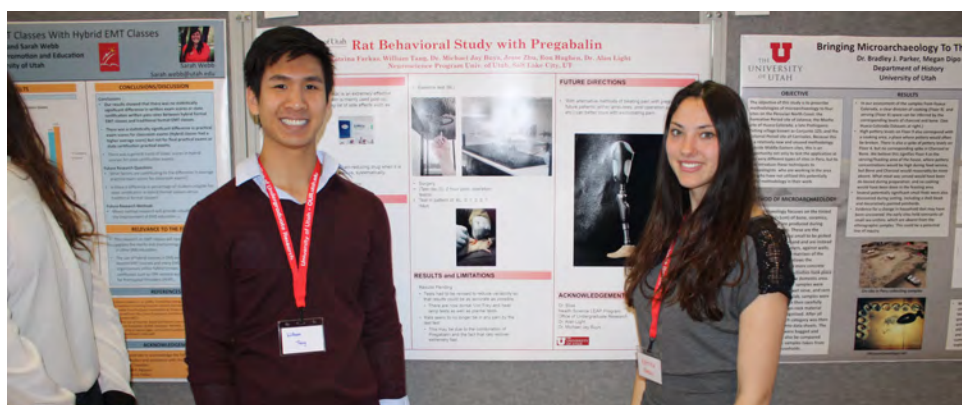


Office of Undergraduate Research

Annual Report 2014-2015



Rachel Hayes-Harb
Director

Stephanie Shiver
Undergraduate Research Advisor

Janet Opel
Administrative Manager

Cindy Greaves
Program Coordinator

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AY 2014-2015 Statistics at a Glance

UROP Award Statistics 2014-2015

Fall 2014: 206 (208 applications)
Spring 2015: 236 (267 applications)
Summer 2015: 116 (143 applications)
32% Honors students
52% male, 46% female, 2% genderqueer

Research Opportunity Postings

Currently 82 Research Opportunity Postings

URS 2015 Statistics

339 presentations (78 Oral, 261 Posters)
36% Honors students
51% female, 47% male, 2% genderqueer

UCUR/NCUR 2015 Statistics

67 University of Utah student presenters
42% Honors students
52% male, 46% female, 1% genderqueer

Undergraduate Research Journal 2015 Statistics

166 student submissions
49% Honors students
41% male, 57% female, 2% genderqueer

Small Grant Statistics 2014-2015

19 awards
33% Honors students
68% male, 32% female

Travel Grant Statistics 2014-2015

34 awards
40% Honors students
53% male, 47% female

Advising Statistics

118 advising appointments
since March 2015
20% Honors students
54% male, 46% female

RPOH 2015 Statistics

29 University of Utah student presenters
44% Honors students
52% male, 48% female

URSD Statistics 2014-2015

Summer 2014: 27
Fall 2014: 15
Spring 2015: 143
44% male, 56% female

Why Undergraduate Research?



A thriving undergraduate student research culture benefits students.

When we involve our undergraduate students in research, we demonstrate that we view them as colleagues in our pursuit of knowledge. Involvement in research can give students a sense of belonging, with their work forming a physical and/or intellectual home within the University. This is especially important at large institutions, as students crave an experience that is personal and allows them to work closely with faculty and other members of the academic community. Undergraduate research opportunities thus leverage some of our greatest assets as a Research I institution to the benefit of the student experience. In addition, we know that the experience of undergraduate research with a faculty mentor is associated with student retention and persistence to graduation.

A thriving undergraduate student research culture benefits faculty and scholarship.

The faculty experience is also enriched by research mentorship and collaboration with undergraduate students. Our undergraduate students bring new perspectives and enthusiasm for the work, and they are the future of our fields. By investing in our students, we are investing in the next generation of scholars.

A thriving undergraduate research culture benefits our community and our society in general.

Through research, students learn to navigate the nuances inherent to serious scholarly investigation and to interpret data responsibly and within a context. By collaborating with our students, we welcome students “into the fold” of the scholarly community, and a reflective and critical-thinking public contributes positively to the long-term health of our community and our society.

Being able to carry out my own research was an excellent opportunity that improved my understanding for the scientific process, and furthered my desire to pursue research as a career.

- UROP Recipient

Contributions to the Common Good

Our mission is to facilitate and promote undergraduate student-faculty collaborative research and creative works in all disciplines throughout the University of Utah campus.

Our office contributes to the primary goals of Undergraduate Studies as follows:

Every student belongs to a learning community.

We are responsible for the Undergraduate Research Living and Learning Community. The Living and Learning Community helps initiate the feeling of belonging to the scholarly community by providing incoming students with a structured living environment and additional opportunities and resources to explore research at the University. It helps support students' self-identification as interested and engaged students and members of society and thereby reinforces their participation in the intellectual community at the University and society at large.

Every student has at least one deeply engaged learning experience.

Our programs facilitate and promote student involvement in deeply engaged learning experiences. We provide support and guidance to undergraduate student researchers through every phase of the experience: discovery, research, dissemination, reflection, and recognition.

Every student has a Plan to Finish and is supported by student success advocates, mentors, and advisors.

Our Undergraduate Research Advisor is an available resource for students throughout the entire research process. By providing support and guidance throughout the students' involvement with our programs and by encouraging quality mentoring from faculty mentors, our office supports students' research and overall academic achievement. This in turn supports students' accomplishment of their Plan to Finish and bolsters retention and graduation rates.



Summary of Accomplishments 2014-2015



This experience has really opened my eyes to the world of research. I've learned that research is hard work but it can pay off and can be very rewarding.

- UROP Recipient

Increased efficiency and environmental sustainability.

We developed and implemented an entirely online system for student applications and event registration. We estimate our office's printing and copying expenditure to be less than 35% of that in FY 2014.

Enhanced record-keeping and reporting capacity.

We developed a sophisticated student database, allowing us to better track student data, and to more quickly and accurately provide reports to stakeholders.

Expanded the reach of our funding programs.

We introduced the Small Grant and Travel Grant programs, designed to support students across campus in their research endeavors (independent of any involvement in UROP). We have made efforts this past year to make our programs more inclusive, in terms of student diversity and also the diversity of disciplines supported by our office.

Educated undergraduate students about research.

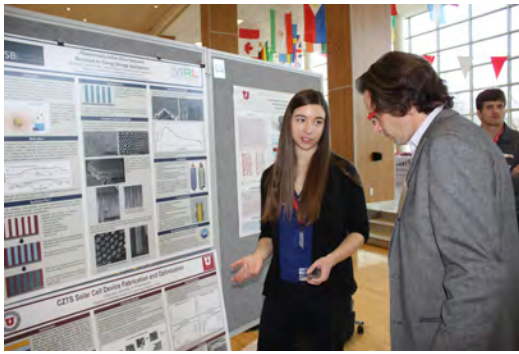
We introduced the Undergraduate Research Education series, designed specifically for undergraduate student researchers. We offered eight events each semester during AY 2014-2015.

Recognized and celebrated excellence in undergraduate student research.

We introduced the Outstanding Undergraduate Student Researcher Award, with one recipient from each of the 17 colleges/schools.

Built partnerships with stakeholders throughout the University.

In addition to collaboration with the Dean's office of each college/school, we have worked closely with the Bennion Center, the Honors College, the Center for Science and Math Education, the Interdisciplinary Design program, the Asia Center, Latina American Studies, and others.



Undergraduate Research Opportunities Program (UROP)

The Undergraduate Research Opportunities Program (UROP) provides undergraduate students and faculty members the opportunity to work together on research or creative projects.

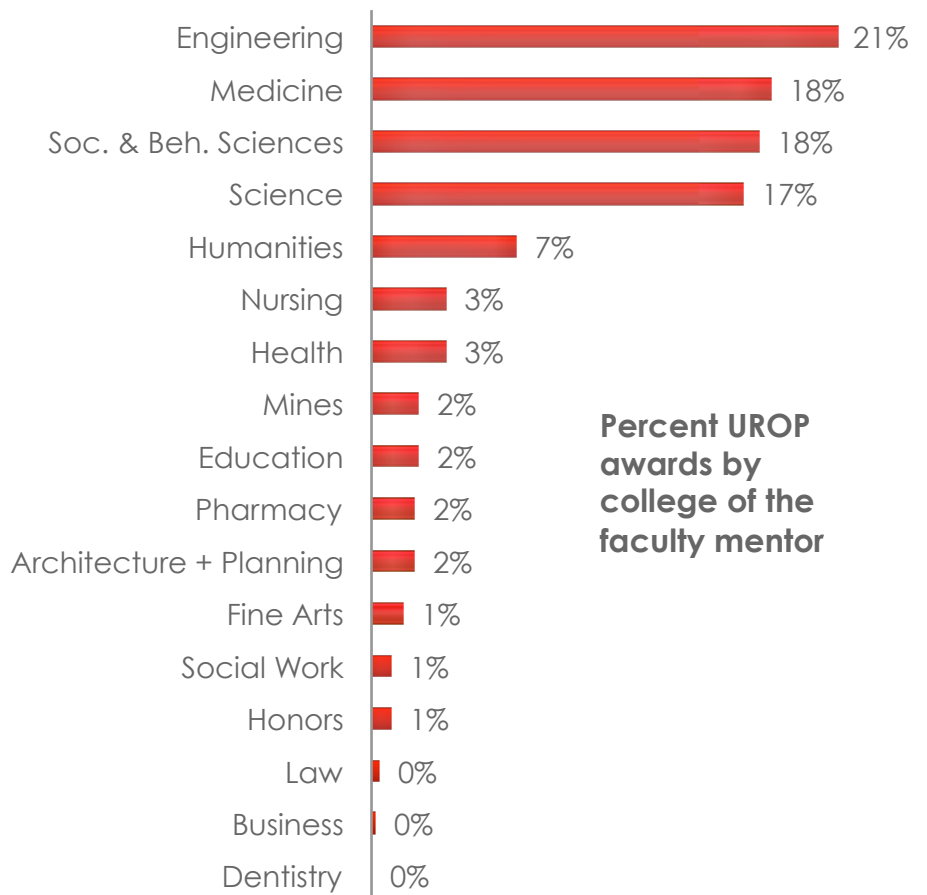
UROP recipients are hired by the Office of Undergraduate Research and are paid \$10/hour for up to 120 hours of work during the semester.

My UROP experience has been awesome. Everyone is so helpful and passionate about what they do. I am learning things that help me both in life skills and educational skills that will allow me to move forward with life out of college.

- UROP Student

UROP Award Statistics 2014-2015

Fall 2014: 206 (208 applications)
 Spring 2015: 236 (267 applications)
 Summer 2015: 116 (143 applications)
 32% Honors students
 52% male, 46% female, 2% genderqueer



Special UROP Awards

Dee Foundation UROP Scholars

The Lawrence T. Dee and Janet T. Dee Foundation was established by Lawrence Taylor and Janet Teller Dee in 1971 for the purpose of promoting charitable activities in Ogden and the surrounding area. Now in its 44th year, it remains a family foundation dedicated to furthering the growth and well-being of the people of northern Utah. Each year, depending on funding, one or two students in their first semester of UROP funding will be selected for the Dee Foundation UROP Award.

Adam Whitney (*Prof. Charlie Hicks-Little*) – Assessing the Need for Physical Therapy Among the Homeless Population of Salt Lake City

Joseph Fuell (*Prof. Daniel Leung*) – Identification and Evaluation of Antidiarrheal Drugs from Native American Herbal Remedies

Francis Family Foundation UROP Scholars

The John A. and Irene F. Francis Endowment Fund was established by John A. Francis in memory of his wife, Irene F. Francis, and to acknowledge the work of his son, John G. Francis, professor of political science at the University of Utah. The Francis Endowment Fund recognizes outstanding undergraduate researchers in the arts, social sciences, and the humanities.

Sam Katz (*Prof. Michael Cottle*) – Stockham: The father of digital audio recording

Erika Longino (*Prof. Jose Galarza*) – A sustainability master plan for Navajo communities in need

Juliana Penham (*Prof. Katharine Coles*) – Poemage: visualization of sonic elements in poetry

Parent Fund UROP Scholar

The Parent Fund is sustained by parents and supports student-centered programs and initiatives. The Parent Fund plays an integral role in the University of Utah's ability to provide students with exceptional opportunities inside and outside the classroom. Each year, depending on funding, a first-semester UROP student is selected to receive the Parent Fund UROP Award.

Micah Crapo (*Prof. Jason Watson*) – Honors Thesis: Behavioral transitioning and cognitive controls



Small Grants & Travel Grants



Small Grant Statistics 2014-2015

19 awards
 33% Honors students
 68% male, 32% female

Travel Grant Statistics 2014-2015

34 awards
 40% Honors students
 53% male, 47% female

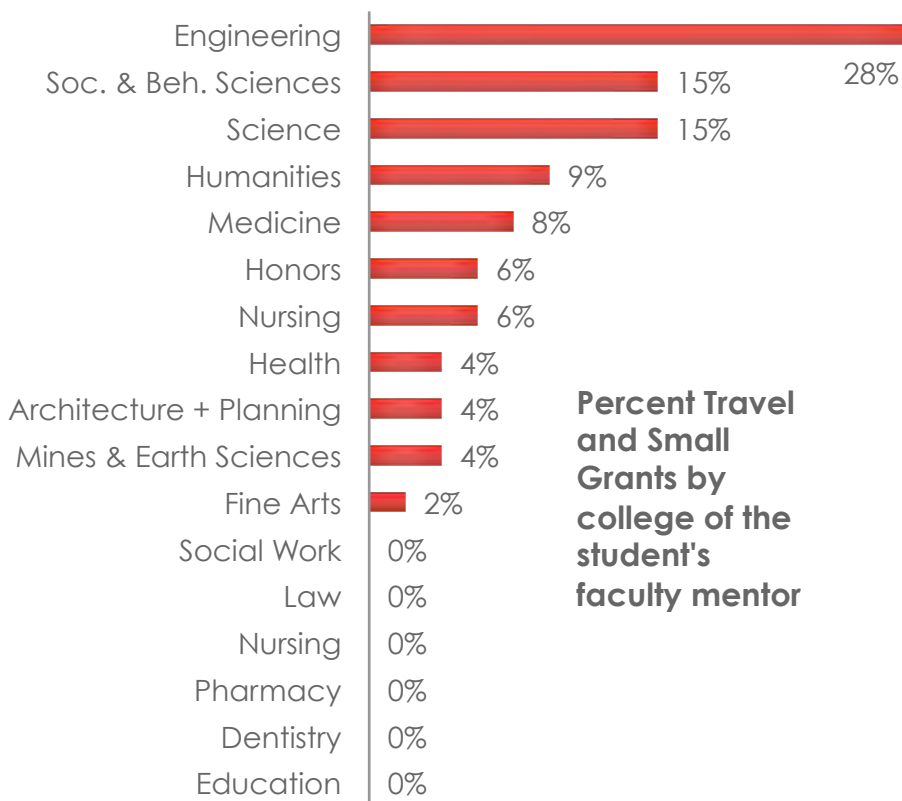
This year we introduced the Small Grants and Travel Grants programs.

Small Grants

Funding from the small grant program (max \$200) can help with future purchases of: research supplies, special training fees, or other research costs related to the student's original work.

Travel Grants

Funding from the travel grant program (max \$500) might cover expenses for future: airfare, lodging, conference registration, gas/mileage.



Percent Travel and Small Grants by college of the student's faculty mentor

I would like to thank the Office of Undergraduate Research for the opportunity they gave me to experience presenting my research findings at a professional conference. This opportunity helped me learn how to and gain experience communicating my research results professionally.

–Travel Grant Recipient

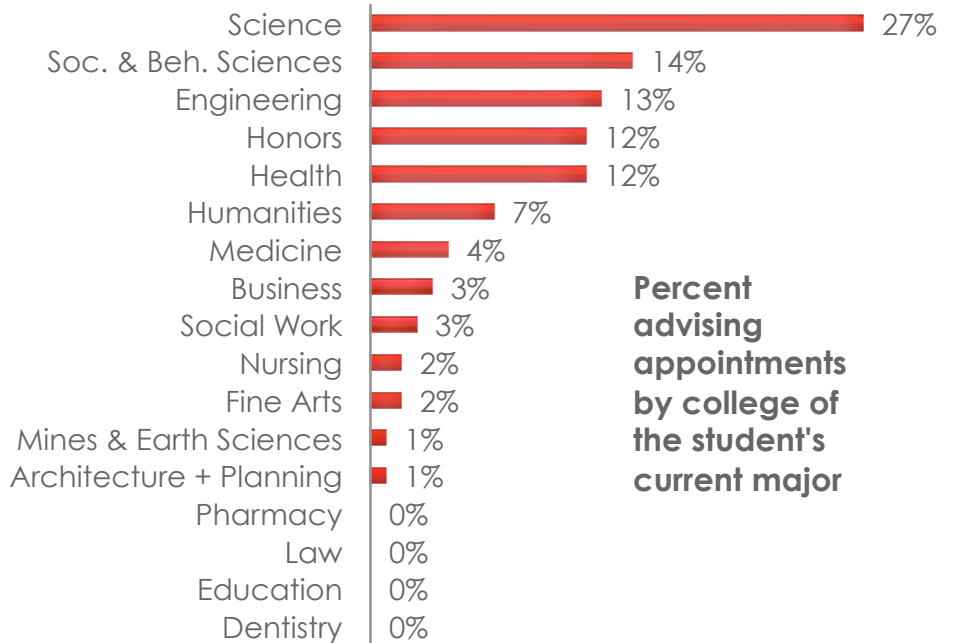
Undergraduate Research Advising



We provide comprehensive advising for students throughout the entire undergraduate research process. Advising is intended to provide a supportive environment for the student to become involved with research and to prepare the student for and guide the student through the many processes that undergraduate research will include, promoting a deeply engaged and high-quality research experience. With our support, the student will be prepared to pursue further research opportunities/careers.

Advising Statistics

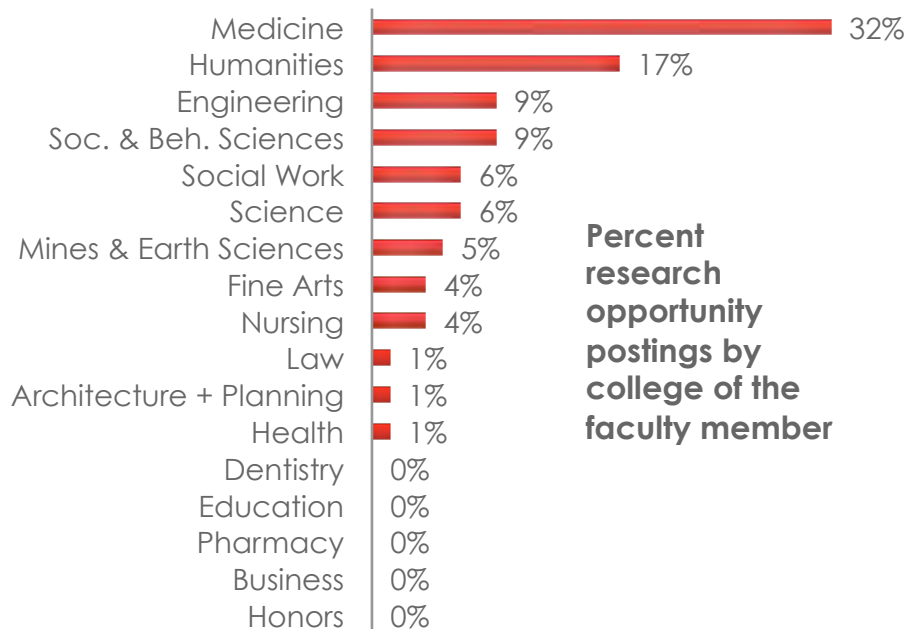
118 advising appointments since March 2015
 20% Honors students
 54% male, 46% female



Percent advising appointments by college of the student's current major

Research Opportunity Postings

Currently 82 Research Opportunity Postings



Percent research opportunity postings by college of the faculty member

Undergraduate Research Education Series



We offer educational events on topics of interest to undergraduate student researchers and their faculty mentors. These events are open to all and are designed with undergraduate students in mind.

Events in the Undergraduate Research Education Events series cover topics such as:

- human subjects research ethics
- the Institutional Review Board
- writing abstracts
- creating effective posters
- community-based research
- data management

Undergraduate Research Education Event Statistics

Fall 2014: 8 events

Spring 2015: 8 events

Summer 2015: 8 events

238 student attendees in Spring 2015

Research Education Partnerships

Through our Undergraduate Research Education Series, we have established a number of partnerships throughout campus. Our partners include:

- Department of Writing & Rhetoric
- Department of Linguistics
- Department of Communication
- Lassonde Institute
- Bennion Center
- Marriott Library
- Department of Anesthesiology

The seminars that UROP has hosted have been beneficial in that they teach valuable lessons for my future in education and career.

- UROP Recipient



In 2015, we introduced the Outstanding Undergraduate Researcher Award, recognizing an outstanding undergraduate researcher from each college/school at the U. The criteria for the award are:

- Record of sustained commitment to developing research skills and knowledge under the supervision of a faculty mentor
- Evidence of independent and critical thinking
- Active participation in research-related activities on campus
- Positive contributions to the research culture of the Department, College, and University.

Outstanding Undergraduate Student Researcher Awards

2015 Awardees

Architecture + Planning

Katherine Nix – *Prof. Stephen Goldsmith*

Business

Zhao Jin – *Profs. Elizabeth Tashjian & Cihan Bilginsoy*

Dentistry

Andrew Johansen – *Profs. Lisa McFadden & Annette Fleckenstein*

Engineering

Josh Kunz – *Profs. Sneha Kasera, Robert Ricci & Kobus Van der Merwe*

Fine Arts

Chance Clouse – *Prof. Maureen O’Hara Ure*

Health

Brett Cutler – *Profs. Thunder Jalili & Anandh Babu Pon Velayutham*

Honors

Diona Giannopoulos – *Prof. Michael Gills*

Humanities

Kajsa Vlasic – *Profs. Michael Gills & Disa Gambera*

Law

Aliya Khan – *Prof. Leslie Francis*

Medicine

Andrew Jo – *Prof. David Krizaj*

Mines & Earth Sciences

Max Giannetta – *Prof. Lowell Miyagi*

Nursing

Andy Rivera – *Profs. Kristin Cloyes & Linda Edelman*

Pharmacy

Josh Conarton – *Prof. Hamid Ghandehari*

Science

Alexandra Kent – *Prof. Jennifer Heemstra*

Social & Behavioral Science

Martin Puga Jr. – *Prof. Rebecca Utz*

Social Work

Elizabeth Gamarra – *Prof. Dena Ned*

Undergraduate Research Symposium

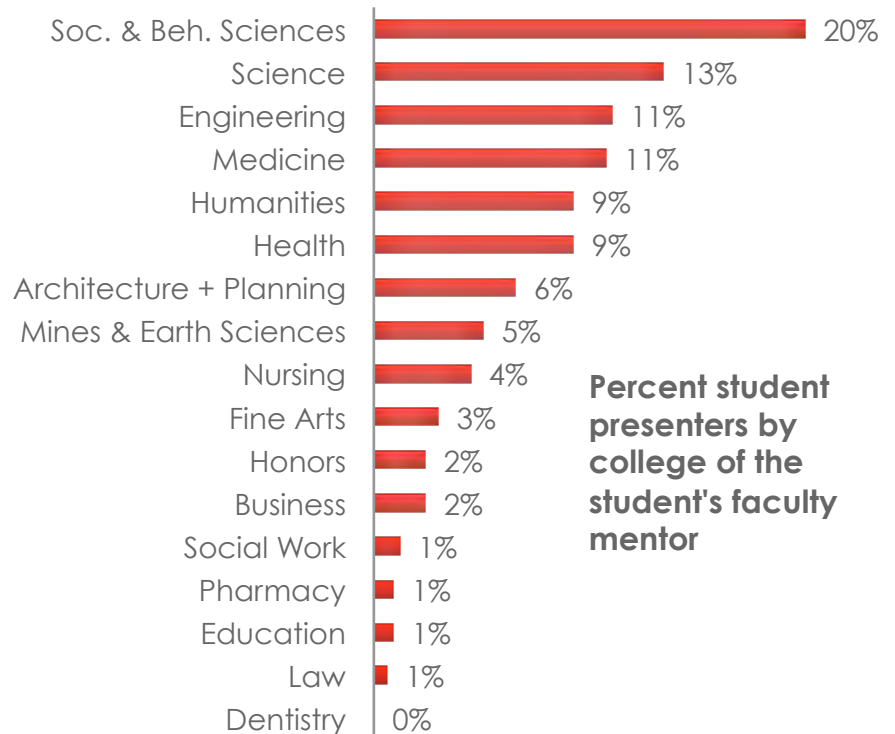


The Office of Undergraduate Research and the Honors College hosted the 12th Annual Undergraduate Research Symposium on March 31, 2015 in the Olpin Union Building.

The Undergraduate Research Symposium provides an excellent opportunity for students to present their work in a scholarly setting to students, faculty and members of the University community. Undergraduate students from all disciplines are invited to present their research and creative projects.

URS 2015 Statistics

339 presentations (78 Oral, 261 Posters)
 36% Honors students
 51% female, 47% male, 2% genderqueer



Presenting a poster in a symposium to mostly fellow students and faculty was a great introduction to research presentation in an environment that wasn't too intense.

- UROP Recipient

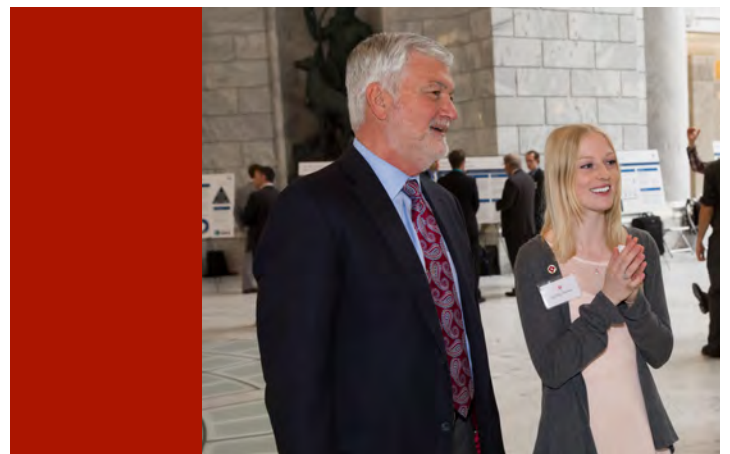
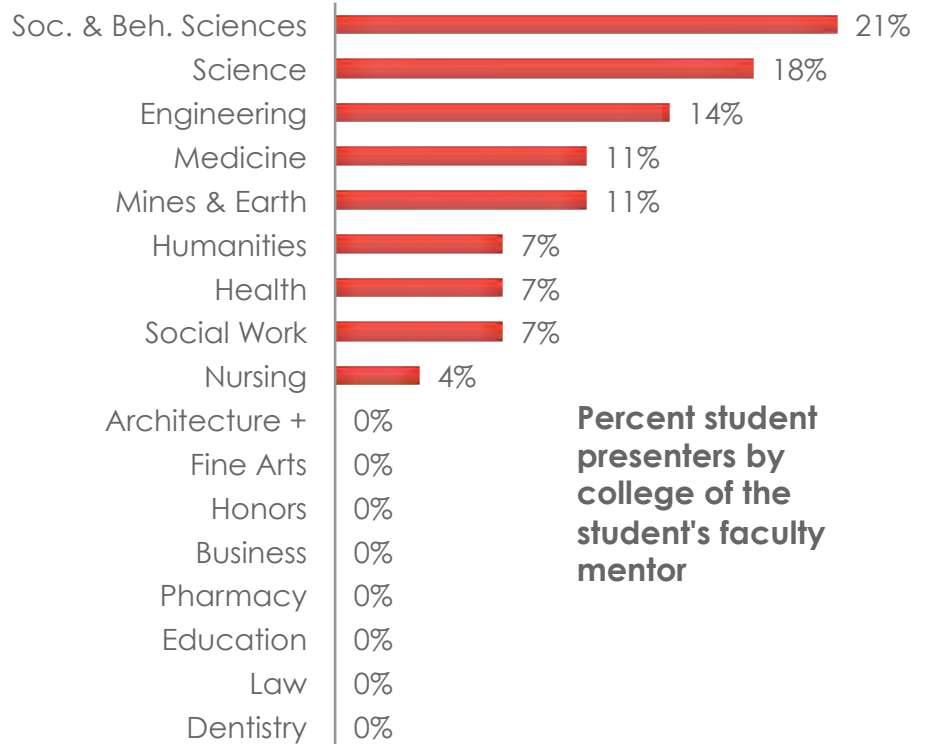
Research Posters on the Hill



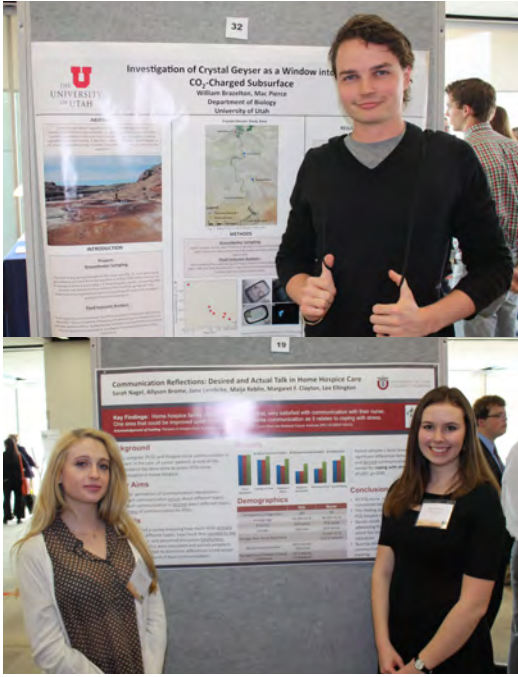
The Office of the Vice President for Research, the Office of Government Relations and The Office of Undergraduate Research selects students each year to exhibit their work via posters to Utah State legislators. This event demonstrates the importance of undergraduate research and creative work at Utah's Research I institutions.

RPOH 2015 Statistics

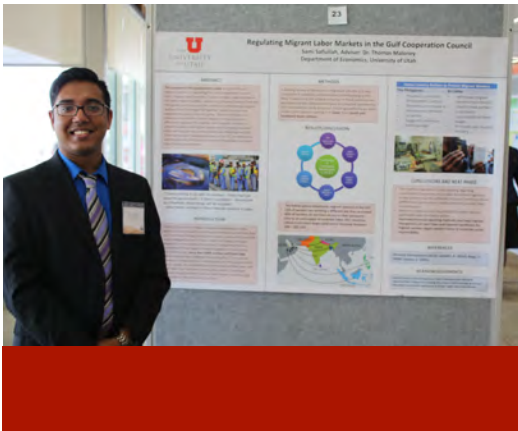
29 University of Utah student presenters
 44% Honors students
 52% male, 48% female



Utah Conference on Undergraduate Research (UCUR) & National Conference on Undergraduate Research (NCUR)

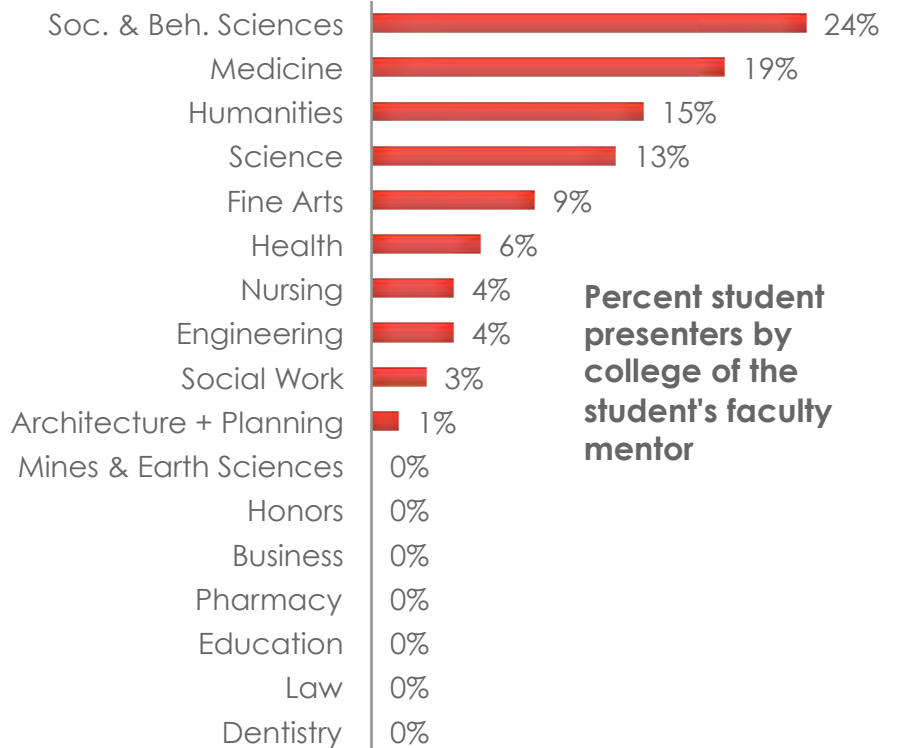


Each year the Office of Undergraduate Research facilitates attendance at UCUR and NCUR by organizing abstract submissions and supporting travel to the conferences. These conferences provide an opportunity for students to present their work to peers throughout the state and country.



UCUR/NCUR 2015 Statistics

67 University of Utah student presenters
 42% Honors students
 52% male, 46% female, 1% genderqueer



Monson Essay Prize

2015 Recipient

Colette Ankenman - Prof. Marissa Diener

Understanding youth educational and occupational goals in after school programs



The Charles H. Monson Essay Prize honors Charles H. Monson Jr., who was a distinguished member of the University Philosophy Department from 1958 to 1974. Professor Monson earned his bachelor's and master's degrees from the University of Utah and received his Ph.D. from Cornell University. During his years at the University, he served as chair of the Philosophy Department and Associate Vice President for Academic Affairs. He received the University's Distinguished Teaching Award in 1970. In his honor, an annual prize is awarded to an undergraduate who writes an outstanding essay on a subject having to do with social change.

The objective of my study was to investigate and understand the educational and occupational goals of youth involved in the Sunnyvale Neighborhood's Center after school program to inform future programming and improve access to higher education. Sunnyvale Neighborhood Center is a refugee and immigrant community center sponsored by the Asian Association of Utah. Twenty-two adolescents from 18 countries, primarily in Africa, participated. Average time in the US was 5 years. Not only will the data help the adolescents in the program now, it will also help the younger children. Furthermore, the refugee and immigrant population is growing quickly in the Salt Lake Valley, and there is little research with youth in these populations.

discrimination. The participants perceived that family and community support, speaking multiple languages, and community resources would help them achieve their goals. The participants also suggested programming that Sunnyvale could implement to help them reach their goals. Their recommendations included creating a mentorship and job shadowing program, arranging visits to colleges, having representatives from a variety of fields talk to participants, providing one-on-one help with college and job applications and financial aid, and recruiting more volunteers and staff to help with homework. I have worked with Sunnyvale's staff to implement these programs, with the long-term goal of increasing access to higher education.

Interviews and focus groups were audio recorded and transcribed verbatim. Themes were coded using qualitative techniques. Identified barriers to reaching goals for higher education included language barriers, grades, disengagement, economic status, and



Undergraduate Research Scholar Designation

URSD Statistics 2014-2015

Summer 2014: 27

Fall 2014: 15

Spring 2015: 143

44% male, 56% female

The Undergraduate Research Scholar Designation (URSD) recognizes a student's commitment to their development as a researcher during their undergraduate career. The URSD appears in the awards section of the transcripts of graduating students. URSD awardees receive a white research cord from the Office of Undergraduate Research to wear at convocation and commencement.





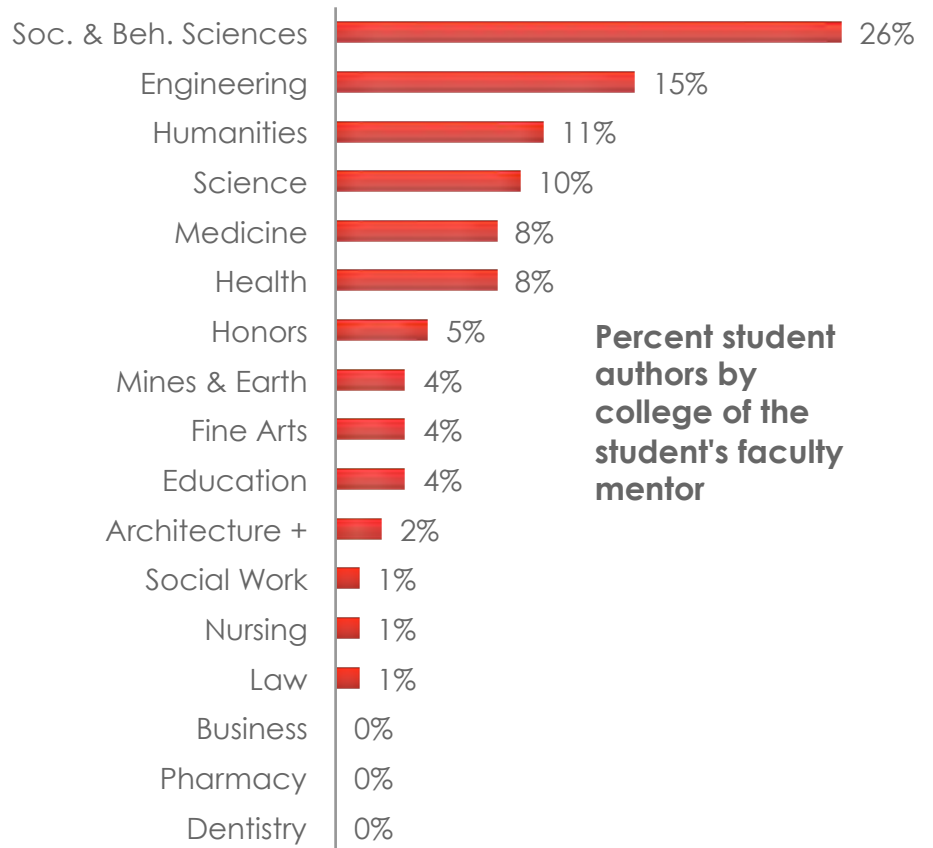
Undergraduate Research Journal

Undergraduate Research Journal 2015 Statistics

The journal's primary mission is to make more visible the rich and diverse student contributions to research and creative work at the University of Utah. All undergraduate students involved in research at the University of Utah are strongly encouraged to submit one-page summaries of their work for publication in this journal.

Starting in 2015, the Journal will be published online, via a partnership with the Marriott Library.

166 student submissions
 49% Honors students
 41% male, 57% female, 2% genderqueer



Goals for AY 2015-2016



Data collection

While we have made strides in data collection (via the use of online forms) and data management (via our new database), we are still limited in our reporting capacity to students who are participating in our own programs. We have no or low-quality information on course-based undergraduate research, informal research arrangements, paid undergraduate student research work, etc., and are thus unable at this point to accurately report (and, more importantly, support and celebrate) undergraduate student – faculty mentor collaborative research happening at the University of Utah. It is our goal to begin to collect more and higher-quality data about all student participation in undergraduate research at the University of Utah.

In light of our explicit learning objectives (see below), we will also be developing a high-quality outcomes assessment plan so that we may better understand and report on the efficacy of our programs.

Learning Objectives

We are in the process of developing a set of learning objectives for undergraduate research at the University of Utah. We will then align all of our programs to these objectives and communicate them throughout the University. With the learning objectives in place, we will be able to create an assessment plan for determining the efficacy of our programs in light of the objectives.

Our partners in pursuing these goals will include Ann Darling, Senior Associate Dean of Undergraduate Studies, Mark St. Andre, Assistant Dean of Undergraduate Studies, colleagues in the Marriott Library, and faculty research mentors throughout campus, among many others.