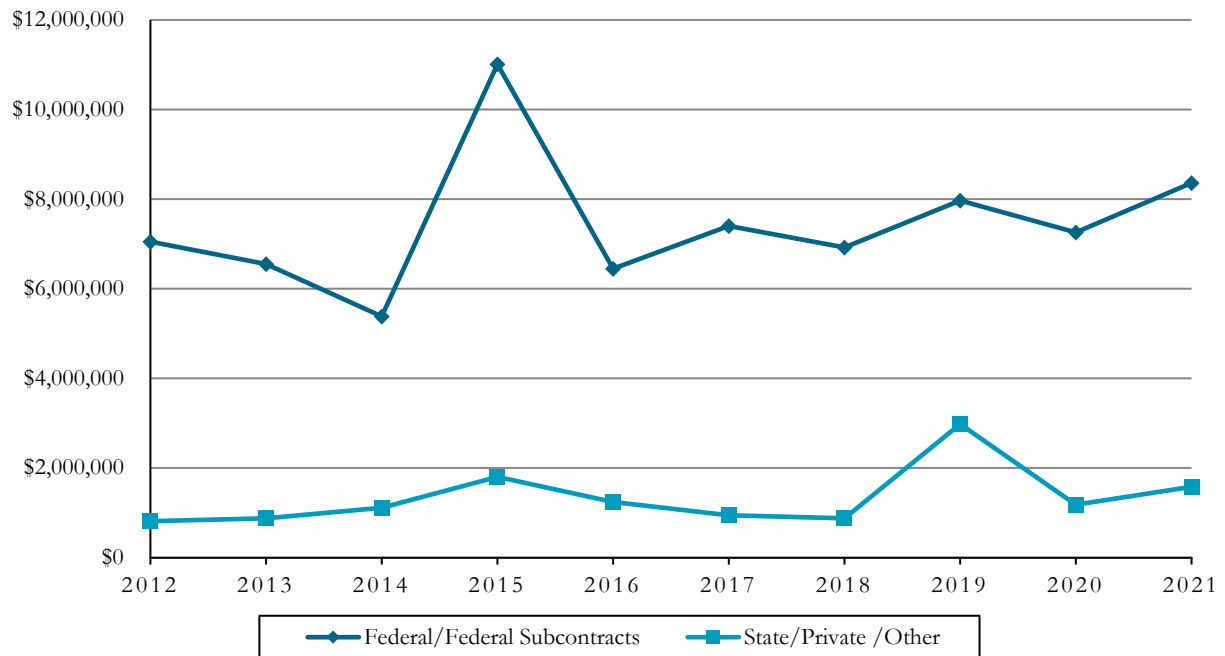
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|--------------------------|-------------------------|--------------------------|-------------|-----------------|
| Chemistry & Biochemistry | 27 | 55 | 40 | \$4,521,543 |
| Computer Science | 6 | 11 | 8 | \$1,038,190 |
| Geology | 5 | 9 | 6 | \$386,079 |
| Mathematics | 14 | 23 | 9 | \$417,199 |
| Mathematics Education | 2 | 2 | 0 | \$0 |
| Physics & Astronomy | 18 | 36 | 32 | \$2,793,937 |
| Statistics | 1 | 2 | 6 | \$782,800 |
| TOTALS | 73 | 138 | 101 | \$9,939,748 |

Proposal Submissions



Awards by Sources

| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|--------------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$7,049,532 | \$813,628 | \$7,963,160 |
| 2013 | \$6,548,760 | \$878,540 | \$7,408,208 |
| 2014 | \$5,382,972 | \$1,113,596 | \$6,496,568 |
| 2015 | \$11,009,182 | \$1,803,190 | \$12,812,372 |
| 2016 | \$6,447,585 | \$1,239,899 | \$7,687,484 |
| 2017 | \$7,399,801 | \$944,244 | \$8,344,045 |
| 2018 | \$6,919,640 | \$878,316 | \$7,797,956 |
| 2019 | \$7,967,960 | \$2,983,216 | \$10,951,176 |
| 2020 | \$7,256,305 | \$1,180,566 | \$8,436,871 |
| 2021 | \$8,358,774 | \$1,580,974 | \$9,939,748 |



College of Physical & Mathematical Sciences 2020 Awards

| <u>Researcher</u> | <u>Role</u> | <u>Sponsor</u> | <u>Prime Sponsor</u> | <u>Title</u> | <u>Beg Date</u> | <u>End Date</u> | <u>Account</u> | <u>Amount</u> |
|--|-------------|-------------------------------|-------------------------------|---|-----------------|-----------------|----------------|---------------|
| <i>Chemistry & Biochemistry</i> | | | | | | | | |
| Asplund, Matthew | Co-PI | National Science Foundation | | Ambient Level OH Radical Detection Using Broadband Cavity Enhanced Absorption Spectroscopy (BBCEAS) in an Open-Path Configuration | Aug-21 | Jul-22 | RO112467 | \$118,927 |
| Castle, Steven | PI | Eli Lilly and Company | | Development of Sustainable and Industrially Viable Peptide Ligation Methods | Aug-21 | Aug-23 | RO602664 | \$264,999 |
| Christensen, Ken | Co-PI | National Institutes of Health | | High Density 3D Printed Microfluidics for Cell-Based Biomedical Applications | Sep-20 | Aug-23 | RO102108 | \$14,346 |
| Christensen, Ken | PI | Clemson University | National Institutes of Health | Development of a multiplexed assay in kinetoplastid parasites to identify probes for glycolysis | Apr-21 | Mar-22 | RO302983 | \$64,743 |
| Ess, Dan | PI | National Science Foundation | | Collaborative Research: Development and Assessment of Interactive Organic Reaction Animations (IORA) a Smartphone Application Based on Quantum-Mechanical Simulations | Oct-21 | Sep-24 | RO112470 | \$49,523 |
| Ess, Dan | PI | National Science Foundation | | REU/RET Site: Chemistry and Biochemistry REU Site to Prepare Students for Graduate School and an Industrial Career | Sep-21 | Aug-24 | RO112454 | \$88,740 |
| Ess, Dan | PI | Department of Energy | | Theory of Main-group, P-Block Hydrocarbon Functionalization Reactions | Sep-17 | Sep-22 | RO202502 | \$68,153 |
| Ess, Dan | PI | Rice University | National Institutes of Health | Defining Evolutionary Trajectories: Molecular adaptation to antibiotic resistance | Apr-21 | Mar-22 | RO302902 | \$32,144 |
| Ess, Dan | PI | Utah State University | National Institutes of Health | Nickel Catalyzed Electrochemical C-C Cross-Coupling Reactions | Aug-21 | Jul-22 | RO303016 | \$42,127 |
| Ess, Dan | PI | National Science Foundation | | REU/RET Site: Chemistry and Biochemistry REU Site to Prepare Students for Graduate School and an Industrial Career | Sep-21 | Aug-24 | RO112453 | \$36,750 |

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|------------------|-------|---|---------------------------|---|--------|--------|----------|-----------|
| Ess, Dan | PI | Chevron Phillips Chemical | | Optimization of Homogeneous Alpha Olefin Catalysts | Dec-13 | Dec-21 | RO602446 | \$160,000 |
| Hanson, Jaron | PI | National Science Foundation | | Ambient Level OH Radical Detection Using Broadband Cavity Enhanced Absorption Spectroscopy (BBCEAS) in an Open-Path Configuration | Aug-21 | Jul-22 | RO112467 | \$118,927 |
| Johnson, Jeremy | PI | National Science Foundation | | Repurposing Crystalline Materials for Strong Terahertz Generation | Sep-21 | Aug-24 | RO112465 | \$90,567 |
| Kelly, Ryan | Co-PI | National Institutes of Health | | Biochemical Consequences of Regiospecific Metabolic Bias in the Brain | May-20 | Feb-22 | RO102103 | \$147,563 |
| Kelly, Ryan | PI | National Institutes of Health | | Fully Automated and Ultra-high Throughput Platform for In-depth Single Cell Proteomics | Sep-20 | Aug-22 | RO102106 | \$165,263 |
| Kelly, Ryan | PI | Bristol-Myers Squibb Company | | Innovation Grant: Nanoscale Proteomics | Jul-20 | Jun-21 | RO602603 | \$125,000 |
| Kelly, Ryan | PI | Biogen | | Leveraging NanoPOTS for neuronal proteomics in human motor neuron disease | Jun-21 | Dec-21 | RO602595 | \$74,827 |
| Kelly, Ryan | PI | Fred Hutchinson Cancer Research Center | National Cancer Institute | Clinical translation of a NexGen platform for quantifying protein networks in human biospecimens | Jul-21 | Jun-22 | RO302954 | \$33,476 |
| Kelly, Ryan | PI | ThermoFisher Scientific | | Optimization of the Next Generation Analytical Proteomics Platform For Limited Samples (low protein amounts) to Single Cells | Mar-21 | Mar-23 | RO602655 | \$100,000 |
| Linford, Matthew | PI | Restek Corporation | | ALD on Materials for Sample Preparation and Chromatography, and SPME | Dec-20 | Dec-22 | RO602619 | \$65,000 |
| Linford, Matthew | PI | Corning Incorporated | | Expanding BYU's Tag and Count Methodology to Multicomponent Glass Samples | Dec-21 | Apr-22 | RO602677 | \$35,000 |
| Michaelis, David | Co-PI | National Science Foundation | | Repurposing Crystalline Materials for Strong Terahertz Generation | Sep-21 | Aug-24 | RO112465 | \$90,567 |
| Michaelis, David | Co-PI | Rio Tinto Kennecott | | Improving Vegetation Establishment on Kennecott Mine Waste Rock Dumps and Tailings | Jun-20 | Dec-21 | RO602635 | \$25,435 |
| Michaelis, David | Co-PI | Rio Tinto Kennecott | | Improving Vegetation Establishment on Kennecott Mine Waste Rock Dumps and Tailings | Jun-20 | Dec-21 | RO602635 | \$20,000 |
| Patterson, James | PI | Naval Air Warfare Center Weapons Division | Department of Defense | Determination of the Effects of Thermal and Mechanical Stress on PBX Binder Materials and the HE/Binder Interface | Apr-21 | Mar-22 | RO202517 | \$149,999 |
| Patterson, James | PI | Acushnet Company | | Characterization of Damage Accumulation in Titanium with Optical Second Harmonic Generation | Aug-21 | Dec-24 | RO602667 | \$10,995 |
| Price, John | PI | National Institutes of Health | | Biochemical Consequences of Regiospecific Metabolic Bias in the Brain | May-20 | Feb-22 | RO102103 | \$147,563 |

| | | | | | | | | |
|-----------------|-------|--------------------------------------|-------------------------------|--|--------|--------|----------|-----------|
| Price, John | Co-PI | Clemson University | National Institutes of Health | Development of a multiplexed assay in kinetoplastid parasites to identify probes for glycolysis | Apr-21 | Mar-22 | RO302983 | \$64,743 |
| Sansom, Rebecca | Co-PI | National Science Foundation | | REU/RET Site: Chemistry and Biochemistry REU Site to Prepare Students for Graduate School and an Industrial Career | Sep-21 | Aug-24 | RO112454 | \$86,130 |
| Sansom, Rebecca | PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | RO112461 | \$5,440 |
| Sansom, Rebecca | PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | RO112460 | \$141,418 |
| Sansom, Rebecca | PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | RO112460 | \$5,440 |
| Sansom, Rebecca | PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | RO112461 | \$60,928 |
| Sansom, Rebecca | PI | National Science Foundation | | Developing Three-dimensional Science Teachers in Underserved Rural Settings | Sep-21 | Aug-25 | RO112460 | \$234,971 |
| Sansom, Rebecca | Co-PI | National Science Foundation | | REU/RET Site: Chemistry and Biochemistry REU Site to Prepare Students for Graduate School and an Industrial Career | Sep-21 | Aug-24 | RO112453 | \$36,750 |
| Savage, Paul | PI | Scripps Research Institute | National Institutes of Health | Biology of a-linked glycosylceramides in the immune system | Jan-20 | Dec-21 | RO302779 | \$75,000 |
| Savage, Paul | PI | Scripps Research Institute | National Institutes of Health | Development of the Next Generation of Conjugate Vaccines | Jul-20 | Jun-22 | RO302803 | \$165,000 |
| Savage, Paul | PI | Scripps Research Institute | National Institutes of Health | Mechanistic studies of combination adjuvants to target B cells in vaccines | Apr-21 | Mar-22 | RO302994 | \$87,840 |
| Savage, Paul | PI | Vanderbilt University Medical Center | National Institutes of Health | Molecular Basis of CD1D and Natural Killer T Cell Function | Aug-20 | Jul-22 | RO302883 | \$36,893 |
| Savage, Paul | PI | Georgia Institute of Technology | National Institutes of Health | Strategies for generating high affinity antibodies against Gram-negative bacteria | Mar-20 | Feb-21 | RO302900 | \$78,000 |
| Savage, Paul | PI | N8 Medical | | Collection Account for Royalty Payments | May-21 | Dec-21 | RO802005 | \$12,500 |
| Savage, Paul | PI | N8 Medical | | Collection Account for Royalty Payments | May-21 | Dec-21 | RO802005 | \$12,500 |
| Savage, Paul | PI | N8 Medical | | Collection Account for Royalty Payments | May-21 | Dec-21 | RO802005 | \$12,500 |
| Savage, Paul | PI | N8 Medical | | Collection Account for Royalty Payments | May-21 | Dec-21 | RO802005 | \$12,500 |

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|-------------------------|-------|-------------------------------|--------------------------|---|--------|--------|----------|-----------|
| Stowers, Kara | Co-PI | National Science Foundation | | REU/RET Site: Chemistry and Biochemistry REU Site to Prepare Students for Graduate School and an Industrial Career | Sep-21 | Aug-24 | RO112454 | \$86,130 |
| Stowers, Kara | Co-PI | National Science Foundation | | REU/RET Site: Chemistry and Biochemistry REU Site to Prepare Students for Graduate School and an Industrial Career | Sep-21 | Aug-24 | RO112453 | \$36,750 |
| Van Ry, Pam | PI | University of Washington | | Studies of AvB6 integrin binders in rodent models of idiopathic pulmonary fibrosis | Jan-20 | Jul-21 | RO802043 | \$9,660 |
| Watt, Richard | PI | Rocard Laboratories | | Development of Saliva Lateral Flow Diagnostic Tests for Covid-19: Applications for Early Identification and Treatment of High Risk Covid-19 Patients that Include Diabetes, and Hypertension. | Apr-21 | Dec-21 | RO602658 | \$22,500 |
| Willardson, Barry | PI | National Institutes of Health | | Structural Basis Chaperone | Sep-20 | Jun-21 | RO102110 | \$410,321 |
| Willardson, Barry | PI | National Institutes of Health | | Structural Basis Chaperone | Jul-21 | Jun-22 | RO102110 | \$385,887 |
| Woolley, Adam | Co-PI | National Institutes of Health | | High Density 3D Printed Microfluidics for Cell-Based Biomedical Applications | Sep-20 | Aug-23 | RO102108 | \$14,346 |
| Woolley, Adam | PI | National Institutes of Health | | 3D-Printed Integrated Microfluidic Devices for Preterm Birth Biomarker Analysis | Jul-21 | Jun-22 | RO102090 | \$86,765 |
| Computer Science | | | | | | | | |
| Crandall, Jacob | PI | Carnegie Mellon University | Office of Naval Research | Success: Self-Assessment and Understanding of Competence and Conditions to Ensure System Success | Jun-18 | May-22 | RO302806 | \$178,747 |
| Deccio, Casey | PI | Comcast Corporation | | Assessing the Accessibility and Vulnerability of DNS Resolvers | Mar-21 | Dec-25 | RO602654 | \$40,110 |
| Fulda, Nancy | Co-PI | National Science Foundation | | EAGER: Harnessing Accurate Bias in Large-Scale Language Models | Sep-21 | Feb-23 | RO112468 | \$24,292 |
| Fulda, Nancy | PI | Latitude | | Enchanted Forests Don't Have Supermarkets: Preserving Narrative Coherence in AI-Generated Interactive Fiction | Aug-21 | Aug-22 | RO602644 | \$15,003 |
| Goodrich, Michael | PI | Office of Naval Research | Department of Defense | Advancing Managed Bio-Inspired Collectives: Using an Analytical Model to Design and Evaluate Interfaces | Feb-21 | Feb-22 | RO202549 | \$345,393 |
| Goodrich, Michael | PI | Oregon State University | Office of Naval Research | A Formal Framework for Developing Resilient Teams of Heterogeneous Autonomous Agents | Aug-20 | Aug-22 | RO302835 | \$67,000 |
| Goodrich, Michael | Co-PI | Carnegie Mellon University | Office of Naval Research | Success: Self-Assessment and Understanding of Competence and Conditions to Ensure System Success | Jun-18 | May-22 | RO302806 | \$178,747 |

| | | | | | | | | |
|--------------------|-------|-------------------------------|---|--|--------|--------|----------|-----------|
| Holladay, Seth | PI | Epic Games | | Educational Film Pipelines using Unreal | Mar-21 | Feb-23 | RO602651 | \$50,000 |
| Snell, Quinn | Co-PI | Sandia National Laboratories | Department of Energy | Sandia cybersecurity camp sponsorship | Jul-21 | Sep-21 | RO303015 | \$9,900 |
| Wingate, David | PI | National Science Foundation | | CAREER: Blending Deep RL and Probabilistic Programming | Mar-17 | Feb-22 | RO112338 | \$104,706 |
| Wingate, David | PI | National Science Foundation | | EAGER: Harnessing Accurate Bias in Large-Scale Language Models | Sep-21 | Feb-23 | RO112468 | \$24,292 |
| Geology | | | | | | | | |
| Bickmore, Barry | Co-PI | US Army Corps of Engineers | Department of Defense | Improving Soil Classification ANALogs (I-SCAN) | Sep-21 | Mar-23 | RO202563 | \$69,577 |
| Carling, Greg | PI | National Science Foundation | | Collaborative Research: Network Cluster: Dust in the Critical Zone from the Great Basin to the Rocky Mountains | Sep-21 | Aug-22 | RO112444 | \$72,145 |
| Carling, Greg | Co-PI | US Army Corps of Engineers | Department of Defense | Improving Soil Classification ANALogs (I-SCAN) | Sep-21 | Mar-23 | RO202563 | \$69,577 |
| Hudson, Sam | PI | Zanskar Geothermal & Minerals | | Basin-Centered Sedimentary Geothermal Systems of the Basin and Range: Pilot Study | Jan-22 | Aug-22 | RO602673 | \$19,500 |
| LeMonte, Josh | PI | US Army Corps of Engineers | Department of Defense | Improving Soil Classification ANALogs (I-SCAN) | Sep-21 | Mar-23 | RO202563 | \$71,685 |
| Radebaugh, Jani | PI | Johns Hopkins University | National Aeronautics and Space Administration | Dragonfly Phase B Bridge | Sep-19 | Dec-21 | RO302875 | \$74,145 |
| Radebaugh, Jani | PI | Johns Hopkins University | National Aeronautics and Space Administration | The Interior Life of Dunes | Jun-21 | Oct-21 | RO303004 | \$1,950 |
| Ritter, Scott | PI | University of Utah | Department of Energy | Reservoir Characterization and Petrology of the Cane Creek B Interval (Pennsylvanian), Paradox Basin, Utah | Oct-19 | Mar-22 | RO302901 | \$7,500 |
| Mathematics | | | | | | | | |
| Allen, Mark | PI | Simons Foundation | | Nonlocal Equations and Free Boundary Problems | Sep-19 | Aug-24 | RO502315 | \$8,400 |
| Andersen, Nickolas | PI | Simons Foundation | | Arithmetic applications of automorphic forms | Sep-21 | Aug-22 | RO502351 | \$8,400 |
| Boyd, Zachary | PI | National Science Foundation | | LEAPS-MPS: Structure and dynamics of global supply chain networks | Jan-22 | Dec-23 | RO112471 | \$249,999 |
| Fisher, Todd | PI | Simons Foundation | | Topological Pressure and Equilibrium States for Smooth Dynamic Systems | Sep-18 | Aug-23 | RO502274 | \$8,400 |
| Jarvis, Tyler | Co-PI | Tula Health, Inc | | TULA health - Non-Invasive health sensing | Apr-21 | Mar-22 | RO602659 | \$100,000 |

| | | | | | | | | |
|--------------------------------|-------|--|---|--|--------|--------|----------|-----------|
| Kent, Curt | PI | Simons Foundation | | Topology of Coarse Geometry Structures | Sep-18 | Aug-23 | R0502275 | \$8,400 |
| Lu, Kening | PI | Simons Foundation | | Complicated Dynamics for Infinite Dimensional Dynamical Systems | Sep-20 | Aug-25 | R0502329 | \$8,400 |
| Priddis, Nathan | PI | Simons Foundation | | Mirror Symmetry and the LG/CY Correspondence | Sep-18 | Aug-23 | R0502276 | \$8,400 |
| Webb, Ben | PI | Simons Foundation | | Interplay of Structure and Dynamics in Real-World Systems | Sep-20 | Aug-25 | R0502330 | \$8,400 |
| Whitehead, Jared | PI | Simons Foundation | | Analysis and Computation of Geophysical Fluid Dynamics | Sep-18 | Aug-23 | R0502277 | \$8,400 |
| Physics & Astronomy | | | | | | | | |
| Allred, David | PI | Jet Propulsion Laboratory | National Aeronautics and Space Administration | Development of tools and mechanisms useful in researching and mitigating particulate contamination on Spacecraft | Jan-22 | Apr-22 | R0303037 | \$16,000 |
| Anderson, Brian | PI | Los Alamos National Laboratory | Department of Energy | Source Signature Encryption and Super Resolution Imaging using Near Field Scattering | Jun-19 | Dec-22 | R0302863 | \$105,470 |
| Anderson, Brian | Co-PI | Michigan State | National Institutes of Health | Protecting Teacher's Voices: Investigating Risk Factors, Conducting Analysis | May-21 | Apr-22 | R0302986 | \$74,809 |
| Bergeson, Scott | PI | National Science Foundation | | Collaborative Research Proposal: Ultracold Neutral Plasmas as High Energy Density Plasma Simulators | Jun-20 | May-23 | R0112438 | \$124,740 |
| Boizelle, Benjamin | PI | Space Telescope Science Institute | National Aeronautics and Space Administration | Precision Measurement of Black Hole Masses in Early-Type Galaxies from the ALMA Archive | Apr-21 | Mar-23 | R0302987 | \$18,278 |
| Boizelle, Benjamin | PI | National Radio Astronomy Observatory (Associated Universities, Inc.) | National Science Foundation | An ALMA Archive Molecular Gas Census of Early-type Galaxies | Aug-21 | Jul-23 | R0303009 | \$10,000 |
| Colton, John | Co-PI | National Science Foundation | | REU-site: Physics Research at Brigham Young University | Mar-21 | Feb-24 | R0112456 | \$45,049 |
| Colton, John | Co-PI | National Science Foundation | | REU-site: Physics Research at Brigham Young University | Mar-21 | Feb-24 | R0112457 | \$140,244 |
| Davis, Robert | PI | Tula Health, Inc | | TULA health - Non-Invasive health sensing | Apr-21 | Mar-22 | R0602659 | \$100,000 |
| Frandsen, Benjamin | PI | Department of Energy | | Probing Short-Range Structure and Magnetism In Next-Generation Energy Conversion Materials | Sep-21 | Aug-22 | R0202542 | \$145,347 |
| Gee, Kent | PI | Office of Naval Research | | Connecting analyses of installed tactical jet engine noise with simulated and laboratory-scale data. | Dec-20 | Dec-23 | R0202547 | \$223,738 |
| Gee, Kent | PI | Ball Aerospace & Technologies Corp | Department of Defense | Investigating impact of reflections in impulse noise data | Mar-21 | Mar-22 | R0302978 | \$44,858 |

| | | | | | | | | |
|------------------|-------|---|---|--|--------|--------|----------|-----------|
| Gee, Kent | PI | Los Alamos National Laboratory | Department of Energy | MEASUREMENTS OF LARGE-SCALE C4 DETONATIONS AT THE NEVADA NATIONAL SECURITY SITE | Dec-20 | Sep-21 | R0302963 | \$29,406 |
| Gee, Kent | PI | University of Utah | National Aeronautics and Space Administration | Utah Space Grant Consortium Proposal for National Space Grant College and Fellowship Program Opportunities in NASA STEM FY 2020-2024 | May-20 | May-22 | R0302995 | \$5,025 |
| Gee, Kent | Co-PI | Blue Ridge Research and Consulting | Army | Acoustic Background Noise Analysis for Mission Planning and Community Noise | Dec-18 | Sep-22 | R0302825 | \$10,000 |
| Gee, Kent | Co-PI | Blue Ridge Research and Consulting | Army | Acoustic Background Noise Analysis for Mission Planning and Community Noise | Dec-18 | Sep-22 | R0302825 | \$9,951 |
| Hart, Grant | Co-PI | University of Utah | National Aeronautics and Space Administration | Utah Space Grant Consortium Proposal for National Space Grant College and Fellowship Program Opportunities in NASA STEM FY 2020-2024 | May-20 | May-22 | R0302995 | \$5,025 |
| Hintz, Eric | PI | University of Utah | National Aeronautics and Space Administration | Utah Space Grant Consortium Proposal for National Space Grant College and Fellowship Program Opportunities in NASA STEM FY 2020-2024 | May-20 | May-22 | R0302998 | \$2,500 |
| Hirschmann, Eric | Co-PI | National Aeronautics and Space Administration | | Binary black hole waveforms for LISA using numerical relativity | Jan-20 | Jan-23 | R0162042 | \$72,351 |
| Neilsen, David | PI | National Aeronautics and Space Administration | | Binary black hole waveforms for LISA using numerical relativity | Jan-20 | Jan-23 | R0162042 | \$72,351 |
| Neilsen, Traci | PI | Office of Naval Research | Department of Defense | Informational Geometry for Optimal Design of Geoacoustic Inversions | Jul-21 | Jul-24 | R0202555 | \$57,500 |
| Neilsen, Traci | Co-PI | Office of Naval Research | Department of Defense | A re-configurable testbed for autonomous heterogeneous marine mapping, sensing, and search | Mar-21 | Mar-22 | R0202550 | \$104,631 |
| Neilsen, Traci | Co-PI | Office of Naval Research | Department of Defense | A re-configurable testbed for autonomous heterogeneous marine mapping, sensing, and search | Mar-21 | Mar-22 | R0202550 | \$104,631 |
| Neilsen, Traci | PI | KSA, LLC | Department of Defense | Through the Sensor Statistical Inference Module (SIM) for Assessing Predictions made on SSNs | Dec-18 | Apr-22 | R0302848 | \$25,000 |
| Peatross, Justin | PI | National Science Foundation | | Polarization Resolved Single-Photon Measurements of Nonlinear Thompson Scattering | Jul-17 | Jun-22 | R0112356 | \$17,550 |
| Ragozzine, Darin | PI | Arizona State University | National Aeronautics and Space Administration | Haumea: Internal Structure and Collisional Family | Oct-18 | Oct-21 | R0302844 | \$86,931 |
| Ragozzine, Darin | PI | Space Telescope Science Institute | National Aeronautics and Space Administration | Toward a more complete understanding of Haumea's family tree | Dec-20 | Nov-23 | R0302962 | \$14,900 |

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|--------------------------|-------|---|---|--|--------|--------|----------|-----------|
| Ragozzine, Darin | PI | Large Synoptic Survey Telescope Corporation | National Aeronautics and Space Administration | Leveraging Solar System Science with Advanced Dynamical Characterization | Aug-21 | Dec-21 | R0502352 | \$5,000 |
| Sandberg, Richard | PI | Department of Energy | | Tracking intergranular strain dynamics with near-atomic scale coherent x-ray imaging at next generation light sources | Aug-21 | Jul-22 | R0202562 | \$180,401 |
| Sandberg, Richard | PI | SLAC National Accelerator Laboratory | Department of Energy | Development of high resolution, single shot, dynamic x-ray imaging | Feb-20 | Sep-24 | R0302895 | \$40,000 |
| Sandberg, Richard | PI | Los Alamos National Laboratory | Department of Energy | Development of rapid, three dimensional, nanometer scale x-ray imaging | Sep-20 | Aug-21 | R0302942 | \$32,550 |
| Sommerfeldt, Scott | PI | Caterpillar | | Acoustic Modeling of Resonators and Development of a Multi-Driver Volume Velocity Source | Jan-21 | Dec-21 | R0602437 | \$60,750 |
| Stephens, Denise | Co-PI | University of Utah | National Aeronautics and Space Administration | Utah Space Grant Consortium Proposal for National Space Grant College and Fellowship Program Opportunities in NASA STEM FY 2020-2024 | May-20 | May-22 | R0302998 | \$2,500 |
| Transtrum, Mark | Co-PI | Office of Naval Research | Department of Defense | Informational Geometry for Optimal Design of Geoacoustic Inversions | Jul-21 | Jul-24 | R0202555 | \$57,500 |
| Transtrum, Mark | Co-PI | National Institutes of Health | | Biochemical Consequences of Regiospecific Metabolic Bias in the Brain | May-20 | Feb-22 | R0102103 | \$147,563 |
| Transtrum, Mark | PI | National Science Foundation | | Collaborative Research: Reliable Materials Simulation based on the Knowledgebase of Interatomic Models | Oct-18 | Sep-22 | R0112397 | \$124,507 |
| Transtrum, Mark | PI | National Science Foundation | | NSF CAREER- Connecting Mathematical Models Across Scales | Apr-18 | Mar-23 | R0112430 | \$22,500 |
| Transtrum, Mark | Co-PI | KSA, LLC | Department of Defense | Through the Sensor Statistical Inference Module (SIM) for Assessing Predictions made on SSNs | Dec-18 | Apr-22 | R0302848 | \$25,000 |
| Transtrum, Mark | PI | Blue Ridge Research and Consulting | Army | Acoustic Background Noise Analysis for Mission Planning and Community Noise | Dec-18 | Sep-22 | R0302825 | \$10,000 |
| Transtrum, Mark | PI | Blue Ridge Research and Consulting | Army | Acoustic Background Noise Analysis for Mission Planning and Community Noise | Dec-18 | Sep-22 | R0302825 | \$9,951 |
| Transtrum, Mark | PI | Cornell University | National Science Foundation | Center for Bright Beams | Oct-16 | Sep-22 | R0302718 | \$105,688 |
| Van Huele, Jean-Francois | PI | National Science Foundation | | REU-site: Physics Research at Brigham Young University | Mar-21 | Feb-24 | R0112456 | \$45,049 |
| Van Huele, Jean-Francois | PI | National Science Foundation | | REU-site: Physics Research at Brigham Young University | Mar-21 | Feb-24 | R0112457 | \$140,244 |
| Van Huele, Jean-Francois | PI | Arizona State University | National Science Foundation | WAESO Quantum Thermodynamics | May-21 | Sep-21 | R0302993 | \$450 |

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|--------------------------|-------|-----------------------------------|---|--|--------|--------|----------|-----------|
| Van Huele, Jean-Francois | PI | Arizona State University | National Science Foundation | WAESO Quantum Thermodynamics II | Aug-21 | Jun-22 | RO303020 | \$450 |
| Vanfleet, Richard | Co-PI | Tula Health, Inc | | TULA health - Non-Invasive health sensing | Apr-21 | Mar-22 | RO602659 | \$100,000 |
| Ware, Michael | Co-PI | National Science Foundation | | Polarization Resolved Single-Photon Measurements of Nonlinear Thompson Scattering | Jul-17 | Jun-22 | RO112356 | \$17,550 |
| Statistics | | | | | | | | |
| Christensen, William | Co-PI | University of Utah | National Aeronautics and Space Administration | Bayesian quantification of Antarctic surface mass balance | May-16 | May-20 | RO302675 | \$2,500 |
| Christensen, William | Co-PI | University of Utah | National Aeronautics and Space Administration | Precipitation & Glacier Mass Balance in High Mountain Asia Over the Common Era | Aug-16 | Apr-21 | RO302695 | \$2,500 |
| Heaton, Matt | PI | National Science Foundation | | Point Process Models for Traffic Risk Analysis and Crash Prevention | Aug-21 | Jul-24 | RO112446 | \$49,985 |
| Heaton, Matt | PI | University of Utah | National Aeronautics and Space Administration | Historical and Future Precipitation and Glacier Changes in High Mountain Asia | Aug-20 | Aug-22 | RO302960 | \$40,641 |
| Heaton, Matt | Co-PI | Utah State University | Department of Agriculture | Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture | Jul-19 | Jun-21 | RO302891 | \$12,565 |
| Heaton, Matt | Co-PI | Utah State University | Department of Agriculture | Identifying Stacked Conservation Practices that Optimize Water Use in Agriculture | Jul-19 | Jun-21 | RO302891 | \$5,276 |
| Peterson, Alex | PI | National Science Foundation | | CRCNS US-French Research Proposal: Advanced Spatiotemporal Statistical Models for Quantification and Estimation of Functional Connectivity: Q-FunC | Aug-21 | Dec-23 | RO112463 | \$371,132 |
| Peterson, Alex | PI | National Science Foundation | | Statistical Modelling of Multivariate Functional and Distributional Data | Jun-21 | Jun-22 | RO112458 | \$8,383 |
| Reese, Shane | PI | University of Utah | National Aeronautics and Space Administration | Bayesian quantification of Antarctic surface mass balance | May-16 | May-20 | RO302675 | \$2,500 |
| Reese, Shane | PI | University of Utah | National Aeronautics and Space Administration | Precipitation & Glacier Mass Balance in High Mountain Asia Over the Common Era | Aug-16 | Apr-21 | RO302960 | \$2,500 |
| Reese, Shane | PI | University of Utah | National Aeronautics and Space Administration | Historical and Future Precipitation and Glacier Changes in High Mountain Asia | Aug-20 | Aug-22 | RO302960 | \$40,641 |
| Tolley, Dennis | Co-PI | National Institutes of Health | | 3D-Printed Integrated Microfluidic Devices for Preterm Birth Biomarker Analysis | Jul-21 | Jun-22 | RO102090 | \$84,213 |
| Warr, Richard | Co-PI | National Science Foundation | | Point Process Models for Traffic Risk Analysis and Crash Prevention | Aug-21 | Jul-24 | RO112446 | \$49,985 |
| Warr, Richard | Co-PI | Utah Department of Transportation | | BYU SAFETY MODELING FY21 | Apr-21 | Dec-22 | RO402367 | \$59,994 |

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|---------------|-------|-----------------------------------|---|--------|--------|----------|----------|
| White, Philip | Co-PI | National Science Foundation | Point Process Models for Traffic Risk Analysis and Crash Prevention | Aug-21 | Jul-24 | RO112446 | \$49,985 |
|---------------|-------|-----------------------------------|---|--------|--------|----------|----------|

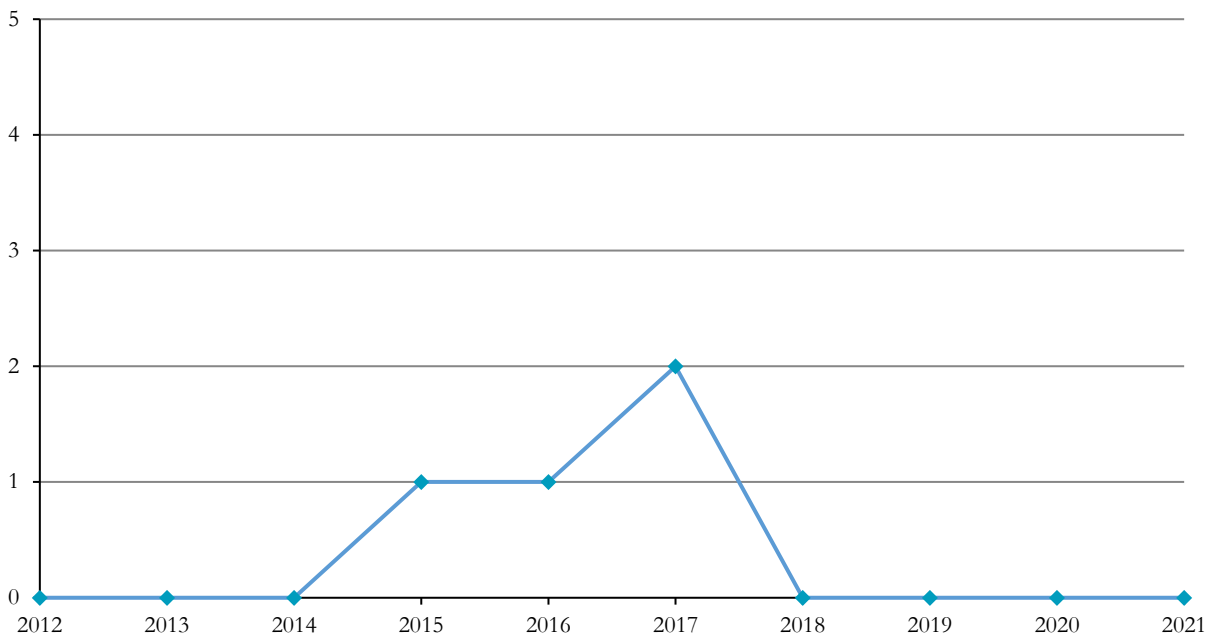


Religious Education

Summary by Departments

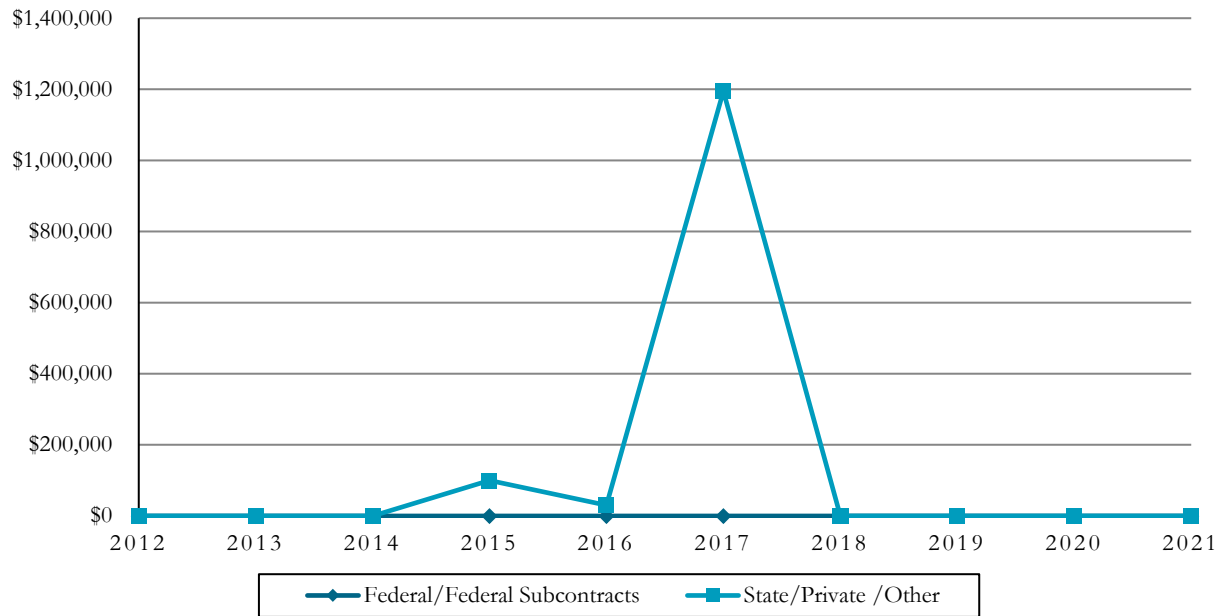
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|---------------------------|-------------------------|--------------------------|-------------|-----------------|
| Ancient Scripture | 0 | 0 | 0 | \$0 |
| Church History & Doctrine | 0 | 0 | 0 | \$0 |
| <i>TOTALS</i> | 0 | 0 | 0 | \$0 |

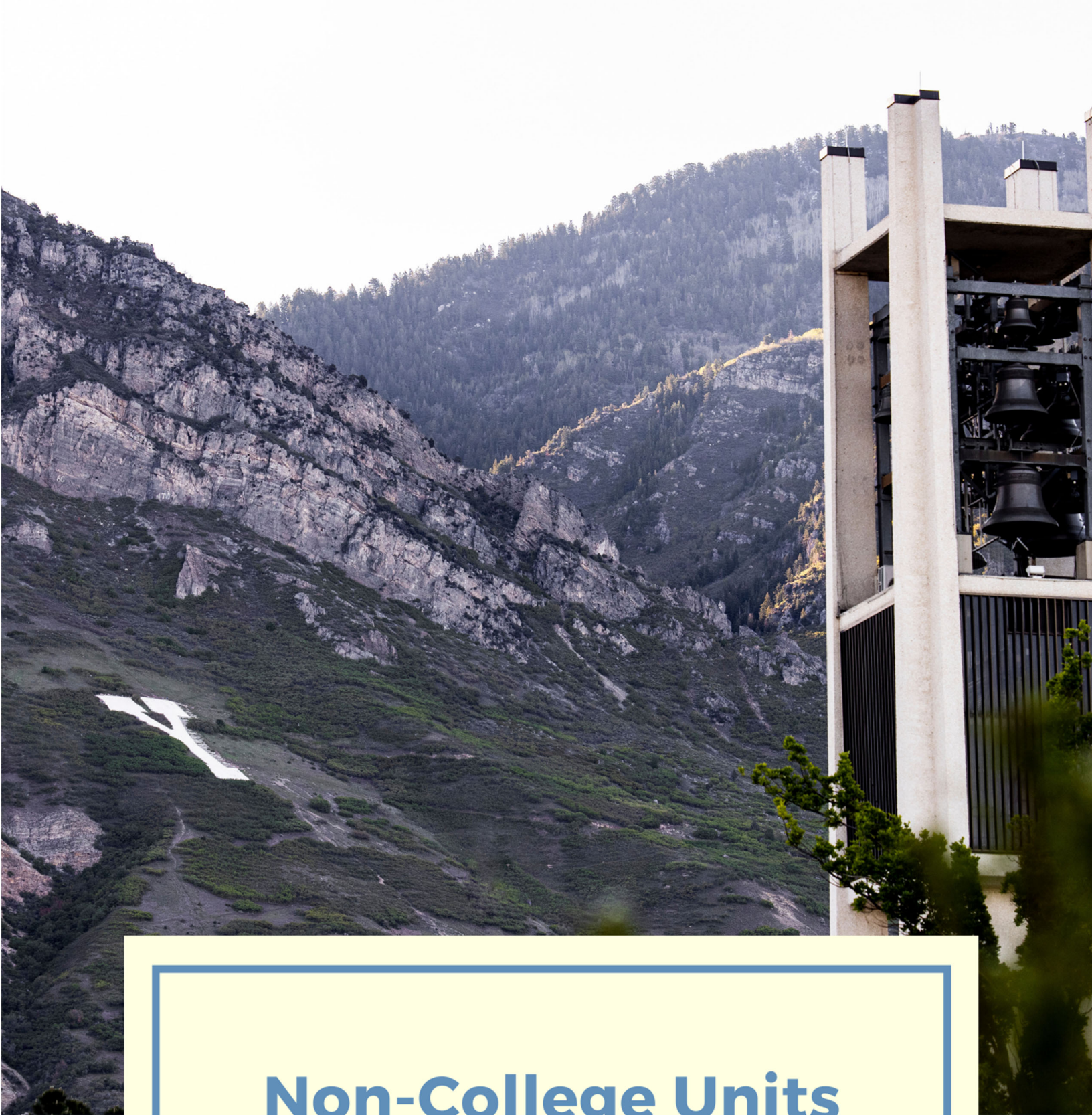
Proposal Submissions



Awards by Sources

| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|-------------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$0 | \$0 | \$0 |
| 2013 | \$0 | \$0 | \$0 |
| 2014 | \$0 | \$0 | \$0 |
| 2015 | \$0 | \$100,000 | \$100,000 |
| 2016 | \$0 | \$30,000 | \$30,000 |
| 2017 | \$0 | \$1,194,811 | \$1,194,811 |
| 2018 | \$0 | \$0 | \$0 |
| 2019 | \$0 | \$0 | \$0 |
| 2020 | \$0 | \$0 | \$0 |
| 2021 | \$0 | \$0 | \$0 |



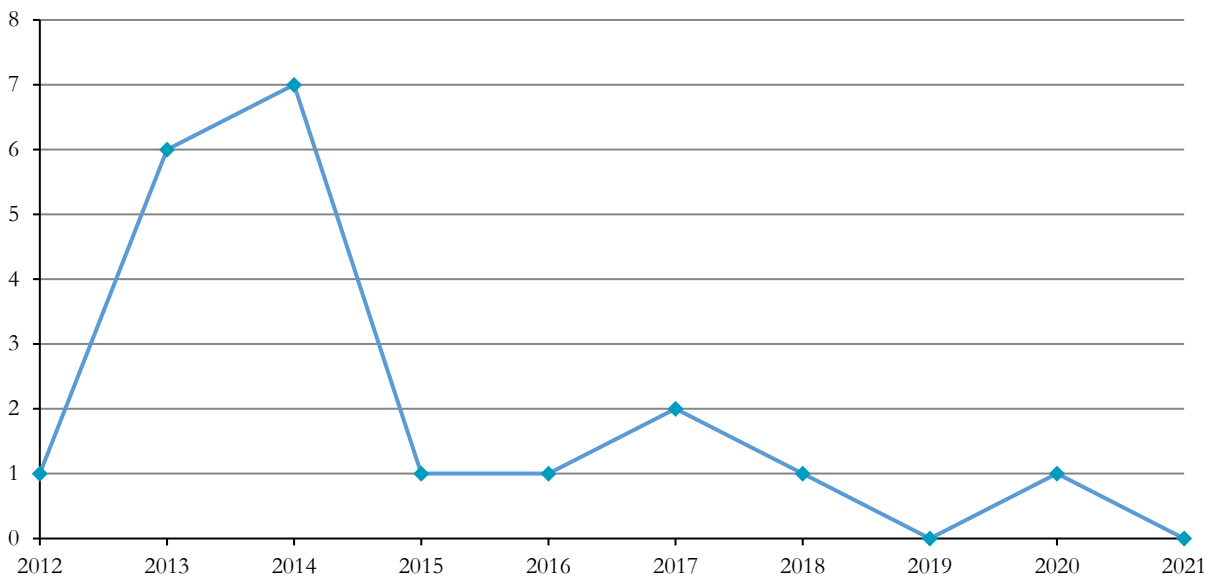


Non-College Units

Summary by Units

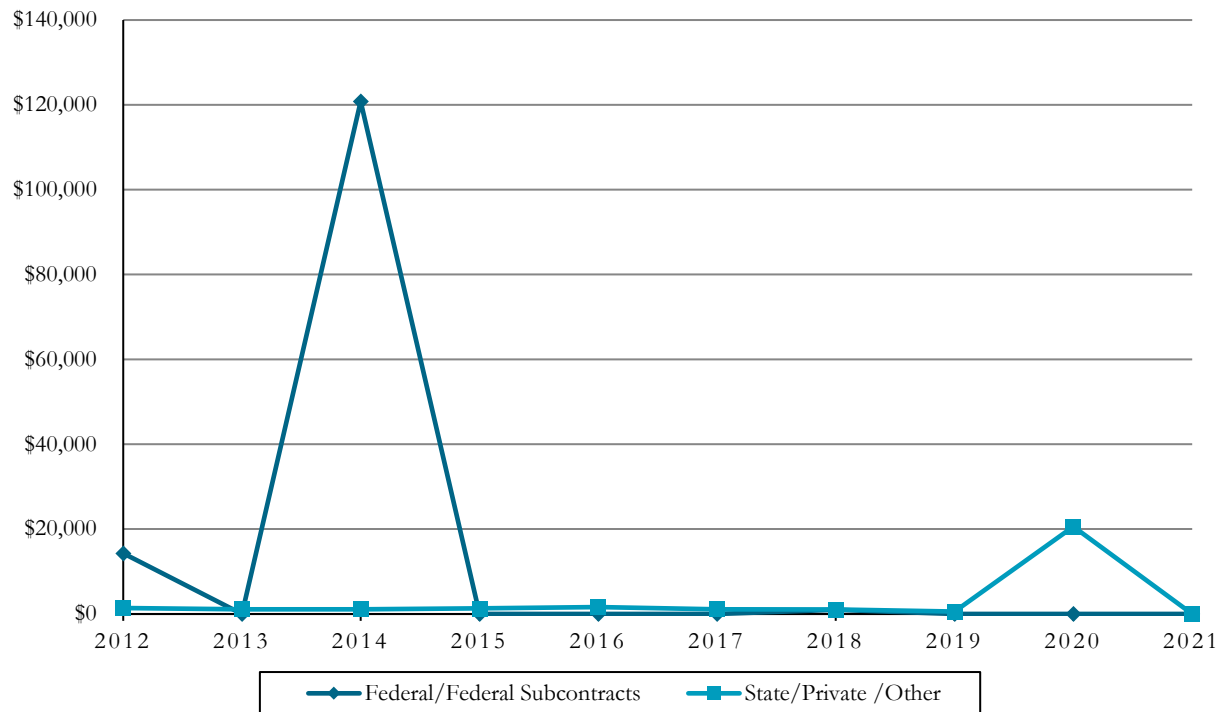
| Department | # of Faculty Submitting | # of Proposals Submitted | # of Awards | Dollars Awarded |
|--------------------------------|-------------------------|--------------------------|-------------|-----------------|
| Harold B. Lee Library | 0 | 0 | 0 | \$0 |
| Research Administration Office | 0 | 0 | 0 | \$0 |
| TOTALS | 0 | 0 | 0 | \$0 |

Proposal Submissions



Awards by Sources

| Year | Grants/Contracts | | Total |
|------|------------------------------|----------------------|-----------|
| | Federal/Federal Subcontracts | State/Private /Other | |
| 2012 | \$14,281 | \$1,380 | \$15,661 |
| 2013 | \$0 | \$1,047 | \$1,047 |
| 2014 | \$120,816 | \$1,066 | \$121,816 |
| 2015 | \$0 | \$1,300 | \$1,300 |
| 2016 | \$0 | \$1,588 | \$1,588 |
| 2017 | \$0 | \$1,045 | \$1,045 |
| 2018 | \$935 | \$1,027 | \$1,962 |
| 2019 | \$0 | \$550 | \$550 |
| 2020 | \$0 | \$20,572 | \$20,572 |
| 2021 | \$0 | \$0 | \$0 |





Compliance Committees

There are a number of federal, state, and university regulations which are intended to ensure the safety and well-being of those associated with research and creative activities at academic institutions. The Research Administration Office specifically supports three university committees and provides other certifications as needed. This page contains a record of official actions taken by these committees during the January 2021 through December 2021 time period. In addition to those official actions, the committee—their individual chairs and members—and the RAO staff actively reviewed facilities, developed and updated policies, and educated the university research community on pertinent issues. The following is a brief description of each committee.

The Institutional Animal Care and Use Committee (IACUC)

The IACUC ensures appropriate housing, care, and humane treatment of animals used in research or other academic activities. RAO supports this committee and maintains the university's "Assurance" status with federal agencies. The "Assurance" document is a way of accrediting BYU to maintain and work with laboratory animals. During 2021, the IACUC accomplished the following:

- 12 IACUC meetings
- processed over 200 submissions, including 21 new protocols, 15 study amendments, 90 personnel amendments, and 74+ other administrative actions
- developed a new protocol application
- completed semiannual facility inspections and program evaluations
- began development of a PAM process
- maintained 99 active IACUC protocols

The Institutional Biosafety Committee (IBC)

The IBC supervises the use of recombinant DNA and other biological safety and hazard issues at BYU. The Institutional Biosafety Committee must review all proposed experiments and approve such in advance of actual work. As with the other committees listed above, IBC has jurisdiction over any recombinant DNA experiments on campus--be they a part of funded or unfunded research or part of instructional activities. During 2021, the IBC accomplished the following:

- 7 IBC meetings
- processed over 31 submissions, including 9 new protocols, 1 study amendment, 5 personnel amendments, and 16+ other administrative actions
- passed annual CDC inspection (2021 was the 3-year registration renewal inspection)
- maintained 56 active IBC protocols

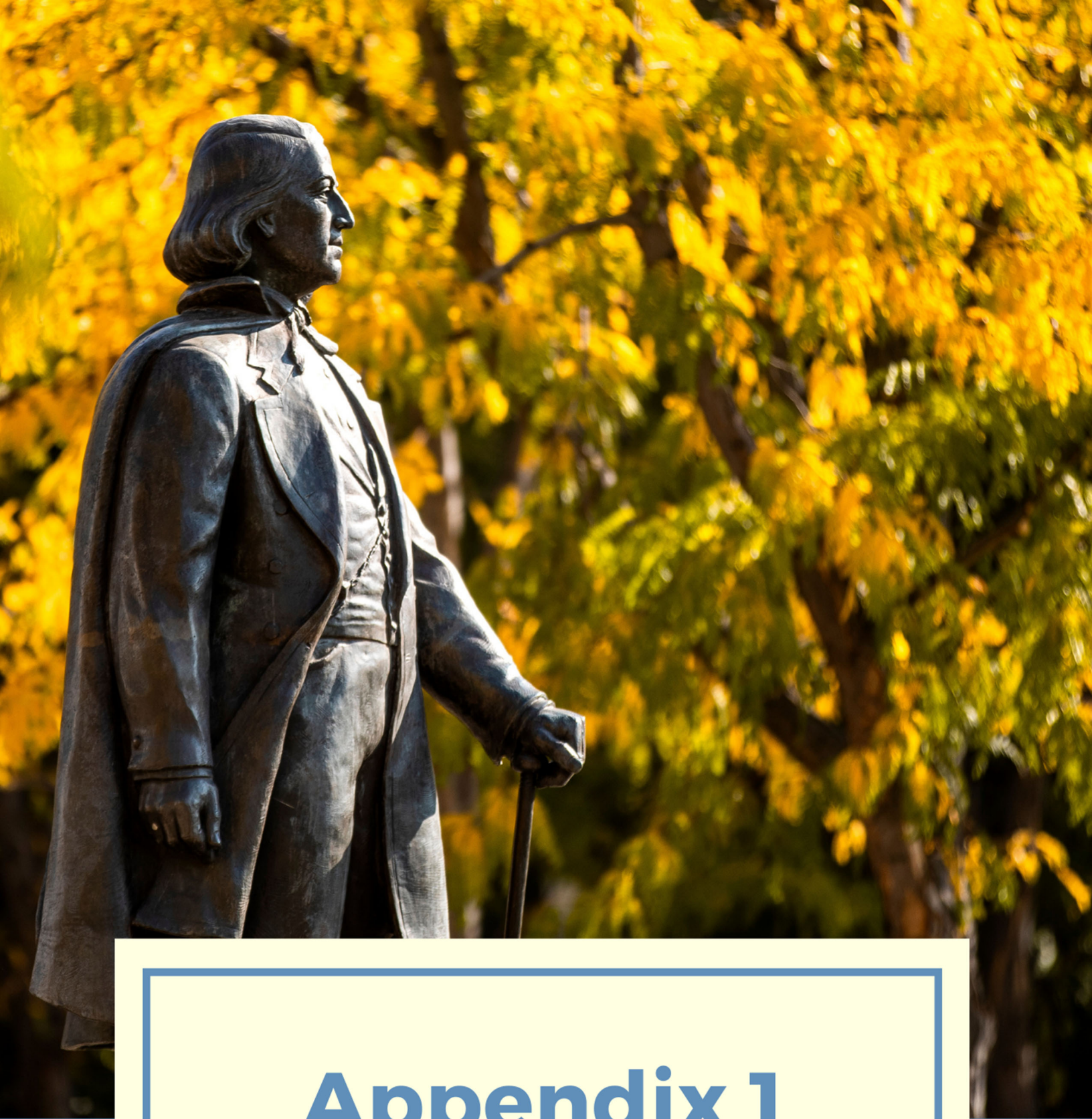
The Human Research Protections Program (HRPP)/Institutional Review Board (IRB)

The purpose and responsibility of the Human Research Protection Program (HRPP) are to protect the rights and welfare of human subjects. In its second year of existence, the HRPP works with other entities on campus that support human subject research. The HRPP brings together areas of BYU supporting or conducting human subject research and works in a collaborative effort to support all who participate, conduct, review, or facilitate human subject research. The HRPP, which oversees the IRB, is established to review all BYU human subjects research regardless of the source of funding.

The HRPP/IRB completed its second year using the online submission system, iRIS. The system enables online tracking, review, and post-approval compliance activities, it has also helped to achieve area goals, which are to be: Transparent, Efficient, Accountable, and Modern (TEAM). The system has created new ways HRPP tracks human subject research activities. The description below reflects new, more accurate ways to track human subject research activities that are not limited to new study submissions. Notably, IRB activity now tracks each instance a study is handled in the office.

The table below includes the number of human research study transactions in 2021. The trend in research activity has remained constant for the last 5 years, however, the number of total new submissions decreased in 2021 for two reasons: 1) the change in federal regulations in 2019 which allow for exempt studies and many expedited studies to continue without an expiration date, reducing the numbers of new applications and continuing review submissions; 2) the pandemic caused many investigators to halt active research to incorporate safety protocols in their studies or to wait for health trends in the community and travel restrictions abroad. The IRB experienced an increase of modification requests.

| 2021 Total Number of Applications | |
|--|--------------|
| Total Number of New Applications Submitted | 397 |
| Number of Applications Approved | 332 |
| Number of Modifications to Approved Studies | 411 |
| Continuing Reviews | 139 |
| Number of Submission Corrections | 1018 |
| Adverse Event Reports | 3 |
| Total Number of Protocol Transactions | 1,968 |



Appendix 1

The Research Administration Office

Purpose

The office exists to support students, staff, faculty, and BYU administration in their efforts to encourage and support research, creative activities, and other expressions of academic scholarship.

Functional Organization

The office is organized to provide service to sponsored research and creative activities and to provide supportive leadership to such policy matters as appropriate. The office is under the direction of the Associate Academic Vice President for Research and Graduate Studies. The office has a close relationship with the Technology Transfer Office and the Creative Works Office for coordination of certain pre-award contracts, with the Grants & Contracts Accounting Office for post-award grant and contract administration, and with the Faculty Personnel Office for payment of research compensation.

Personnel

Director: Gene Larson

Associate Director, Sponsored Projects: Debbie Silversmith

Research Administrator: Susie Quartey

Research Administrator: Maren Redd

Associate Director, HRPP: Sandee Aina

IRB Administrator: Wayne Larsen

IRB Secretary: Stephanie Coyne

IRB Secretary: Emily Gneiting

Associate Director, IACUC/IBC: Jason Jay

IACUC/IBC Coordinator: Regina McCarthy

University Veterinarian & Associate Director, LARC: Sandy Garrett

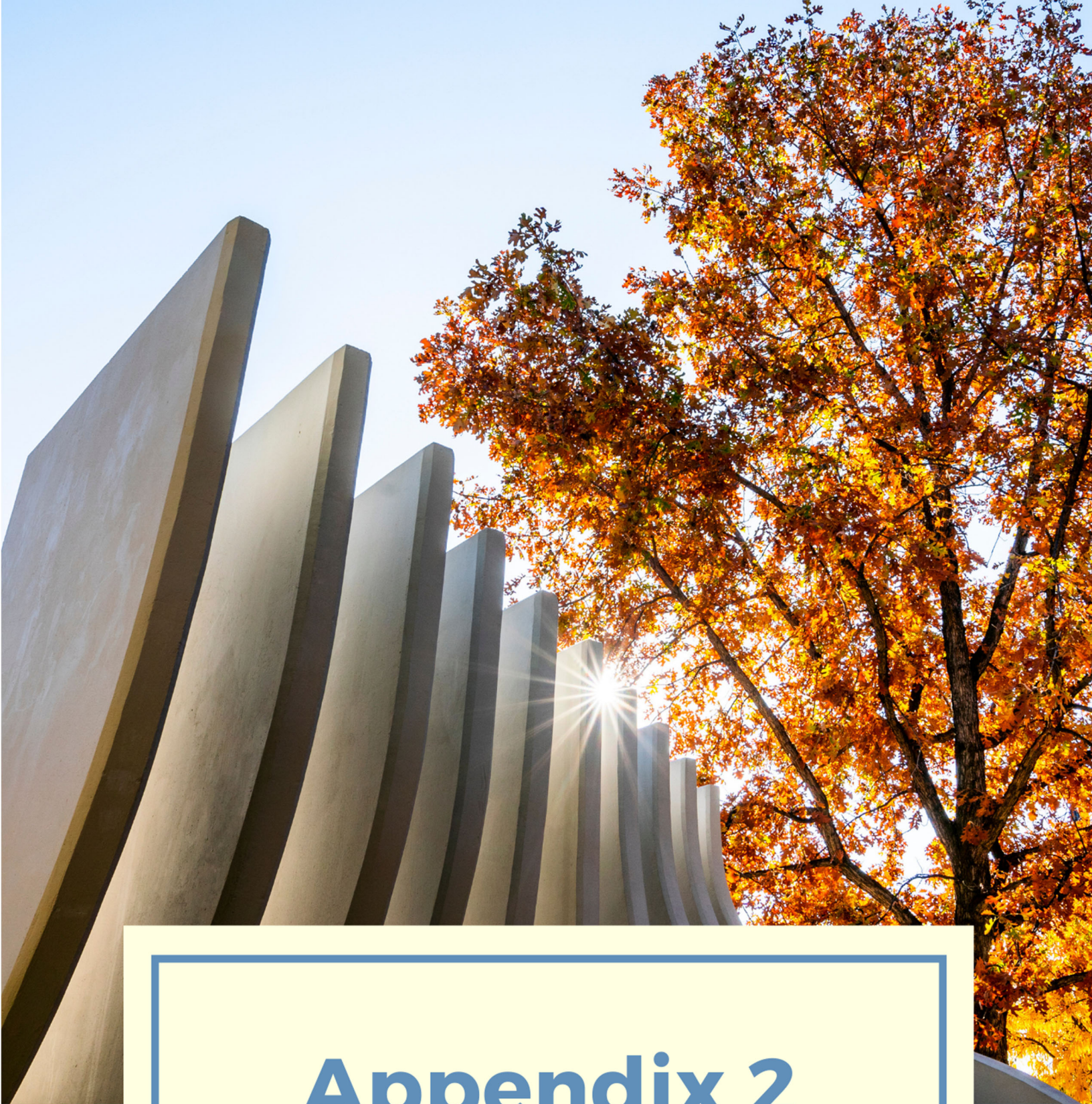
LARC Manager: Tarra Anderson

Assistant LARC Manager: Lindsey Edwards

Application Systems Manager: TBD

- 1) Policy Review and Development
 - ◆ Develop policies and procedures to foster research.
 - ◆ Publish policy brochures for dissemination to campus community.
 - ◆ Update BYU policies relevant to research and creative activities in the electronic handbook.
 - ◆ Monitor research accounts in conjunction with Grants & Contracts Accounting (GCA) to assure compliance with contract requirements, government regulations, and BYU policy.
- 2) Opportunity Coordination
 - ◆ Represent the university's research program to other research organizations, funding agencies, and other universities.
 - ◆ Monitor requests for proposals and deadlines.
 - ◆ Work with Research Development to disseminate information on funding opportunities to faculty.
 - ◆ Maintain PIVOT subscription to assist faculty in research funding searches.
- 3) Proposal Preparation and Submission
 - ◆ Provide support for faculty in using Kuali.
 - ◆ Coordinate the preparation of large, inter-collegiate, and inter-institutional research proposals.
 - ◆ Assist with proposal budgets and proposal processing for signatures.
 - ◆ Assist in developing process/software for budgets and forms.
 - ◆ Assist in creating, reviewing, approving, and submitting proposals in Kuali and to sponsors.
- 4) Negotiating and Interacting with Sponsors
 - ◆ Negotiate and manage grants and contracts.
 - ◆ Interface with sponsoring agencies to maintain awareness of research funding trends.
- 5) Compliance with Federal Regulations and Other Requirements
 - ◆ Monitor government regulations pertaining to federal grants and contracts.
 - ◆ Work with the Inventory Office to manage government property to assure compliance with federal regulations.
 - ◆ Assure compliance with reporting requirements and manage closeout documentation.
 - ◆ Oversee three compliance committees and assist them through secretarial support for meetings, correspondence, and proposal approval.
- 6) Negotiating and Interfacing with Subcontractors and Independent Contractors/Consultants
 - ◆ Negotiate terms of agreements or subcontracts.
 - ◆ Monitor agency regulations and BYU policy and procedures for stipulations concerning subcontracts and/or independent consultants/contractors.
 - ◆ Prepare contracts, amendments, payment documents, and initiate processing through the university.
 - ◆ Administer contractual terms between prime contractor (BYU) and subcontractors and or/consultants.

- 7) Project and Account Management (Post-Award)
 - ◆ Control assignment of account numbers and coordinate activation with GCA.
 - ◆ Monitor research accounts in conjunction with GCA to assure compliance with contract requirements, government regulations, and BYU policy.
 - ◆ Assist GCA with audits of project accounts.
 - ◆ Assure compliance with reporting requirements and manage closeout documents.
 - ◆ Act as a liaison between researchers and sponsors to facilitate management of projects.
 - ◆ Coordinate re-budget requests with GCA, PI, and Sponsors.
- 8) Financial Management
 - ◆ Document cost sharing processes and approvals.
 - ◆ Prepare and publish yearly financial reports in RAO Annual Report.
 - ◆ Monthly financial reports available on demand in Quali.
 - ◆ Process incoming funds from sponsors.
 - ◆ Monitor university compliance with appropriate federal and state financial regulations.
 - ◆ Assist with completion of annual audits.
- 9) University Negotiations/Trouble Shooting
 - ◆ Participate in DHHS indirect costs justification.
 - ◆ Direct negotiations with sponsors on problems such as termination or nonpayment of invoices.
- 10) Office Management
 - ◆ Host Annual Sponsored Research Luncheon and present Sponsored Research Award.
 - ◆ Assist in budget management and accounting of RAO accounts.
 - ◆ Compile an annual report of university research activities.
 - ◆ Monitor and compile Full-time Equivalency reports.
 - ◆ Assist in preparation of reports, NCE, and closeouts.
 - ◆ Maintain RAO website (<http://rao.byu.edu>).
 - ◆ Maintain back-up of RAO files.
 - ◆ Reconcile and merge CITI training records.
 - ◆ Grant access to users of iRIS.



Appendix 2

Compliance Obligations (As Per Federal Statute or Regulation)

The following pages list those areas where formal compliance to federal statutes and regulations is required to participate in federal funding. The full list is included to illustrate the range of possible certification or other compliance. Specific grants and contracts may involve only a subset of these compliance obligations.

Regulatory Framework

- Uniform Guidance
- Federal Acquisition Regulations (FAR)
- Defense Federal Acquisition Regulations (DFAR)
- Department of Energy Acquisition Regulations (DEAR)
- USAID Acquisition Regulations (AIDAR)
- HIPPA
- FFATA
- ITAR/EAR
- RCR – NSF
- E-Verify
- The Coordinated Review Process-Executive Order 12372
- Rights to Inventions Made by Nonprofit Organizations and Small Business Firms
- Compliance Information for Specific Circumstances
 - Facilities Management
 - Historic Preservation
 - Paperwork Reduction Act

Individual Rights

- Antidiscrimination
 - Civil Rights Act of 1964—Title VI
 - Employment of the Handicapped-Rehabilitation Act of 1973
 - Americans with Disabilities Act
 - Title IX—Sex Discrimination
 - Age Discrimination
 - Equal Employment Opportunity
 - Affirmative Action for Special Disabled and Vietnam Era Veterans
 - Utilization of Women-Owned Small Business
 - Utilization of Labor Surplus Area Concerns
 - Utilization of Small and Small Disadvantaged Business Concerns

Privacy

- Privacy Act of 1974
- Freedom of Information Act
- Confidentiality of Patient Records

Protection Issues

- Environmental Protection
 - Clean Air Act and Clean Water Act
 - Hazardous Materials

- Protection of Living Organisms
 - Human Subjects Compliance
 - Use of Animals in Research
 - Marine Mammal Act
 - Research Involving Recombinant DNA Molecules

Employee Directives

- Drug-free Workplace
- Drug-free Work Force
- Drug-free Schools and Campuses Act
- Lobbying
- Occupation Safety and Health
- David Bacon Act
- Walsh-Healey Public Contracts Act
- Service Contract Act
- Contract Work Hours and Safety Standards Act of 1962

Fraud, Waste, and Abuse

- Misconduct in Science
- Procurement Integrity
- Debarment and Suspension
- Covenant Against Contingent Fees
- Anti-Kickback Act of 1986
- Officials Not to Benefit

Specific Administrative Requirements

- General Requirements
 - Buy American Act
 - Fly American Act
 - Competition in Contracting
 - Export Administration Act and Arms Export Control Act
 - Insurance-Immunity from Tort Liability
 - Prompt Payment
 - Non-delinquency of Federal Debt
 - Certificate of Current Cost and Pricing Data
 - Acknowledgment of Federal Grant Support (Stevens Amendment)