

# Northwestern

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## OFFICE OF UNDERGRADUATE RESEARCH

### **2022-23 ANNUAL REPORT**

**FOR: DR. MIRIAM SHERIN, ASSOCIATE PROVOST FOR UNDERGRADUATE EDUCATION AND  
THE OFFICE OF UNDERGRADUATE RESEARCH ADVISORY COUNCIL**

**PREPARED BY THE STAFF OF THE OFFICE OF UNDERGRADUATE RESEARCH**

**DR. PETER CIVETTA, DIRECTOR**

**DR. MEGAN WOOD, ASSOCIATE DIRECTOR**

**VICTORIA SAXUM, BUDGET, ADMINISTRATION, AND COMMUNICATION**

**DIAMOND JONES, EDUCATION PROGRAM MANAGER**

## 2022-2023 EXECUTIVE SUMMARY

At the formation of the Office of Undergraduate Research (OUR), the overall mandate was to grow participation, but there were three specific areas of interests, all of which hit significant milestones during the 2022-23 year. In terms of overall participation, we saw the Summer URG program shatter existing records for applications and awards. After averaging around 325 applications for the last ten years, we received 480 applications, leading to 304 awards. Our first area of interest was getting students engaged in research earlier in their Northwestern career. This year 117 first- and second-year students received Summer URGs as compared with 43 in the first year of OUR, an increase of over 270%. Our second area of interest was around getting more students in the arts, humanities, journalism, and other non-lab disciplines involved, a disparity that challenges all universities/colleges. We had record numbers of these types of Summer URG awards, including high water marks for students from the School of Communication, Bienen, and Medill and a record 71 students with projects that will result in a creative arts or journalism output like a script, documentary, or album. In fact, we have reached a point of near parity between lab and non-lab Summer URG applications (53% to 47%) with similar award acceptance rates (68% and 64%), while at the same time we saw continued growth across STEM fields, with more lab-based projects getting funded than ever in our history. Finally, we sought to lower barriers to participation across demographic and need-based groups; this year, across nearly all groups, we saw strong levels of participation and success rates.

It was gratifying to make such extraordinary progress in areas identified as priorities from the very formation of OUR. However, our success resulted in some unexpected and unfortunate consequences. We needed to reallocate some of OUR's budget to preserve the integrity of the Summer URG program; consequently, the reallocation forced us to cancel the Summer URAP cycle this year. We did not feel it was appropriate to change the faculty-vetted selection process for Summer URGs, especially when it would contradict the expectations with which students applied. Therefore, the only flexibility in our budget was URAP, since it was the only program that had not yet been opened for applications. We worked hard to find other potential resources around campus for faculty and students interested in summer assistantships, and we proactively communicated our decision to minimize the impact of canceling URAP as much as possible.

Across all OUR programs, we awarded 621 students nearly \$1.7 million in grants this year (only 10 students less than our record high despite the cancelation of Summer URAP which typically funds ~75 more). Support from Associate Provost for Undergraduate Education Miriam Sherin enabled us to transition the new Emerging Scholars Program from pilot to regular funding, allowing this important new program to continue to support Northwestern's first generation, lower income, and/or students of color across all schools. These achievements are supported by the dedicated work of OUR staff who met with over 1,400 students for a total of over 2,200 individual meetings.

The digital Expo this year had over 3,100 visits and over 10,000 unique presentation view, and our Winner's Circle event featured the top winners from the poster presentations, oral presentations, and the Creative Arts Festival as well as the announcement of the winners of the Fletcher Awards and a keynote by Professor Patty Loew.

Finally, at the end of the academic year, we had our outgoing Education Program Manager run a series of focus groups with students (both funded by OUR and not) to get a sense of student interests and

priorities. Participants expressed significant focus on supporting independent projects, providing opportunities outside of traditional lab disciplines, and providing wrap-around support for students involved in research experiences. They also articulated a need for comprehensive outreach and advising to help students learn about and achieve these opportunities, particularly students from first generation and/or lower income backgrounds. We will use this guidance in our goal setting for the coming year.

## 2022-2023 GOAL REVIEW

### Arthur Vining Davis Foundations Grant Fulfilment

- We have formally moved the Emerging Scholars Program into regular OUR programming. As we began to recruit the third cohort, we moved from AVDF funding to our own with additional support from the Associate Provost for Undergraduate Education. We have committed to maintaining this new program beyond the AVDF pilot.
- We have adapted or written new content for 18 activities for the *Entering Research* curriculum; these contributions focus on making content relevant for arts/humanities or expand professional development content beyond pursuing a PhD. These activities are in various stages of development in collaboration with WiSCIENCE (who wrote the original curriculum): 2 are ready for national pilot testing, 6 are in the process of external review, 5 are undergoing revisions, and 5 are in content development. We anticipate all activities will be ready for national pilot testing by the end of this upcoming academic year. Example activity contributions include Translating Research to Resume, Developing a Research Project 1-3, Aligning Mentor/Mentee Expectations and Time Management.
- Our [Semple's Words](#) web series has amassed over 2,000 total views, and its content was enthusiastically received during a Council of Undergraduate Research Annual Conference presentation in June. The web series uses a mock-talk show format to go through common questions/challenges that students experience in research.

### Equity and Access

- Since OUR application data does not collect any demographic or financial need information from students, the Office of Institutional Research analyzes our amalgamated application and award data and provides information on how students across identities fare. We are particularly interested in whether students of a particular identity applying to OUR programs at a rate representative of the identity's prevalence amongst the campus population and whether their success rate is in line with program's overall rate. Full data can be seen in Appendix A.
- The Emerging Scholars Program is successfully connecting to the communities of emphasis, including first generation, lower-income, and/or students of color.
- We previously set as a goal a focus on better supporting Asian and Asian-American students whose application volume and success rate lagged behind the general population of undergraduates. We are pleased to note that these students are applying and succeeding well across nearly every OUR program.

- Most demographic group success rates are within a few percentage points of program-wide success rates.
- We need to continue to increase outreach and advising to first generation students who lag slightly behind in terms of rates of application, although their success rates with most programs remain solid.

### Education Program Expansion

- While we continue to develop and refine our workshop curriculum, we began offering additional workshops for students beyond the Emerging Scholars Program. We ran weekly workshops in August open to any student doing research this summer. The topics were: Research to Resume, Writing an Abstract, Making a Poster, and Research Goal-Setting and Next Steps. We had hoped to offer more, but the unexpected exit of, and subsequent search for, the Education Program Manager impeded staff bandwidth. We now believe that with newly promoted Diamond Jones in the Education Program Manager role we will be able to expand offerings in the coming year.

### New Application Portal

- The new Student Opportunities Application Portal ([SOAP](#)) opened this past fall. It was an intense collaboration between OUR and NUIT. We provided the majority of user testing before launch, and Peter and Megan remain on the standing and operations committees overseeing the further development of the site. The new site's capabilities allowed us to restructure many of our evaluation rubrics leading to more refined and accurate scoring/decision making for the faculty review committees. This project has been (and continues to be) a significant investment in OUR time and energy, but it has been a fantastic improvement over our previous arrangement. We have been asked to help NUIT promote the site to potential other interested units within the University.

## 2023-2024 GOAL SETTING

We will have a basically flat budget for FY2024. Thus, to allocate money within the budget to meet the many interests and needs in our community, we commissioned our outgoing Education Program Manager to conduct focus groups with students to assess priorities. The entire report can be found in Appendix B. Overall findings indicate an interest in funding for independent projects over getting started research assistantships, although everyone acknowledged the value and importance of both. In a limited resource environment, we have decided to cancel Summer URAP until additional funding sources can be found; we will still run Academic Year URAP, as it remains a cost-effective way to help get students started. With this choice, we should be on track to meet budget projections for all programs.

Given these developments, we propose the following goals for the 2023-2024 year:

**Expand Funding:** Working with Alumni Relations and Development, we want to begin the process of external fundraising to support further programmatic growth, including an increase in summer stipends and eventually a return to Summer URAP.

**Equity and Access:** Working with campus partners, we want to continue to do dedicated outreach to students across all demographic groups and disciplines, particularly emphasizing first generation, lower income and/or students of color to ensure their awareness of OUR programming and resources. We will pay particular attention to trying to lower the barriers they may experience about meeting with advisors, so we can better support their aspirations for research. We will also see if there are ways to provide summer housing at affordable rates for undergraduate researchers.

**Education Program Expansion:** We want to formalize the new Emerging Scholars Program workshop curriculum, and then begin to offer aspects of it on an ad hoc basis for other students. Our goal is to offer more wrap-around support for student researchers whether or not they are utilizing one of our programs. In particular, we seek to optimize the timing and offering of these workshops since they are not part of a formal curriculum, and students don't really know when they need them.

**Return to In-Person Expo:** A survey of participating Expo students this year revealed an overwhelming desire to return to an in-person event; therefore, we will run the full Undergraduate Research and Arts Exposition in person on Thursday, May 24, 2024 in Norris.

## FY 2023 INDIVIDUAL PROGRAM REVIEW

### Undergraduate Research Grants (Academic Year, Summer, and Advanced URGs):

Academic Year URGs experienced their highest applications and awards in five years (and the second highest level in program history). However, it was the Summer URG program that broke all records. We received 480 applications, an increase of over 150 from the previous year and more than 100 more than the previous high (pre-COVID). It led to a record 304 awards. In addition, records were set in the following areas: the number of applications and awards from the School of Communication, Bienen, Medill, and WCAS; the number of first/second year student applications and awards; a record number of applications and awards for projects in the Arts, Humanities, and Performance and in the Social Sciences and Journalism; and a record number of applications and awards for creative arts and journalism projects. We have reached a point of near parity between lab and non-lab applications (53% to 47%) with similar award acceptance rates (68% and 64%).

### Undergraduate Research Assistant Program (URAP):

In the academic year, we awarded 72 student assistantships to work with 50 different faculty (out of 73 faculty applications). 44 of the students hired were first/second years. The students hired came from across all undergraduate schools (with the exception of NUQ). Due to budget limitations, we did not run Summer URAP.

### Emerging Scholars Program:

We recruited and selected cohort three for the program, receiving 18 applications and awarding 7 students. In addition, faculty were willing and interested in mentoring two students not selected into the cohort, so these matches were provided a separate research apprenticeship opportunity. 3 alumni of the first cohort (now juniors) applied for Summer URGs, and all were successful. 2 members of cohort two opted out of the second summer: one received an internship with the US Department of

State in Washington, DC and one was selected to the Mellon Mays Undergraduate Fellowship. All others worked on their own independent projects this summer.

#### Conference Travel Grant Program (CTG):

This program nearly doubled from the previous year jumping from 57 to 107 awards, marking the second highest level in program history.

#### Undergraduate Language Grant (ULG):

We received 46 applications this year, similar to last year's number. As this program has a fixed budget, we awarded 15 grants with 5 paid through our partnership with NUQ. Students were funded to learn 11 different languages across 11 different countries.

#### Circumnavigators Travel-Study Grant:

In collaboration with the Circumnavigators Club of Chicago, this year's winner is Elizabeth Hyun: WCAS '24 (Neuroscience & Global Health Studies). Her project is titled: "A Comparative Study on Psychotraumatology: Investigating Factors that Contribute to the Prevalence of Trauma Diagnoses in Post-Conflict Countries." Her project aims to research the factors that contribute to this prevalence of trauma diagnoses in Argentina, Northern Ireland, Bosnia and Herzegovina, Rwanda, and South Korea. Her blog can be found here: <https://undergradresearch.northwestern.edu/blogs/>

#### Undergraduate Research and Arts Exposition (Expo):

We used Forager One's Symposium platform again this year. During the 36-hour event, over 3,150 visits to the site yielded 10,377 unique presentation views. Viewers left over 700 comments to presenters, and a total of 273 hours of engagement were spent on the platform during the event. The in-person Creative Arts Festival was nearly at capacity, and the in-person Winner's Circle featured the top winners across categories (posters, oral presentations, Creative Arts Festival) presenting/performing live for an audience. It also included a keynote address by Dr. Patty Loew. We surveyed students after the event and found significant interest in returning to a fully in-person event, which we are planning for next year.

## OTHER INITIATIVES

### Outreach

This year's outreach focused on developing and maintaining relationships with the broader Northwestern community. We conducted 175 class visits throughout the entire year allowing us to reach over 3,700 students on campus. While still substantial, this number is actually less than 2021-22 because we had increased advising loads this year. Additionally, many of this year's visits were requested by faculty who allotted more time and increased depth, demonstrating faculty's increased interest in not only informing their students about research opportunities, but seeking to engage themselves. We also routinely distributed flyers for all major workshops and grants throughout the year. We increased our coverage with a strategic distribution plan of over 1,000 flyers in both frequently trafficked areas and with less-trafficked but relevant areas.

We conducted 23 info sessions in collaboration with student groups and departments. This number includes longstanding, department-specific info sessions for the annual Physics Mixer, the International Studies Department Global Café as well as collaborating with the WCAS Posner Program. Additionally,

students requested info sessions in their spaces, enabling us to present to Womxn in Economics student group as well as Shepard Residential College. Alongside email and social media, we reached out to groups by contacting their designated outreach/communication chair members. We hope to leverage more in-person connections to maintain collaborations with student groups. Finally, to celebrate the office's 10-year anniversary, we compiled information to capture OUR's decade long history. We sent a survey to alumni and received insightful feedback on how the office - its funding and commitment to advising - positively impacted alums both professionally and personally. Inspired by this, we initiated a retrospective project wherein we supplemented pulled survey and grant data with creative visual icons to best showcase the office's achievements. Diamond Jones analyzed the data, designed graphs, and created a 24-page booklet entitled "OUR Research Retrospective: A Decade of Student Experiences" which is both physically and digitally available for an audience of donors, faculty, and students.

### Office Communications/Branding

OUR has maintained and refined the branding that we use in our communications. The engagement and subscription data from Constant Contact (our newsletter host) and Instagram affirm our approach. Our newsletter "Blast" contacts total 4,252 as of mid-July 2023; this is a net increase of 446 subscribers, or +11%, from last year. We always expect some unsubscribes at the end of the Academic Year as graduating students leave campus, but these numbers show that we more than make up for it with incoming students. In addition to increasing our readership, we have maintained an open rate of 68% over the Academic Year; this is up 5% from last year and is 30% higher than the industry average according to Constant Contact data. This means that around 2,891 people are reading our newsletter every week. The steady open rate and increasing subscribers is a strong indicator that our branding is engaging, and our newsletter is an effective way to communicate with students and the campus community.

Tori and Diamond have created and published 105 unique Instagram posts over the year, exceeding our goal of posting at least twice per week. The OUR account has added 317 followers since last August, bringing our total follower count to 761, which is the highest it has ever been. Not only have we increased the number of followers, according to Meta Analytics, our Instagram reach is up 22.9% over the past year, which means our posts have been shown in 1,897 Instagram account feeds total. The median reach for our Instagram posts is 575 accounts. Since last August, our Instagram profile has been visited 1,967 times, meaning that someone specifically clicked on our account after one of our posts appeared in their feed or they searched for our profile specifically.

Our Instagram activity remains robust even once the bulk of our deadlines and programming have ended. We have averaged a total of 17 engagements (likes, comments, shares) on our posts over the past 90 days. The link in our bio (which leads to more information on our website, advising request forms, event registration, etc.) has been viewed 1,094 times since we published it last year and has been clicked on 836 times.

We are hoping to further engage students and show them the realities and variability of research, by hosting student researcher takeovers on our Instagram account. Student feedback has indicated that there is a desire to see actual research, grant writing processes, and the results of research experiences. We hope that student social media takeovers will demonstrate that research is approachable and doable for all students across all fields of study.

## Research Workshops and Peer Mentors

The Art, Humanities, and Social Science Research Workshops ([AHSS](#)) started with 16 members and finished with 8 who submitted Summer URG proposals. 6 were awarded the grant. The program had 4 Peer Mentors in support. The Science Research Workshops ([SRW](#)) started with 15 members and ended with 8 who submitted for a Summer URG. 6 were successful. The program had 6 Peer Mentors in support. While the overall success rates for both programs were great, there was a decrease in enrollment across both programs. We believe this was mainly due to the late hire of the Education Program Manager, which led to a delayed recruitment process. Since the Manager has changed once again, we are using this as an opportunity to re-explore the aims of the program and seek to make modifications before the coming year.

We were able to successfully begin a new program: the [Finding a Lab Support Group](#). This 4 session workshop is designed as a supported expansion of the regular Finding a Lab Workshop, and there were 14 Peer Mentors across the 3 versions. We ran the program in each quarter, doing assessment and iterating on it as we went. We feel hopeful that this new program will help support more students with the challenging process of finding a lab placement. We have also been piloting a newer, more interactive version of the regular [Finding a Lab/Faculty Workshop](#) with hopes of increasing its impact moving forward. We will be grappling this year with workshop formatting in terms of in-person versus Zoom. While students like the convenience of Zoom, we do not see the same level of engagement or material retention with it. Given the record number of Summer URGs, we have 29 Peer Mentors supporting students this summer.

[CAURS](#) (Chicago Area Undergraduate Research Symposium), [TEDx Northwestern](#), and [NURJ](#) (Northwestern Undergraduate Research Journal)

[CAURS](#) held a very successful and well attended event at Lurie Children's in April. Northwestern students won 3 of the top 8 awards. [TEDx](#) also held an outstanding event in Lutkin Hall to an impressive audience. Peter remains the faculty sponsor for both groups as well as the Northwestern Undergraduate Research Journal ([NURJ](#)).

## APPENDIX A: Student Demographic Assessment Data

Every year, we share all of our application and award data with Senior Director of Institutional Research Debbie Crimmins, who provides us with information about how students across different categories are doing in our programs. We do not ask any demographic questions in our applications, as they are not pertinent to the faculty review process; however, we are deeply interested in how students are doing across our programs. There are two metrics that are of particular interest to us. First, we want to see whether students in a particular group are applying to programs in numbers comparable to their size on campus. For example, if Asian students make up 21% of the undergraduate population, we would want to see that level of applications for our programs. Second, we want to see whether students in a particular group are succeeding at the same rate as the overall program success rate. For example, if the overall success rate for the Summer URG program is 61.8%, we would want to see whether individual groups are succeeding at, or close to, that level.

The following are three pages of data showing the results of this work. The first is a comparison of the size of the various groups compared with the size of who in that group got an OUR award this year as well as the difference between the two. This information looks at all of programs together. The second shows similar information but broken down by program. The third show the success rate of individual groups broken down by programs. Some programs have too small a sample size to be included in the data due to student privacy concerns.

| Northwestern Undergraduates Fall 2022 compared to OUR Awards |              |       |                   |       |        |
|--|--------------|-------|-------------------|-------|--------|
|  | NU Undergrad |       | Accepted for OUR* |       |        |
| Sex  | Total        | %     | Count             | %     | Diff   |
| F  | 4,581        | 53%   | 363               | 61.8% | 8.6%   |
| M  | 3,995        | 46%   | 197               | 34.5% | -11.9% |
| U or X   | 37           |       | 2                 |       |        |
| Total  | 8,613        |       | 562               |       |        |
|  |              |       |                   |       |        |
|  | NU Undergrad |       | Accepted for OUR* |       |        |
| Race/Ethnicity   | Total        | %     | Count             | %     | Diff   |
| American Indian/Native American                              | 8            | 0%    | 0                 | 0.0%  | -0.1%  |
| Asian  | 1,818        | 21%   | 136               | 24.2% | 3.1%   |
| Native Hawaiian/Oth Pac Island                               | 6            | 0%    | 0                 | 0.0%  | -0.1%  |
| Black/African-American                                       | 569          | 7%    | 35                | 6.2%  | -0.4%  |
| Hispanic/Latinx  | 1,234        | 14%   | 71                | 12.6% | -1.7%  |
| International  | 902          | 10%   | 73                | 13.0% | 2.5%   |
| Multi-Racial   | 618          | 7%    | 42                | 7.5%  | 0.3%   |
| Not Applicable   | 274          | 3%    | 21                | 3.7%  | 0.6%   |
| White  | 3,184        | 37%   | 184               | 32.7% | -4.2%  |
| Total  | 8,613        |       | 562               |       |        |
|  |              |       |                   |       |        |
|  | NU Undergrad |       | Accepted for OUR* |       |        |
|  | Total        | %     | Count             | %     | Diff   |
| First Generation   | 1,150        | 13%   | 51                | 9.1%  | -4.3%  |
| Pell   | 1,732        | 20%   | 97                | 17.3% | -2.8%  |
|  |              |       |                   |       |        |
|  | NU Undergrad |       | Accepted for OUR* |       |        |
| Need Index   | Total        | %     | Count             | %     | Diff   |
| 0  | 4,056        | 47%   | 250               | 44.5% | -2.6%  |
| 1  | 1,031        | 12%   | 74                | 13.2% | 1.2%   |
| 2  | 495          | 6%    | 32                | 5.7%  | -0.1%  |
| 3  | 905          | 11%   | 65                | 11.6% | 1.1%   |
| 4  | 865          | 10%   | 73                | 13.0% | 2.9%   |
| 5  | 1,261        | 15%   | 68                | 12.1% | -2.5%  |
| Total  | 8,613        |       | 562               |       |        |
|  |              |       |                   |       |        |
|  | NU Undergrad |       | Accepted for OUR* |       |        |
| NU School  | Total        | %     | Count             | %     | Diff   |
| SESP   | 405          | 4.4%  | 19                | 3.4%  | -1.1%  |
| Medill   | 691          | 7.6%  | 38                | 6.8%  | -0.8%  |
| Weinberg   | 4,354        | 47.8% | 302               | 53.7% | 6.0%   |
| Bienen   | 375          | 4.1%  | 32                | 5.7%  | 1.6%   |
| SoC  | 917          | 10.1% | 79                | 14.1% | 4.0%   |
| McCormick  | 1,871        | 20.5% | 83                | 14.8% | -5.8%  |
| Qatar or SPS   | 503          | 5.5%  | 9                 | 1.6%  | -3.9%  |
| Total  | 9,116        |       | 562               |       |        |
| * Students counted once for any acceptance                   |              |       |                   |       |        |

|   |                      |                   |            |                |                |                   |                         |                |
|---|----------------------|-------------------|------------|----------------|----------------|-------------------|-------------------------|----------------|
| <b>APPLICANT POOL</b>   |                      |                   |            |                |                |                   |                         |                |
| <b>Northwestern Undergraduates Fall 2022 compared to OUR Awards By Specific Program</b>                   |                      |                   |            |                |                |                   |                         |                |
| Color scales should be read row by row.   |                      |                   |            |                |                |                   |                         |                |
| The grant-specific cell shade should be compared to the relative NU population (in bold) of the same row. |                      |                   |            |                |                |                   |                         |                |
|   |                      |                   |            |                |                |                   |                         |                |
| <b>Applicant Pool</b>   | <b>NU Population</b> | Academic Year URG | Summer URG | Summer URG-Adv | AYURAP Student | Emerging Scholars | Conference Travel Grant | Language Grant |
| Asian   | <b>21%</b>           | 29.4%             | 22.4%      | 23.3%          | 22.4%          | 29.4%             | 26.7%                   | 11.6%          |
| Black/African-American  | <b>7%</b>            | 5.6%              | 5.6%       | 0.0%           | 9.2%           | 23.5%             | 1.0%                    | 11.6%          |
| Hispanic  | <b>14%</b>           | 11.9%             | 12.2%      | 13.3%          | 10.9%          | 29.4%             | 10.5%                   | 11.6%          |
| Multi-Racial  | <b>10%</b>           | 4.9%              | 8.0%       | 6.7%           | 8.3%           | 0.0%              | 5.7%                    | 2.3%           |
| International   | <b>7%</b>            | 14.7%             | 13.3%      | 6.7%           | 18.4%          | 5.9%              | 19.0%                   | 41.9%          |
| Not Applicable  | <b>3%</b>            | 2.8%              | 4.7%       | 6.7%           | 2.6%           | 0.0%              | 3.8%                    | 0.0%           |
| White   | <b>37%</b>           | 30.8%             | 33.8%      | 43.3%          | 28.2%          | 11.8%             | 33.3%                   | 20.9%          |
|   |                      |                   |            |                |                |                   |                         |                |
| <b>Applicant Pool</b>   | <b>NU Population</b> | Academic Year URG | Summer URG | Summer URG-Adv | AYURAP Student | Emerging Scholars | Conference Travel Grant | Language Grant |
| F   | <b>53%</b>           | 68.5%             | 58.7%      | 63.3%          | 74.4%          | 82.4%             | 57.1%                   | 69.8%          |
| M   | <b>46%</b>           | 30.8%             | 41.1%      | 36.7%          | 25.6%          | 17.6%             | 41.0%                   | 30.2%          |
| U or X  | <b>0.4%</b>          | 0.7%              | 0.0%       | 0.0%           | 0.0%           | 0.0%              | 0.0%                    | 0.0%           |
|   |                      |                   |            |                |                |                   |                         |                |
| <b>Applicant Pool</b>   | <b>NU Population</b> | Academic Year URG | Summer URG | Summer URG-Adv | AYURAP Student | Emerging Scholars | Conference Travel Grant | Language Grant |
| First gen   | <b>13.0%</b>         | 9.1%              | 10.2%      | 10.0%          | 8.3%           | 47.1%             | 8.6%                    | 14.0%          |
| Pell  | <b>20.0%</b>         | 21.0%             | 16.9%      | 20.0%          | 20.7%          | 52.9%             | 10.5%                   | 27.9%          |
|   |                      |                   |            |                |                |                   |                         |                |
| <b>Applicant Pool</b>   | <b>NU Population</b> | Academic Year URG | Summer URG | Summer URG-Adv | AYURAP Student | Emerging Scholars | Conference Travel Grant | Language Grant |
| 0   | <b>47.0%</b>         | 46.2%             | 45.1%      | 40.0%          | 47.1%          | 5.9%              | 48.6%                   | 55.8%          |
| 1   | <b>12.0%</b>         | 7.7%              | 14.4%      | 20.0%          | 13.2%          | 11.8%             | 14.3%                   | 4.7%           |
| 2   | <b>6.0%</b>          | 2.8%              | 5.8%       | 6.7%           | 4.6%           | 0.0%              | 5.7%                    | 4.7%           |
| 3   | <b>11.0%</b>         | 12.6%             | 10.4%      | 20.0%          | 8.0%           | 23.5%             | 8.6%                    | 4.7%           |
| 4   | <b>10.0%</b>         | 16.1%             | 12.7%      | 6.7%           | 10.6%          | 17.6%             | 9.5%                    | 9.3%           |
| 5 (greatest need)   | <b>15.0%</b>         | 14.7%             | 11.6%      | 6.7%           | 16.4%          | 41.2%             | 13.3%                   | 20.9%          |

| SUCCESS RATE BY PROGRAM  |                        |                   |            |                |                |                   |                |  |  |  |  |  |  |  |  |  |  |  |  |
|--|------------------------|-------------------|------------|----------------|----------------|-------------------|----------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Northwestern Undergraduates Fall 2022 compared to OUR Awards By Specific Program   |                        |                   |            |                |                |                   |                |  |  |  |  |  |  |  |  |  |  |  |  |
| Color scales should be read column by column.  |                        |                   |            |                |                |                   |                |  |  |  |  |  |  |  |  |  |  |  |  |
| The grant-specific cell shade should be compared to the overall success rate of that grant (in bold) of the same column. |                        |                   |            |                |                |                   |                |  |  |  |  |  |  |  |  |  |  |  |  |
|  |                        |                   |            |                |                |                   |                |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Grant Type             | Academic Year URG | Summer URG | Summer URG-Adv | AYURAP Student | Emerging Scholars | Language Grant |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Grant Success Rate     | 73.4%             | 61.8%      | 86.7%          | 20.7%          | 41.2%             | 35.9%          |  |  |  |  |  |  |  |  |  |  |  |  |
| IPEDS Race/identity  | Asian/Pacific Islander | 76.2%             | 67.3%      | 85.7%          | 19.2%          | 40.0%             | 20.0%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Black/African-American | 50.0%             | 64.0%      | 0.0%           | 34.4%          | 25.0%             | 60.0%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Hispanic               | 64.7%             | 69.1%      | 100.0%         | 15.8%          | 60.0%             | 0.0%           |  |  |  |  |  |  |  |  |  |  |  |  |
|  | International          | 66.7%             | 51.7%      | 50.0%          | 20.3%          | 0.0%              | 27.8%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Multiracial            | 100.0%            | 58.3%      | 100.0%         | 27.6%          | 0.0%              | 100.0%         |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Not Applicable         | 75.0%             | 57.1%      | 100.0%         | 33.3%          | 0.0%              | 0.0%           |  |  |  |  |  |  |  |  |  |  |  |  |
|  | White                  | 77.3%             | 60.5%      | 84.6%          | 16.3%          | 50.0%             | 55.6%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  |                        |                   |            |                |                |                   |                |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Grant Type             | Academic Year URG | Summer URG | Summer URG-Adv | AYURAP Student | Emerging Scholars | Language Grant |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Grant Success Rate     | 73.4%             | 61.8%      | 86.7%          | 20.7%          | 41.2%             | 35.9%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  | F                      | 78.6%             | 64.0%      | 78.9%          | 22.4%          | 42.9%             | 40.0%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  | M                      | 63.6%             | 58.4%      | 100.0%         | 15.7%          | 33.3%             | 23.1%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  |                        |                   |            |                |                |                   |                |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Grant Type             | Academic Year URG | Summer URG | Summer URG-Adv | AYURAP Student | Emerging Scholars | Language Grant |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Grant Success Rate     | 73.4%             | 61.8%      | 86.7%          | 20.7%          | 41.2%             | 35.9%          |  |  |  |  |  |  |  |  |  |  |  |  |
| FGLI Status  | First Generation       | 69.2%             | 45.7%      | 100.0%         | 20.7%          | 37.5%             | 33.3%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Pell                   | 63.3%             | 59.2%      | 83.3%          | 19.4%          | 44.4%             | 41.7%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  |                        |                   |            |                |                |                   |                |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Grant Type             | Academic Year URG | Summer URG | Summer URG-Adv | AYURAP Student | Emerging Scholars | Language Grant |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Grant Success Rate     | 73.4%             | 61.8%      | 86.7%          | 20.7%          | 41.2%             | 35.9%          |  |  |  |  |  |  |  |  |  |  |  |  |
| Financial Need Index   | 0                      | 72.7%             | 62.6%      | 83.3%          | 18.3%          | 0.0%              | 33.3%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1                      | 81.8%             | 67.7%      | 83.3%          | 15.2%          | 50.0%             | 50.0%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 2                      | 75.0%             | 65.4%      | 100.0%         | 18.8%          | 0.0%              | 0.0%           |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 3                      | 72.2%             | 59.6%      | 83.3%          | 25.0%          | 25.0%             | 50.0%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 4                      | 69.6%             | 57.9%      | 100.0%         | 37.8%          | 100.0%            | 50.0%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 5 (greatest need)      | 76.2%             | 55.8%      | 100.0%         | 19.3%          | 28.6%             | 33.3%          |  |  |  |  |  |  |  |  |  |  |  |  |
|  |                        |                   |            |                |                |                   |                |  |  |  |  |  |  |  |  |  |  |  |  |

## APPENDIX B: Undergraduate Student Focus Group Report by Saralyn McKinnon-Crowley

“Because I've been involved in research, I really feel like I found my place in the Northwestern community”

### *June 2023 Focus Group Report*

#### Executive Summary

Twenty-one students participated in eight focus groups in June 2023. Results indicated that the students are pleased with Office of Undergraduate Research (OUR) workshops, materials, and staff. The quality of OUR online resources, including annotated sample grants, received particular compliments from students. In terms of future priorities for OUR, the students largely agreed that summer research grants in the form of the SURG should remain the highest funding priority, though this was not universal. Students appreciated a system of grant evaluation in which arts and humanities, social sciences, and natural sciences and engineering grants were not pitted against each other and competing for limited funding. Most students wanted grant priorities to focus on whichever had the least funding available, though not all shared that opinion (some wanted equal priority and others favored a higher priority for arts, humanities, and social sciences). A grant environment in which there were sufficient grants available for all students who were qualified helped combat a pervasive “culture of elitism” at Northwestern, as one student said. Participants did indicate how burdensome research could be for FGLI students. Briefly, higher-income students saw a grant award as a bonus to supplement what they would be doing anyway, paid or unpaid. For low-income students, without the receipt of the grant, they would not be able to do research at all.

In what follows, the report contains an introduction, brief description of data collection, and then addresses general findings summarized by theme (The experience of FGLI students with research; students’ thoughts about the evaluation of the grant; the perception of URAP and the role it fills on the research pipeline; how students could be intimidated by the independent part of independent research; students’ perceptions of OUR’s services). Following that, the report reviews students’ opinions about the office’s priorities, describes what they found to be the most helpful resources, and summarizes advice they would give to students just getting started in research. The report concludes with a detailed description of data collection, analysis procedures, tabulated demographic data, the full data collection instrument, and references.

## Introduction

Undergraduate research is a high-impact practice (Kuh, 2008), fostering stronger student connection with the institution. As the title quote from Lara,<sup>1</sup> a Natural Sciences and Engineering student, indicates, it can shape student experiences with sense of belonging within the campus community (Strayhorn, 2019). In June 2023, the Office of Undergraduate Research (OUR)<sup>2</sup> recruited undergraduate students to take part in focus groups reflecting on their experiences with the office, suggestions for improvement, and their thoughts about where the priorities of OUR should be in the future in terms of both programmatic and grant focus. OUR wanted to supplement quantitative and brief feedback received through regular survey assessments with more in-depth, qualitative research in the form of focus groups. Data collection and a summary of findings, how students believe the office should prioritize its funding, programmatic recommendations, and what advice students would give to those getting started in research are included below. The report also includes a detailed description of data collection and analysis in Appendices A and B below.

## Data Collection

Twenty-one students, representing 24 different majors (see Table 2) and each undergraduate school at Northwestern, participated in eight focus groups in June 2023. The focus group facilitator, an Office of Undergraduate Research staff member, posed questions relating to the people and the resources that were the most helpful for their research journey, how OUR should make decisions about funding priorities, what OUR could do to make their experiences even better. Students participated in an activity to gauge their decision-making for Northwestern competitions. Participants offered advice for future students as well. When asked about funding priorities, students were asked about how OUR should prioritize summer grants versus academic year grants, SURG versus URAP, summer versus academic year grants, whether there should be a maximum grant amount available for students, and which general disciplinary area should be the office's highest priority. See Appendix A and C for further details about recruitment, student demographics and analytical methods.

## Overall Findings

These findings appeared across multiple focus groups. They were:

- 1) The experience of FGLI students with research
- 2) Students' thoughts about the evaluation of the grant
- 3) The perception of URAP and the role it fills on the research pipeline
- 4) How students could be intimidated by the independent part of independent research
- 5) Students' perceptions of OUR's services

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<sup>1</sup> Student names are randomly-generated pseudonyms. Research area is self-reported based on the office's traditional areas of funding. To protect confidentiality of participants, Emerging Scholars participation was omitted from one student's information below. See Table 3 for a summary of which participant was in which focus group.

<sup>2</sup> See Table 1 for an explanation of all abbreviations used.

## FGLI Students and Research

The students in the groups who held FGLI identities expressed how different their experience with research and the grant-seeking process compared to those who were not FGLI students. Put simply, without the SURG or URAP, they had no ability to do research.

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*“If I wasn't able to get compensated for my summer research, it just, it's period not possible for me to do it” –  
Lara*

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For higher-income students,<sup>3</sup> in both their telling and in the reporting of FGLI students about them, the SURG grant was a nice bonus. They would be able to live wherever they liked and do research or pursue an internship whether or not they got a grant. Thomas, an SSJ student and SURG recipient who was conducting remote research from home where he was not expected to contribute to household expenses, said: “I'm thrilled that I'm getting \$4,000 for the summer. I'm spending maybe 500 of that on my survey and going to pocket the rest. So I don't necessarily need the money to do my project, first and foremost.” For FGLI students, this was not the case. Without a grant, they would need to earn income for their living expenses and would not be able to conduct any research. Lara, an AYRUG and SURG recipient, mentioned in the focus group that she had strong opinions and spoke at length about the experience of research for low-income students. She identified as a FGLI student and stated concisely: “if you don't get funded, you can't do research. You are simply barred from that opportunity fully.” Clementine, a FGLI student who had received a SURG in the SSJ area, said:

A difference between someone who can still afford to do research even without the grant [is] they still have that on their application, the time they spent doing a project or something. Whereas someone who literally didn't have the time because they had to get a job. Then it's—then all they have on their application is, a part time job, Noodles and Company or something.

Research cannot be a side project for a low-income student who must work in order to earn income over the summer. For FGLI students, summer could also serve as a time to earn extra money for the academic year to cover any unexpected expenses. Anastasia, an AHP student in the Emerging Scholars program, was very concerned with finances upon the program's conclusion:

I haven't been able to find work here. But it's kind of a concern, 'cause I am budgeting so far. So now, as soon as I get back home I'm gonna have to find a job. 'Cause I feel that would just make me feel a lot safer. And I was tapping into my savings from that job before.

Anastasia's pursuit of income sits in sharp contrast to Thomas' pocketing of extra, non-survey expenses. The need to earn income also became relevant for students pursuing lab work. They were fearful that

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<sup>3</sup> I am speaking quite broadly here. All income and FGLI status is self-reported by students and we did not specifically ask students if they were on financial aid.

they could spend time in an opportunity that would not lead to a significant economic return, as Lara depicted:

I'm a FGLI student. If I wasn't able to get compensated for my summer research, it just, it's period not possible for me to do it. I can't justify being in the lab that often if I'm not able to even pay for my living expenses. And I know I have a lot of friends in sciences who were very, very late to get into a lab, for the sole reason that they had to be working one or two jobs to help flesh out their finances, and they were really scared that if they were to try and spend all this time trying it, and they would be told that they wouldn't be paid. And so I know that's really, really stressful for a lot of students.

The SURG grant and any other summer research opportunities, then, could serve as a democratizing avenue for FGLI students to pursue research who would otherwise need to earn a full-time income over the summer. Lara noted that for summer housing:

Unless you have an ongoing lease, even if you want it to sublet—which is what I know a lot of first year students do—usually you have to pay upfront the amount that you're subletting for. So if you don't get a lump sum grant, it's not even feasible to work part-time outside of your 40 hours of lab to try and recuperate that money unless you already have that much in the bank, or you're taking out a loan. And I think those are big expectations for a first year undergrad to try and then be in a lab for the first time full time, and then trying to do part time, and then also, maybe tapping into a huge portion of their savings or going into debt to try and fund their research experience.

These students' experiences and reports suggest that the provision of housing could be beneficial to those receiving summer grants. As Anastasia said, “most of the stipend anyways is going to rent now.” Multiple students in the groups mentioned weighing the possibility of taking the two classes required for summer Northwestern financial aid just to receive additional money, particularly given asynchronous and fully virtual options available, or seeking work despite the terms of the grant. It is possible students are taking classes and working despite the explicit terms of the summer grant.

*Recommendation:* Consider incorporating an application for students to request additional money for a grant. Consider a partnership with Residential Services for students to opt in in order to use their grant money to live on campus. Continue to prioritize getting starting in research for FGLI students. Encourage labs to pay students for their labor.

## Grant Evaluation

To gather student opinions regarding how the grant submission process is perceived and evaluated whether a changed evaluation process might alter students' perceptions of the grant, students were presented with a choice between two programs to which they could apply, “Northwestern Stars” and “Northwestern Champions.” As described to them, students could only apply to one program; programs were both evaluated by the same faculty using the same criteria. For Northwestern Stars, however, only the top 200 applicants received a prize. For Northwestern Champions, anyone who the faculty deemed to be qualified would receive the prize. After gathering opinions about which they would apply for, the researcher altered the criteria to see if changing the grant amounts or the prestige of the programs would impact the students' likelihood of application.

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*“I’m at a place where I would not apply to the more prestigious one in fear of failure, and in what that would mean about me and my work” – Janet*

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Nineteen out of the 21 students said they would apply for the Northwestern Champions first. Esme, an NSE student who had not received any OUR grants yet, offered a typical reasoning:

I'd be more likely, I think, to apply to the Champions just because it like sounds a little bit more attainable. And then it's not like, “Oh, there's like 202 people with really strong applications,” or whatever. Because then I feel like maybe it would get—I don't know, I wouldn't want to be the 201<sup>st</sup> person who...does have a really strong application. But it's just like, “well, that's all.”

Marietta, an SSJ student who also had yet to receive an OUR grant, agreed: “I would be most likely to apply to the second one, because I think there are thousands of very, very capable students here, so I wouldn't want to be put up against them. But I still think if I wanted to do this, I'd be confident that could still produce my own strong application.” The two students who would apply for the more selective grant did so because they were drawn by its exclusivity and their own competitiveness. Iris, who had received both a SURG and a URAP and conducted research in the AHP area, said:

I think I would actually prefer applying to the Stars program, because I feel confident in my application and project. And having it be exclusive, would actually incentivize me more to apply for it, because then I could say, like, “Look, I've been awarded this special award.” I kind of like the competitive element of it.

Korinna, an AHP student who received a URAP, felt similarly competitive and imagined that the selectivity would come with a higher level of access to exclusive resources:

I think the Stars one, this is the one I would apply for. I think I'm also just slightly competitive. So I'd be like, “haha, I won,” if I did get it. But also...I feel like maybe if I got Stars over Champions, there would be more room for people to help me in the OUR...Office, or whatever. I feel like it could be more personable than Champions where anybody could be asking so many questions. And then you might not get back to me for multiple days.

The selectivity implied with the program meant that Korinna would receive the personalized attention she desired. When the prize amount was changed by a \$500 difference between the two, most of the students would stick with Champions, though some would then aim for the higher-risk, higher-reward Stars program. When the difference between the two programs was \$1,000 in prize money, almost all would apply to the Stars program. Prestige was generally not a factor in their decision-making, though Janet, an NSE student who received a SURG, observed when offered that choice:

I think if I were more confident in myself, I would choose Northwestern Stars. That's probably what I would do in high school. But since getting here, my confidence has taken a slight plummet, just with comparing myself to other people. So right now, I'm at a place where I would not apply to the more prestigious one in fear of failure, and in what that would mean about me and my work. Just to protect my self-confidence a little bit, until I think I know what I'm doing.

On the whole, due to the high ability of other Northwestern students, the students valued opportunities where they were not put into direct competition with the student body for scarce resources. Anastasia and Francine, who were in the same focus group, both decried the “culture of elitism” they experienced at Northwestern and valued the opportunity to share resources. Francine is an SSJ student and a SURG recipient. In reflecting on why they picked Northwestern Champions to apply to, they said:

*Francine:* Considering I'm gonna put in the same quality and effort of work into both proposals or submissions, for the second one [Champions], if I don't get it, then I'll understand. Oh, maybe it wasn't good enough, as in the proposal itself didn't really live up to the standards of the judges. But if I don't get the first one, I'll be like, “Oh, maybe I was worse than the 200 people that did get it.” So I think mentally, it's also a bit more harsh to get through. And also it fosters a bit more of a competitive culture that you need to compete with your fellow friends in college. As I said before, I worked on my [SURG] proposal ... with a lot of my friends, and it was really nice, and we were all like, “Oh, yeah, I hope we all get it.” And I feel like there would have been a little less of that if there was a quota. So, I like the culture of giving it to everyone who deserves it as long as their quality is good...

*Anastasia:* I feel like things like that, they always feed into that culture of elitism. And I could see the way like, some person like, yeah, they get it and they're really proud of themselves. They can put that on their application. But I don't know. I—it's like, “oh, yeah, we're elite.”

Extrapolating from this small-scale example, the grant evaluation process could offer a rare moment of respite from the competitive culture of Northwestern that pits students against each other.

*Recommendation:* Continue evaluating grants in the same manner as previously and preserve discipline-agnostic evaluation.

### Perception of URAP

Out of the five students in the group who had completed the URAP program, three were enthusiastic about the program and wished for it to continue. As an example, Marisa, an SSJ student, shared:

I did URAP, and I feel like it was a good way for me to start doing research in a field that I was—didn't even know that you could really do research in. And it was...I feel like it [URAP] was definitely a lot easier than the SURG process. So I feel like for that reason, it's really important, because all you have to really do is submit your resume, and just a one-page cover letter. So it's really easy for freshmen and underclassmen to get involved in research.

Iris was even more full-throated in her support of the program:

So I received a URAP last summer, and it's opened up so many doors for me. This is how I found my faculty mentor. And I've continued to work for my faculty mentor throughout the school year, basically doing URAP, but being hired through the department. And for me, I felt like it was so much harder to get my foot in the door and URAP was a means of doing that, than it was to just apply once you already have some experience. Because I already know conferences that I can apply to now that I have my initial experience, but for me getting started was the hardest thing.

Korinna, an AHP student, also treasured her URAP experience: “I don't think I could have gotten to the independent without the URAP. But I think for me it was important to have that first experience working really close with someone and getting real mentorship that wasn't me doing my own project first.” The other two students who received URAP either offered no comment or negatively compared the URAP to other research mentoring experiences they received.

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## *“Getting started was the hardest part” - Iris*

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Some other students who had not received URAP were less enthusiastic about its utility, with some wondering why it was necessary if the training could be built into the SURG or folded into other programs. Rory, a student in the SSJ area and SURG and CTG recipient who had been rejected from the URAP, recalled:

And one of the reasons why they told me [for being rejected from URAP] that, in the early—literally freshman fall, and they said, “you're over qualified.” And I was like, “but I've never done research before.” And so I—that may have been one of many reasons, which is totally fine. But, I do feel like it's really exciting as a student, not just to help a professor with what they're doing, but to watch what you've done grow into something. So, I would prioritize that.

Other students in lab sciences spaces found URAP to be unnecessary training for their area, as Heng, an NSE student who received a SURG said: “SURG is fine for people like me who have not participate[d] in research before.”

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## *“I do feel like it's really exciting as a student, not just to help a professor with what they're doing, but to watch what you've done grow into something.” - Rory*

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The students in the groups seemed to be under the impression that URAP was permanently cancelled and would not be available in following years, which could be understood from what Korinna said:

I feel like even if URAP wasn't funded or wasn't funded to the same extent, I would still think that it's an extremely helpful experience, and it's just a nice thing to have on your resume, like, “Oh, I started my research journey when I was a[t the] beginning of my undergraduate career. And now I'm doing my own project.” So it's a good, I guess, domino effect.”

Perhaps understanding the nuances of university budgetary cycles are a bit much for students to appreciate.

As an additional note, the students seemed to think that because the SURG was so popular this year, the SURG was especially competitive and very difficult to get. Francine shared: “a lot of my friends agreed

that it was a very well-advertised opportunity, and most people did at least hear about it. Some people were complaining that it was advertised too much, and that's why they didn't get it." Curtis, an NSE student who had received a SURG, confirmed this opinion: "I have also heard about lots of people who wanted to get SURG grants who couldn't because of how competitive they were this year." This is a campus perception that could be addressed.

*Recommendation:* Continue funding the URAP during the school year, even if at a reduced rate. Getting started is a struggle for some students, even if not all. Continue prioritizing URAPs for students outside of the NSE research area as URAP seems to be especially helpful for students conducting research in those disciplines.

### Concern with Independence of Research

Because the focus groups encompassed people in all stages of grant receipt, it is possible to see different stages of how students conceptualize independent research through this research project. This section showcases student perceptions of the independence of research from multiple student vantage points, starting with a student who has yet to receive a grant. The independence offered by the Summer Undergraduate Research grant was intimidating to some students, though exciting to others.

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## *"I didn't know enough about research to have that independent interest" – Marietta*

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For example, Marietta, who was planning to apply for the URAP prior to its cancellation, said the following:

While I did say that I think the SURG is a really good program to fund, I think there needs to be...even if you do continue, if next summer it's the same where only the money ... for the SURG, and not the URAP. That then, if you paired that with more programming and training to connect people with labs who don't want to do the independent research. Because I didn't really have any ideas for independent research. So I wasn't really able to ... apply for the SURG just because ... I didn't know enough about research to have that independent interest.

Here, Marietta expressed concern that she did not have "any ideas" for independent research to such an extent that she was not "really able" to "apply for the SURG" due to not knowing "enough about research to have that independent research." Students also reflected on their experience as recent grant recipients and what might help others be less intimidated by the notion of independence.

Given that OUR marketing focuses on the \$4,000 to do independent research, which could be "enticing," as Francine put it, but without seeing what that entails and the final product of research, students could feel intimidated. Francine stated:

Being exposed to more student work. I think, could have been a great motivation to get started, even more so than—I feel, like, the advertisement that I encountered was mostly "you can get \$4,000 for researching your own topic," which is very enticing, too. But also looking at the work

that students did. Maybe through like an Expo....just how the club fair operates being able to go around and see and hear from students: “Oh, this is what they did in the summer or in the academic year,” or maybe professors also coming out and explaining their research, and specifically the role that undergraduate research assistance play in their research, like, knowing exactly what you can contribute to and what, like, the greater product looks like—could look like, I think is a very great motivation to get started.

Seeing what students actually produced, Francine conjectured, could help assuage the fear tied up with intimidation.

In the context of sharing her advice with other students, Janet reflected that the nature of independence in the sense of the project depending on her work was also quite daunting: “having your own independent project, especially, is really scary. And, it’s just all the thoughts of, ‘what if I don’t know what I’m doing, what if it all goes down the drain,’ stuff like that,” but offered reassurance that most PIs were quite understanding.

Other NSE students, responding to each other in the same focus group, emphasized that independent research did not require students already had all the training required to conduct the project at time of writing:

So even though it [SURG] is an independent research experience, it doesn't mean that you need to have experience already. – Dani, NSE student, AYURG, SURG recipient

*Curtis:* Yeah, I actually want to echo that because the SURG is actually my mechanism of really getting started in research...what happened was...the particular lab that I'm in, I got into it... during winter quarter, and then spring quarter I spent learning and training on how to use the equipment and then used the SURG time to actually perform the research. So you don't need— exactly as [Dani] said. Basically, you don't need to be experienced in research to get a SURG. So it is a perfectly fine introductory mechanism into getting the into the world of research.

Independent research does mean doing research totally alone and without support.

*Recommendation:* Students might need extra reassurance that the independent portion of research does not require them to be fully equipped researchers and need no further training as they write SURG grants. Advertising could reflect some nuance of that experience as well to minimize intimidation. Consider expanding research bridge resources or programming that help students transition into independent research, such as the goals accomplished by Emerging Scholars.

### The Level of Service They Have Come to Expect from OUR

Students specifically requested—also explained below in the “Programming and Additional Resource Recommendations” section—more help with three areas of support from OUR comparable to what they received from the SURG or ULG:

- 1) IRB support
- 2) Summer housing resources
- 3) Governmental support

While students sincerely appreciated just how much support from the office were available for those seeking SURG or other grant opportunities, they seemed to want that level of resource provision for other areas outside of the grant as well. For example, OUR's support was positively described by Lara as:

Knowing that I could get as many advising appointments as I needed as long as I was on a long enough timeline. And everyone in the office was being so friendly, and letting me know that there were snacks. So making sure that I left with the pen if I wanted or stuff like that.

In terms of repeatable resources, Kathleen, a URAP student in the SSJ area, said that what had been most helpful was "the Office of Undergraduate Research website. All of the specific examples they have of example grant proposals, example posters being able to see those kind of specific guides has been helpful." Students appreciated this help, but also wanted support for IRB support, housing, and help navigating other administrative systems. Rory, a SURG and CTG recipient doing SSJ research, explained:

I think I needed—once I got the SURG grant a little bit more—and part of this was just that I didn't reach out for it, so that is part of it—But like talking me through the IRB stuff a little bit more. For instance, I know that there was a little bit of like, "Here's what you need to do" information. But nobody had told me that I was supposed to do it in Microsoft Word so that I could do the "track changes" thing. And so, I just sort of always default to Google Docs. And then that caused problems.

Rory does not claim full responsibility for the situation, but wanted more detailed help with a process entirely out of OUR's control.

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## *"It's on you to make it work" – David*

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In the same focus group, Iris said that finding summer housing had been a problem for her:

I know for me, last year when I was applying to URAP, and I figured out that I had gotten the job, I was really excited. But I received the decision pretty late, and my position required me to be on campus, so at the time I didn't have any housing. And when I went to the office for support, I mean, they didn't have, frankly, a lot of options or, really, advice for me. So, I was kind of left to find a place to live within a couple of weeks. And luckily it worked out. But if it didn't, I probably wouldn't have been able to do the program. So I don't know, maybe something about having more guidance about housing or I don't know. Maybe the decision date could have been a little bit earlier. I think that would have helped me out a little bit.

Though this is not necessarily entirely within OUR's control, Iris went to OUR for help with this problem caused by a sponsored program. David, a ULG student, added in response to Iris' comment in the focus group:

And just kind of what she said, and housing issues, and these are things that just kind of emanate from students having to deal with government bodies by themselves, I don't know if that makes sense. So, I'm in a very similar situation...And the office can't do much,

understandably so. So it's—you have to make it work on your own, they can provide you all the documents and stuff you'd need. But it's on you to make it work.

A potential implication is that the high level of service available for grants within OUR's purview is then expected for IRB, housing, and even governmental bureaucracies.

*Recommendation:* Continue advertising and offering workshops on those topics. Consider offering more detailed OUR resources for other activities adjacent to or related to OUR programming such as housing or IRB.

## Prioritization

When asked how OUR should prioritize the following areas, the students had the following to say:

### *Highest Priority: SURG or URAP?*

- 13 SURG
- 3 URAP
- 4 equal priority
- 1 request for “some sort of like hybrid program where you could get the experience learning from a professor while still getting to do your own ideas” – Thomas, SSJ student, SURG recipient

### *Highest Priority: Arts/Humanities/Creative Works, Social Sciences, STEM*

- 7 thought it should go to whichever area receives the least funding out of the three areas, though were not sure which area that was
- 4 Equal Priority
- 4 Arts/Humanities/Creative Works & Social Sciences
- 2 STEM & Social Sciences
- 2 STEM
- 1 thought funding should go to interdisciplinary work
- 1 request for funding based on “whoever who has the most demand for it. Your students who prioritizes social sciences in the office should just do social sciences more. If a year of students wants science grants more, and basically nobody applies for the arts, then do most of the... science field.” – Matilda, SSJ student, URAP recipient

### *Should There Be a Lifetime Cap on Awards?*

- 13 Yes
  - 1 specified that FGLI students should get money to attend conferences: “the cap isn't a hard cap for every single student.”- Tania, AHP student, SURG recipient
- 3 No
- 2 thought there should be a cap with Conference Travel Grant specifically
- 1 thought there should be a maximum amount of times a student could get an award (two times ever) rather than a financial cap
- 2 Unsure

### *Should Summer or Academic Year Funding Be a Higher Priority?*

- 9 in favor of Summer funding
- 11 not asked explicitly about this but; can extrapolate summer was a priority while still wanting to know options for being paid to do academic year research
  - “As a FGLI student, having the funding... for living expenses has allowed me to do research that I never would have been able to balance with a job. And if I didn't have if I didn't have funding to do this an independent project over the summer, I would need to be working full time in order to support myself, because ... there would just be no way that I'd be able to do research at the same time” – Kathleen, SSJ student, URAP recipient
- 2 thought they should receive equal priority

#### *Should Housing Be Provided for Summer Grant Recipients in Exchange for Lower Amounts?*

- 7 Provide Students the Option
- 2 No Housing
- 1 Provide Housing
- 11 Not Asked

#### *Should OUR Consider Financial Needs for Grants?*

- 12 No, OUR should be need-blind
- 4 Yes, OUR should consider financial need in making decisions
- 4 Yes, students on financial aid can ask for more grant money after winning the grant
- 1 Yes, students on financial aid should get more grant money

### Most Helpful Resources

In order of frequency, the students mentioned the following as the most helpful resources in their research journey:

- 1) Annotated sample proposals (8x)
- 2) OUR website more broadly (3x)
  - “The website is set up in a really, like, easy-to-navigate way, and there's a lot of resources out there. So especially when I was, like, just starting and had no idea how to write a grant, that was super helpful” – Shay, NSE student, SURG & CTG recipient
- 3) NU library resources such as databases, ProQuest, etc. (3x)
- 4) OUR website guidance on how to write an e-mail to a lab (2x)
- 5) NCA Career Advancement Guide (2x)
- 6) OUR workshops (1x)
- 7) Developmental Science Research Speed Networking Event (1x)
- 8) OUR FAQ for SURG (1x)
- 9) AHSS (1x)
- 10) SRW Canvas Page (1x)
- 11) HR office for international student help (1x)
- 12) Events where research is presented (1x)
- 13) Zotero (1x)
- 14) Northwestern Scholars (1x)
- 15) Fellowship Finder (1x)

## Advice

Students were given the opportunity to offer advice to students just getting started in research. They offered reassurance that research is not as scary as it might seem:

“It's not that serious. It feels like this big word coming in the Northwestern, and like very stressful. But in practice it's like it's something you're very capable of doing at an undergraduate level.” - Thomas, SSJ student, SURG recipient

Students also recommended getting started early with speaking with both OUR staff and professors. Professors want to talk to students!

“They love what they do, usually, and that they're really excited to share what they're learning and what they're doing. So that you don't have to be intimidated by that.” - Anastasia, an AHP student, Emerging Scholars

[I would advise] just reaching out to faculty and not being scared because all the faculty that I've talked to at Northwestern are super helpful and super willing to work with you. I've never met someone who—I mean, they might not answer your emails, but find their office hours, or whatever. There's ways to get in contact with people. And I don't think usually people say “No,” unless they don't feel qualified.” – Korinna, AHP student, URAP recipient

Further, they recommended talking to many different professors, even though it's difficult to take the first steps into doing so:

“The hardest thing about research is that you have to do it yourself like, even though professors want to tell you stuff, you've got to take the initiative.” – Thomas, SSJ student, SURG recipient

“Try and talk to as many professors as you can. And get in on like as many different lab meetings and stuff” -Esme, NSE student, no grants yet

Further, students encouraged each other to remember that first and foremost, this is a learning experience:

“Research for a lot of people is the first ...that they're having in a long time where it's—I'm actually, learning what I like to do and these things interest me, and I'm able to do my own thing. Which—and it... reminds you that like, “Oh, yeah, that's how learning should be.” You're not supposed to already know what you're doing. ... And I think that just having that mentality of that learning mindset, learning mentality, and being curious rather than judgmental for yourself, towards yourself, for not knowing something or being too critical of yourself, is the mindset that you want to have going into research, especially for the first time. And it's something that continues, I think, but especially when you're just starting.” – Manuel, SSJ student, SURG & CTG recipient

Therefore, failure is part of the process:

“failure is inherent in research. It took me a long time to come to terms with that” – Curtis, NSE student, SURG recipient

## Programming and Additional Resource Recommendations

The following suggestions were offered by students in the focus groups as resources they wanted from OUR, supplemented with quotes. Some resources may already be on offer with the office, but the request from students could indicate a need for further advertising. The first section contains programming suggestions requested by students in multiple focus groups; the second section contains suggestions mentioned once. Each suggestion is followed by a descriptive quote. Suggestions are sorted by broad content area.

### Requested Multiple Times

#### *Getting Involved in Research*

- Maintaining a student-submitted database of research opportunities
  - “I think one thing that I was looking for, which might be kind of a stretch about if this would be possible to be done, but a list of professors that would accept researchers or undergrad research. Because a lot of the labs that I did reach out to is like, “we don't take undergrads.” Or like a student list, maybe a student-cultivated list of like, “Here are some labs that undergrads have worked in in the past.” – Esme (NSE student, no OUR grants, expected 2024 graduate)
- Maintaining a list of faculty willing to accept undergraduates in their labs
  - “I wish there was, sort of, if there was some sort of resource that I had, like, a master list of like labs looking for undergrads. That could be. That could be really great.” – Marietta (SSJ student, no OUR grants, expected 2024 graduate)
  - “Maybe a bunch of PIs that are open to undergrads in their lab, a list in the website. If you guys reached out to a bunch of people in each field...sent out a survey and asked if they were willing to accept undergrads, and then include their e-mail, and you could have just a long list of survey responses. ‘Cause I feel like that would help a lot of people.” – Janet (NSE student, SURG grant, expected 2026 graduate)
- Hold more faculty/student research mixers
  - Speaking about the January 2023 Developmental Science Research Speed Networking Event: “I was nervous about emailing labs and then being like, “Oh, we don't take undergrads, or all our spots are filled,” or something. But I knew those labs were looking for students if they were like showing up to that session, which was great. And I think you could do that for any other areas, like a history, research session, or a biology research sessions, just have a few labs” – Marietta

#### *Next Steps After Research*

- Offer help in translating research to resume or career materials
  - “I never even thought about this, is how to add...science research to your resume. How to talk about science research that you do because a lot of, resume advisors that I've talked to and stuff just really have no idea what I'm doing. And I've never described it before, and it's hard to do that. But my lab tech this week helped me... like, “Oh, you should like in your first bullet point, say the general thing that the lab is doing, and then your second bullet point project that you worked on in the third point, for the skills that you did.” So just like kind of a format. Because I just had no idea.” – Esme
- Have a fund available by application for students with greater financial need

- “I think demonstrated need is an important thing to consider... think it would be fair to give students with financial need with a little bit more money. But I think it works if they apply for more money, as opposed to giving them more money” – Janet
- “You award the grant. And then maybe then you could ask a little more about financial situation that way. Because I feel if someone needs more financial assistance, but they are not meeting the qualifications for the grant, I don't think that should necessarily preclude others from receiving the grant, and having the person that needs the money to get it.” Manuel (SSJ student, SURG & CTG grant, expected 2025 graduate)

### *Further Advertising of Existing Resources*

- Promulgate more resources to students about reading scientific literature
  - “I think another thing that'd be really helpful is a workshop on how to read a scientific paper. I'm sure there's, like, an equivalent for humanities papers that it might feel equally jarring. But I know first getting into research, I had no clue how to read scientific literature. And that makes it even hard to search for a lab, because to really understand the work that someone's doing, normally you have to read their publications, and normally that isn't a ton of information. And as you go through your research, and you start trying to put together presentations that is normally very similar to the style that is encouraged to present your work in or write your work in. And, so if you're familiar with it early on, I think it would make difficult process less stressful. - Lara (NSE student, AYURG, SURG recipient, expected 2025 graduate)
- Provide more help with the IRB process for students who need it
  - “I had a lot of trouble just with the IRB. I know that not everyone has to do that. But after getting the grant, writing the whole IRB proposal, which just seems like it was just—I had no idea how to do it. And so, and I really like the system when I was writing my grant with being able to meet with Diamond and talk through it, give her my drafts and have her read over it. So I would have liked some kind of support in that way for that from the undergraduate research office, or just more information. Because there's a lot of information on the website about the grants, but not about IRB, because I know that's not necessarily the undergraduate research office. But I know that a lot of undergraduate researchers have to deal with that [IRB].” - Tania (AHP student, SURG grant, expected 2025 graduate)

### *Campus-Level Collaborations*

- OUR feature at Wildcat Welcome
  - “I was also a PA this year, and a lot of my students were interested in [be]coming involved with research. But [it] kind of felt like a lot of them were going to me and being, like, “I'm not really sure how to do this, I feel really lost,” and I would immediately direct them to it [OUR]. So I'm not sure if they just didn't know that the OUR was there or how to use it, or [were] intimidated by it. But...I think maybe if there is some way to get students connected with it as soon as possible, either at Wildcat Welcome or something, that could be useful to them.” – Shay (NSE student, SURG & CTG, expected 2024 graduate)

### *One-Time Suggestions*

### *Getting Involved in Research*

- Host a faculty panel about their experiences with first meetings with students (in a mixer or other format)
  - “I think that would be the best resource to add, just something, either with a list of all of the professors doing research, or even like an event where you know, you brought in professors who, even if they didn't meet with students on one, talked about what the first meeting looks like or what they look for in a student. Just kinda making it a little easier to understand as like a freshman. I think that would be super helpful.” – Thomas (SSJ student, SURG, expected 2025 graduate)
- Provide a resource to help students navigate first meeting with faculty member to make sure the lab experience will be worthwhile
  - “Some sort of resource that you can like, maybe with like directed questions, that you can ask to your lab to kind of like guide you towards: Is this going to be a grunt work position” – Thomas
- Implement a lab shadowing program for those interested in joining research labs
  - In response to what advice they would give to someone just getting started at Northwestern: “Shadowing someone in the lab, which it just has been so nice for me to have. You just really have no [clue] for what you're getting into, if you didn't do—especially, I feel like some people in high school managed to get more exposure to lab stuff, or even in their science classes in high school, they did more with it. But when you're [a] first year you might have only done general chemistry lab, and that's not really super representative of what happens in a lab space. So it can just be extra jarring for some people, me included.” – Lara

### *Social Media/Advertising*

- The decision about URAP being communicated in a meme-rich e-mail was not taken well for a student relying on URAP
  - “I did not appreciate, I'll say, is that when you cancelled the [URAP] grant, the—the email line was like a joke. About, like, elephants or something, and I opened it. I was like, “oh, my gosh.” - Marietta
- Have a Table of Contents or some indication of content in the weekly newsletters
  - “A lot of people don't read the emails. I know I don't read them every single time, the OUR emails when they come out. But there's some really good resources there. And I think a lot of people don't realize that because they just think it's spam or it's not really that useful, but it can really help” – Manuel

### *Suggestions for New Resources*

- Offer more resources about how to get funding for research during the academic year
  - “About research during the academic year: I feel like having compiled resources a little bit more about opportunities to get wages for that, because the academic year URG doesn't work for wages” - Rory (SSJ student, SURG & CTG grant, expected 2025 graduate)
- Recommend or offer resources to facilitate conversations about accessibility (physical, etc.) in the lab and research environment

- “I’ve been really lucky to have a faculty mentor who’s very super understanding, like, from the get-go, was very much into conversations about “how do we make this experience accessible to you, what do you need from me.” And there was a lot of conversation there. But I feel like, and I don’t know if someone from other fields, could speak to this at all. The difference between maybe social sciences and then a more lab-based setting, it might be conversations about accessibility, specifically, might be kind of different.” – Kathleen (SSJ student, URAP, expected 2025 graduate)
- Explain lab-specific terminology like “postdoc”
  - I did the Science Research Workshop my freshman year...I had a greater understanding of what I was getting myself into when I was getting into a lab. I had the vocabulary of postdoc, grad student, which obviously I—I hadn’t really known before, and I think that was really helpful. – Shay
  - *Lara*: No, that’s so true, because when I started in my lab, the professor that I talked to about joining the group had emailed me like, “Oh, I found someone to work with. He’s a postdoc,” and I didn’t know what that meant. And then I thought it was just a type of grad student or something. ...I just literally had no reference for what that meant, and that didn’t— that didn’t even register as something I should Google, because I was just so misguided, I guess.”
- Give examples of final projects online, in addition to the Expo
  - “Seeing kinda like the progress of what people thought they were gonna do in the beginning, and what ended up being their final product, I feel like could be helpful. But also, in the same way that the proposals were helpful to me, just looking at what different people had for their final products would be a good guideline for how I could make [and] illustrate mine.” – Francine (SSJ student, SURG recipient, expected 2026 graduate)
- Provide more resources about translating research experience to graduate school
  - “So once I started doing research, I realized that I really enjoyed it, and maybe I wanted to pursue it, like, as a career path. And I had a hard time finding, I guess, formal resources about, what is that path like? What do you need to do? What are the important things to think about?...I wasn’t quite sure where to turn to ask for advice about: Now that you’re in a lab, what should you be doing to put yourself in the best position to apply for grad school? And what does that process look like?” – Dani (NSE student, AYURG, SURG, expected 2024 graduate)
- Encourage students to also conduct research externally and provide resources to do so
  - “I think, doing research externally is important, to show...that it’s not just the Northwestern environment where you can thrive... it’s any lab. You have the skills for that. And to get those often require getting grants [sic] awards to show that you have those skills.” – Dani
- Give a list of helpful resources for research support
  - “A list of different resources, links that students could use, things that aren’t necessarily easily found through a simple Google search. For example, my friend requested access to this software that this professor...created for surveying. And I thought that was really cool, and I wouldn’t have known about it. And I didn’t even know those type of survey software existed because I never done research like that...So I thought, especially for

kids new to things like this, there's a lot of tools out there that we don't know of. So databases, some type of software. Yeah, just not even tutorials. I think those are available online. But getting to know that those exist would be helpful” Francine

### *For Grant Winners*

- If possible, be strategic about release URAP decisions, given that timing had a negative impact on some students’ abilities to find housing
  - “I know for me, last year when I was applying to URAP, and I figured out that I had gotten the job, I was really excited. But I received the decision pretty late, and my position required me to be on campus, so at the time I didn't have any housing. And when I went to the office for support, I mean, they didn't have, frankly, a lot of options or, really, advice for me. So, I was kind of left to find a place to live within a couple of weeks. And luckily it worked out. But if it didn't, I probably wouldn't have been able to do the program. So I don't know, maybe something about having more guidance about housing or I don't know. Maybe the decision date could have been a little bit earlier. I think that would have helped me out a little bit.” – Iris (AHP, SURG & URAP, expected 2026 graduate)
- Offer weekly check-in groups with SURG grants
  - “For the SURG program, just from what I know with friends, it could be good to have...a group that you could like meet with every week, every other week to talk about your projects and how they're going and have that accountability” – Marietta
- In Summer Skills Training for SURG winners, have a panel of award winners beyond Peer Mentors
  - “I think it might be helpful for programming with the office to be connected with previous award winners like we did with the workshop last time...I think everyone got to meet one in a breakout room, but it would have been nice to meet a few more, especially if they're relevant to your category or a topic, and just hear about how they did it, what their timeline was like. Because during the breakout room that everybody was done speaking as such as I just asked—“can you, like, share your what your topic was last year?” And then she told us very shortly, just for a minute, what her topic was, and where her final product was, and what her timeline looked, when she started and finished research. And she said that she procrastinated and ended up doing a whole bunch of things after school started, and just hearing those stories [was] comforting because it's very daunting to start something like this. I feel just looking at what the website tells you to do, but knowing how real people have done it, and have made mistakes and have made bad choices. I think it makes it a lot easier to approach. And also—it's a good—you get a good connection base to reach out to if you ever do run into trouble.” Francine
- Offer more resources for presentation of research
 

In response to what additional material OUR could offer: “I was thinking maybe another one could be presenting research. When I had experience presenting, I was lucky enough to have friends who they already done it and could offer tips. But a lot of my friends are so qualified, and they're still like, “no, I don't know how to present it. I'm

scared I'm not gonna do a good job.” And I think that that would be helpful for them.” – Shay

## Appendix A: Collection and Analysis

Data collection took place in June 2023. Saralyn McKinnon-Crowley, outgoing Education Program Manager, Office of Undergraduate Research, conducted all focus groups. Northwestern students or alumni who had accepted any of the following grants received an e-mail invitation to participate in the groups:

- 2022-2023 Academic Year Research Grant
- 2022 or 2023 Summer Undergraduate Research Grant
- Emerging Scholars Cohort 2 and Cohort 3
- 2023 Conference Travel Grant
- 2022 Summer Undergraduate Research Assistant Program
- 2022-2023 Undergraduate Language Grant

Participants in the 2023 Undergraduate Research Expo and Creative Arts Festival were also invited to engage in focus groups. This resulted in an unduplicated count of 822 students.

The weekly Office of Undergraduate Research e-mail newsletter also contained an open invitation to participate.

Participants indicated their interest by completing a demographic questionnaire via Qualtrics, collecting their name, e-mail address, self-reported race and ethnicity and any other demographic information they chose to share, and availability for participation in groups. Those interested received weekly e-mails until the end of June inviting them to sign up for a Zoom or in-person focus group. E-mails and communication with students shared that those who completed a group would be entered in a drawing to win a \$25 Visa gift card. Seven cards were distributed through random drawing after the conclusion of all groups.

Fifty-two students expressed some interest in the group by at least partially completing a demographic survey, but not all scheduled and participated in a group. Ultimately, 21 students participated in the eight focus groups. Students scheduled themselves for groups based on availability. After all groups were completed, two groups had one participant, four groups had two participants, one group had four participants, and one group had seven participants. Self-reported demographics for participants in the groups are displayed below (see Table 4).

Seven groups took place using Zoom; one took place in-person in a private setting in the Office of Undergraduate Research. The researcher used a semi-structured protocol (see Appendix B) in asking questions (Russell & Jarvis, 2019). Not all questions were asked precisely as written or in the precise order below; not all questions were asked in the protocol in every group due to focus group size and time constraints. Some questions changed slightly after the first and second focus groups based on reception and lack of clarity. The average length of a group was 48 minutes. All groups were audio-recorded using either Zoom’s record feature or an audio recorder. Zoom’s auto-generated captioning was used as a starting point for transcripts and then reviewed and edited by the researcher. The

researcher created the audio transcript for the in-person group. Quotes have been edited to remove verbal pauses such as “like” or false starts.

The researcher created a preliminary coding scheme (Miles et al., 2013), focusing on surprising findings, significant quotes, and programmatic suggestions from the students to code the data (Miles et al., 2013). Analysis was iterative, with field notes taken after the focus groups and then concurrently as part of transcript review.

## Appendix B: Protocol

Thank you so much for taking the time to meet with me to talk about your experiences with and goals for the Office of Undergraduate Research. My name is Saralyn (she/hers) and I am the Education Program Manager in the office. First, some ground rules about focus groups: 1. The best focus groups are where we hear from everyone AND we all interact to learn from each other. I encourage you to respond if one of your colleagues says something that you’d like to follow up on! 2. Everything you share in this group will be de-identified before it’s shared with anyone outside of this group. That means your name won’t be tied to anything that you say. I really encourage you to be as honest as possible. 3. That also means keeping what you hear today private, to respect your colleagues’ sharing. Also, there are NO right or wrong answers here! We’re interested in your opinions.

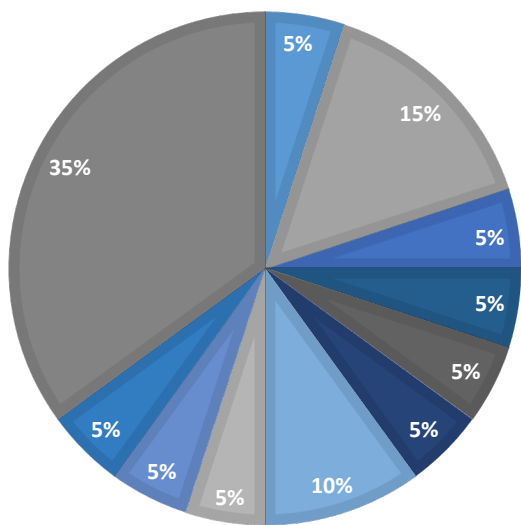
[For in-person only]: When you’re speaking, please say your name first before your response for the first few questions. That helps me know who’s who!

1. Let’s start with a warm-up. Please say your name, pronouns, major, research area, and then answer the question: Where do you feel most like a local?
2. Who were some of the people that helped you out the most in your research journey?
3. Other than people who were helpful, what resources were the most helpful for you in your research journey?
4. What is one resource or support that you didn’t get that would have been helpful?
5. Thinking about your friends, colleagues, and peers: what do you think would be helpful for them with their undergraduate research journey?
6. One of the things that the Office of Undergraduate Research (or OUR) is trying to decide is how to prioritize different aspects of undergraduate research. We want to balance financial support for independent research with support for students who are *just* starting their research journey. We call our independent research projects URGs and our getting started program the URAP. We’d like to hear from you!
  - a. Which do you think is the most important for OUR to support--URAP or URGs--and why? Again, no right or wrong answers here: we are genuinely interested in your input.
  - b. Which do you think should be the office’s highest priority to fund through grants: arts/humanities vs social science vs science? Tell me a bit about why.
7. We’re trying to set a balance of serving as many students as possible versus awarding qualified students as often as they qualify. The next set of questions ask for your opinions about how to prioritize breadth versus depth of funding.
  - a. Should OUR think about having a maximum amount of money for each student in grant funding, or would it be better to fund qualified students at every opportunity?

- b. How much of a consideration should student financial need (like, being on financial aid) play into grant awards?
  - c. *Follow-Up:* Thinking back to your own grant experience, is it more helpful to have funding over the school year or the summer?  
*For Summer SURG and/or Emerging Scholars Receipients*
  - d. *Follow-Up:* Would it have been useful to have housing provided, but with less money as a stipend?
  - e. Did you have to take on any additional roles to gain living expenses over the summer?
  - f. For financial aid reasons: would it have been advantageous to be able to take a class while doing your SURG? How do you think it would have impacted the project if you had done so?
8. What programming (workshops, online information, videos, trainings) would you like OUR to offer to make your research experience even better?
  9. As you know as a Northwestern student, there are many things that you can apply for and you only have limited time to do so. I'd like you to think about two hypothetical programs. One is called "Northwestern Stars." Northwestern Stars submissions are judged by a panel of Northwestern faculty who pick their top 200 applications to win a prize. The other is called "Northwestern Champions." For Northwestern Champions, Northwestern faculty evaluate all submissions and anyone who has a strong application is awarded a prize. Which of these would you be more likely to apply to, Northwestern Stars or Northwestern Champions and why?
    - a. They are evaluated with the same criteria. Does anything change if the grant amounts are different like if Northwestern Stars is \$4000 and Northwestern Champions is \$3500? What about Northwestern Stars constituting \$4000 and Northwestern Champions as \$3000?
    - b. *Handout provided*
  10. Given what you know now about undergraduate research, what advice would you give to someone just getting started at Northwestern about research
  11. What else do you think it's important for us to know about undergraduate research that we haven't asked yet?

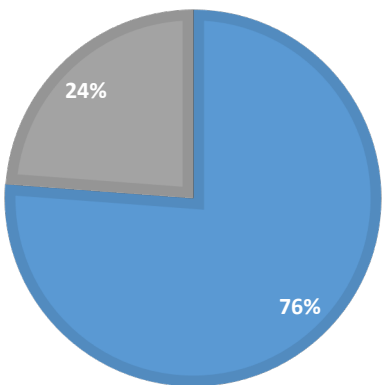
Appendix C: Demographics

RACE & ETHNICITY



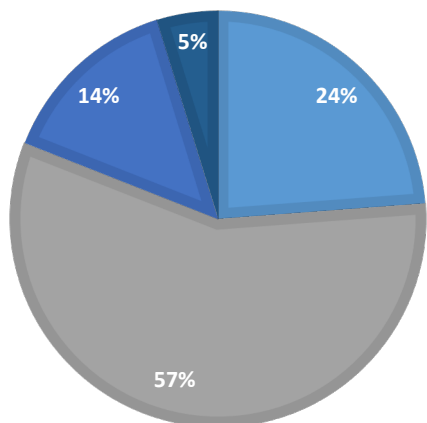
- African American
- Asian-Taiwanese
- Black/African American and White
- Chinese
- Indigenous and Hispanic/Latino
- White
- Asian
- Black/African
- Caucasian
- Hispanic, Latine/x
- Mixed (Asian & White)

FIRST-GENERATION IN COLLEGE?

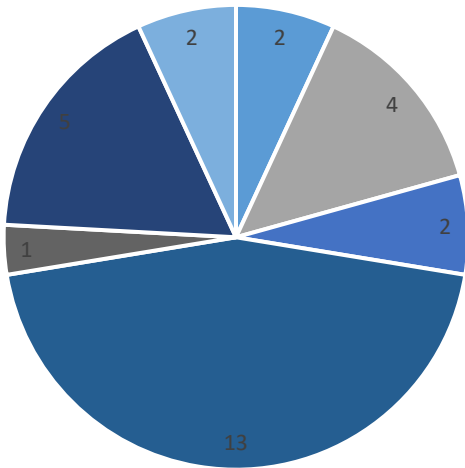


- No
- Yes

EXPECTED GRAD YEAR

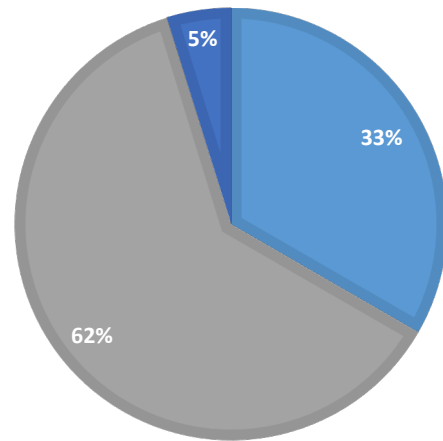


### Grant Receipt



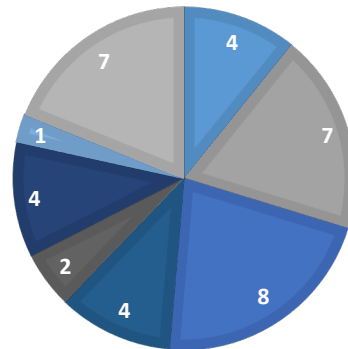
- Academic Year Undergraduate Research Grant
- Conference Travel Grant
- Emerging Scholars Program
- Summer Undergraduate Research Grant
- Undergraduate Language Grant
- Undergraduate Research Assistant Program
- None/blank

### TYPE OF RESEARCH



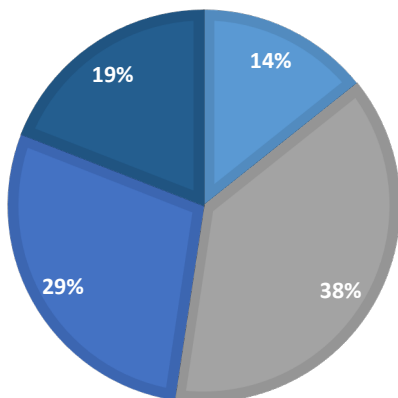
- Lab-Based
- Non-Lab Based
- Both

### OUR PROGRAMMING PARTICIPATION



- AHSS
- Finding a Faculty Mentor
- Finding a Lab Workshop
- Science Research Workshop
- Finding a Lab Support Group
- Undergraduate Research & Arts Expo
- Poster Presentation Workshop
- None/blank

### RESEARCH AREA



- Arts, Humanities, Performance, Creative Work
- Social Sciences & Journalism
- Natural Sciences, Engineering
- Did Not Respond

| <u>Abbreviation</u> | <u>Explanation</u>                             |
|---------------------|--|
| OUR                 | Office of Undergraduate Research               |
| SURG                | Summer Undergraduate Research Grant            |
| AYURG               | Academic Year Undergraduate Research Grant     |
| URAP                | Undergraduate Research Assistant Program       |
| AHP                 | Arts, Humanities, & Performance                |
| NSE                 | Natural Sciences & Engineering                 |
| SSJ                 | Social Sciences & Journalism                   |
| CTG                 | Conference Travel Grant                        |
| ULG                 | Undergraduate Language Grant                   |
| SRW                 | Science Research Workshop                      |
| AHSS                | Arts, Humanities, and Social Sciences Workshop |
| NCA                 | Northwestern career Advancement                |

*Table 1: Explanation of Abbreviations*

| <u>Majors Represented (total exceeds 21)</u> |   |
|--|---|
| Biological Sciences                          | 2 |
| Biomedical Engineering                       | 1 |
| Chemical Engineering                         | 1 |
| Classics                                     | 1 |
| Earth Sciences                               | 1 |
| Economics                                    | 2 |
| English-Creative Writing                     | 1 |
| Gender & Sexuality Studies                   | 1 |
| Global Health                                | 1 |
| Human Development in Context                 | 1 |
| Journalism                                   | 1 |
| Legal Studies                                | 1 |
| Mathematics                                  | 1 |
| Mathematical Methods in the Social Sciences  | 1 |
| Music Performance (combined for privacy)     | 4 |
| Neuroscience                                 | 2 |
| Philosophy                                   | 1 |
| Psychology                                   | 4 |
| RTVF   | 1 |
| Social Policy                                | 1 |
| Sociology                                    | 1 |
| Theater                                      | 1 |

*Table 2: Majors Represented*

| <u>Name</u> | <u>Focus Group</u> | <u>Research Area</u> | <u>Grant Programs</u> | <u>Expected Graduation Year</u> |
|-------------|--------------------|----------------------|-----------------------|---------------------------------|
| Thomas      | 1                  | SSJ                  | SURG                  | 2025                            |
| Esme        | 1                  | NSE                  | None yet              | 2024                            |
| Marietta    | 2                  | SSJ                  | None yet              | 2024                            |
| Janet       | 3                  | NSE                  | SURG                  | 2026                            |
| Korinna     | 4                  | AHP                  | URAP & non-OUR grant  | 2025                            |
| Manuel      | 4                  | SSJ                  | SURG, CTG             | 2025                            |
| Rory        | 5                  | SSJ                  | SURG, CTG             | 2025                            |
| David       | 5                  | SSJ                  | ULG                   |                                 |
| Iris        | 5                  | AHP                  | URAP, SURG            | 2026                            |
| Matilda     | 5                  | SSJ                  | URAP                  | 2025                            |
| Heng        | 6                  | NSE                  | SURG                  | 2025                            |
| Clementine  | 6                  | SSJ                  | SURG                  | 2025                            |
| Dani        | 6                  | NSE                  | AYURG, SURG           | 2024                            |
| Kathleen    | 6                  | SSJ                  | URAP                  | 2025                            |
| Curtis      | 6                  | NSE                  | SURG                  | 2025                            |
| Tania       | 6                  | AHP                  | SURG                  | 2025                            |
| Marisa      | 6                  | SSJ                  | URAP                  | 2025                            |
| Francine    | 7                  | SSJ                  | SURG, CTG             | 2026                            |
| Anastasia   | 7                  | AHP                  | Emerging Scholars     | 2027                            |
| Lara        | 8                  | NSE                  | AYURG, SURG           | 2025                            |
| Shay        | 8                  | NSE                  | SURG, CRG             | 2024                            |

*Table 3: Participants' Research, Grant Area, Expected Graduation Year, and Focus Group Participation*

| <u>Demographic Information</u>                |
|---|
| I'm turning 20                                |
| LGBTQ+, Woman                                 |
| FIGLI Student                                 |
| Low income                                    |
| Jewish, queer                                 |
| Jewish  |
| Queer, non-binary                             |
| I identify as non-binary, queer, and disabled |

*Table 4: Self-Reported Additional Demographic Information*

## References

- Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. American Association of Colleges and Universities. <https://tinyurl.com/2p9dezaz>
- Miles, M. B., Huberman, A. M. & Saldaña, J. (2013). *Qualitative data analysis: A methods sourcebook* (3<sup>rd</sup> ed.). SAGE.
- Russell, L., & Jarvis, C. (2019). Student withdrawal, retention and their sense of belonging; Their experience in their words. *Research in Educational Administration & Leadership*, 4(3), 494–525. DOI: 10.30828/real/2019.3.3
- Strayhorn, T. L. (2019). *College students' sense of belonging: A key to educational success for all* (2<sup>nd</sup> ed.). Routledge, Taylor & Francis Group.