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A Letter from our Director

I am grateful and proud to present this year in review for the Office of Undergraduate Research at Washington University in St. Louis. It is hard to believe that we are in our 11th year of fulfilling our mission on campus—helping students find the intellectual spark that sets them on a research path, connecting them with faculty mentors, and providing funding to support all aspects of the research endeavor.

Access to top rate research opportunities enables us to attract the brightest students with the potential to be our leaders of tomorrow. Undergraduate research experiences bring a student’s academic curriculum alive in real-world settings and teach critical skills that are applicable in solving the many global challenges our students will face. Our current students attest to the continued impact of undergraduate research opportunities in many ways:

“I have wanted to work on translational immunotherapy research since I joined the lab my Freshman Spring, and with my cumulative experience, I finally had a chance to work on the subject.”

“When I presented my summary of the literature and discussed my ideas for possible experiments with my professor, I felt that I had truly gained the confidence and skill to propose my own reasonable ideas.”

“The best moment of my summer research experience was when I hit a wall in my research and had to find a way to solve the problems.”

These quotes only scratch the surface of the observed impact engaging in undergraduate research has on our students. I hope that you enjoy reading about the many gains we have made in the last year as we continue to improve and expand our capacity to realize our mission.

Joy Zalis Kiefer, PhD
Director of Undergraduate Research
Associate Dean in the College of Arts & Sciences

OUR History

Founded in 2005 by a forward-thinking donor, the Office of Undergraduate Research (OUR) serves as a valuable resource as students begin to explore the concept of undergraduate research, and then provides funding to conduct research. We also help student researchers share their work through conference travel, symposia, and publications.

Serving all undergraduates in all disciplines in all schools.

OUR Mission

Washington University’s mission is to discover and disseminate knowledge, and protect the freedom of inquiry through research, teaching, and learning.

The Office of Undergraduate Research supports the larger mission of Washington University in St. Louis to advance and protect the process of inquiry by facilitating and promoting faculty-mentored undergraduate research experiences in all schools and all disciplines.
Why Undergraduate Research?

“I gained so much experience from research and I feel so much more involved in my field. I feel like I’m at a better place to find further employment in my field in the future.”

We help students discern their own research paths:

- We offer guidance for students in choosing an area of research interest and finding a mentor.
- We provide opportunities for students to meet potential mentors and to talk with current student researchers.
- We connect students to current research opportunities at WashU and other universities, as well as other funding sources.
- We offer a robust resource for students seeking research opportunities through the OUR website, including detailed information about the benefits of research, how to get started as well as opportunities at WashU and other institutions.

We provide resources for students undertaking research projects:

- We provide financial support for undergraduate research pursued on campus or anywhere in the world in the form of competitively awarded Summer Undergraduate Research Awards (SURA) for WashU students performing research under the guidance of a faculty mentor.
- We provide funding in the form of Conference Travel Awards for students to present their research findings at conferences in their discipline, helping provide presentation and networking experience.
- We developed a committee dedicated to teaching ethics in research, which provides training and ongoing support to both students and mentors.
- Our annual Mentor Connections program allows students to explore research topics, practice networking and meet faculty mentors.
- We facilitate workshops on creating posters, writing abstracts and research ethics.
- We offer guidance and poster printing services to students presenting research.

At a glance ...

- 23 number of students awarded funds to travel to present their research at conferences in 2016
- 28 the number of disciplines represented among 2016 SURA recipients
- 67 the number of SURA recipients in 2016, a more than 300% increase since 2008
- 36,000 number of visitors to the OUR website during AY2015-16, a more than 10% increase over the previous year
- 40 percent of SURA recipients who said they could not have conducted summer research without OUR funding
In 2016, 147 student research abstracts from nearly 30 disciplines were published in the annual Washington University Senior Honors Thesis Abstracts (WUSHTA) publication.

In 2016, OUR directly funded or facilitated funding for 148 undergraduate students from nearly 30 disciplines.

Why Undergraduate Research?

“I learned that you can do research in almost any field for almost any career goal as long as you learn the principles of experimental inquiry.”

At a glance ...

375 number of participants in the two Undergraduate Research Symposia in AY2015-16

We share and disseminate new knowledge gained through research:

We sponsor the Undergraduate Research Symposium in the fall and spring as a venue for students to present their research to the greater WashU community. OUR symposia provide opportunities for students to share their research, to engage in peer networking and cross-disciplinary conversations, and to develop presentation skills.

We offer guidance for students in preparing research for presentation, either as a poster or as an oral presentation.

We publish articles and abstracts written by undergraduates in the Washington University Undergraduate Research Digest (WUURD).

We publish senior honors theses within the Washington University Senior Honors Thesis Abstracts (WUSHTA).

We pursue partnerships and seek collaborations with departments through the university to promote excellence, enrich the research experience and publicize the many resources available to students on campus:

We actively work to broaden undergraduate participation with faculty in research areas across all disciplines by working with all campus departments, acting as an overarching resource and effective campus partner.

We facilitate information sessions and open houses for prospective students, current students, and parents to learn more about research.

We host conferences and talks about research for students and mentors.

We provide funding as well as facilitate funding for research opportunities.
Deanna Barch, PhD
Chair, Department of Psychological & Brain Sciences
Gregory B. Couch Professor of Psychiatry
Departments of Psychological & Brain Sciences, Psychiatry, and Radiology

“It is important for student researchers to understand how the scientific process works, and to understand the importance of patience, attention to detail and understanding how to translate between theory and concrete implementation.”

What inspires you the most about the research you are currently working on?
I frequently see the devastation that living with mental health challenges can bring, and ideally we would have a way of preventing children and adults from having to experience this by identifying early risk factors and avenues for intervention.

What type of advice do you typically give student researchers when they begin working with you?
My advice is to read broadly, ask a lot of questions and do not be afraid to “dive in.”

How do you benefit from working with undergraduate students?
They constantly push me to think in new and creative ways about the questions of interest.

Can you give an example of an impactful experience you had with one of the undergraduate students you’ve mentored?
I have had many students who have raised questions I never thought to think about, which I think have led to new and interesting research projects. For example, I had a student this past year get interested in the role of insight in psychosis and prompted us to ask questions about how cognitive function and depression are related to insight and how this might impact willingness to engage in treatment.
Peter Delaney
Sophomore
Global Health and the Environment Major
Healthcare Management Minor

“I looked for ways I could apply my practical knowledge and skills as an Emergency Medical Technician to my major and research and work I would be doing in Public Health for my project.”

What type of funding did you receive from the Office of Undergraduate Research to pursue your research experiences?
To support my research, I received a Summer Undergraduate Research Award from the Office of Undergraduate Research.

What type of research did you embark on with your OUR funding?
I spent two months in Iganga, in eastern Uganda, researching road trauma and safety. I initially collected almost 60,000 data points on traumatic injury experienced in the Iganga District, covering a 26-month period, from the Iganga District Health Office. This initial research was particularly illuminating, exposing boda-boda (motorcycle taxis) as being involved in more than half of the injury-causing road traffic accidents (52.05%) in the district. I proceeded to focus on, research, and work with boda-bodas primarily for my time abroad.

After researching the industry and the drivers more closely, I proposed a boda-boda policy change to combat over-speeding and reckless driving. The policy proposal is now passing through both the Municipal and District Government councils and awaiting final approval before it is piloted in Iganga Municipality. The research also informed the launching of the Iganga Boda-Boda First Aider Program.

How do you feel your research experiences will help prepare you for life after graduation?
I am currently involved with a multidisciplinary team associated with Global Partners in Anesthesia and Surgery (GPAS) creating an Advanced First Aid Responder Curriculum geared toward developing countries, which is endorsed by the Ugandan Ministry of Health. I hope to pursue an MD/MPH for my post-graduate education. I have valued my research experiences abroad in Uganda and will always want to maintain some connection to work being done abroad, but I am also very excited to get more involved in healthcare policy-making and work domestically.
Accomplishments.

The Office of Undergraduate Research has accomplished much over the last year, including the following:

- Through OUR funding and facilitating of opportunities for undergraduates, students continue to gain new knowledge and thrive through their research experiences, increasing their abilities to acquire necessary skills to meet the needs of research projects, plan and execute tasks independently, adapt research plans or objectives to new information or constraints, and more.

- The OUR developed a committee for undergraduate research ethics training.

- The OUR has strategically partnered with Admissions and Student Affairs as an active member of their Assessment Committee, to evaluate, seek feedback, and make necessary changes and enhancements to research programs and opportunities.

Making an impact.

The benefits of undergraduate research for students are well documented. In 2008, a report from the Association of American Colleges and Universities (AACU) identified undergraduate research as a “high-impact practice” that fosters deep learning, emphasizing both acquiring information and understanding its underlying meaning.

An undergraduate research experience gives students a competitive advantage when applying for graduate and professional schools. It also opens the door to publishing, conference experience, and travel opportunities.

OUR funding has proven critical for many students. A 2016 anonymous survey of undergraduate researchers found that more than 40% of students conducting summer research would not have been able to without OUR funding, while another 13% could have pursued research only part-time while working.

Students engaged in faculty-mentored research experiences are making a significant impact on their fields of study before they even graduate, contributing to the knowledge base of their disciplines, and in many cases, using this knowledge for the betterment of society at large. According to the Senior Survey, the percentage of undergraduate students participating in faculty-mentored research at WashU has increased steadily since 2002. In the last four years, research participation of Arts & Sciences undergraduates has grown by nearly 10%.

In addition, there have also been increases in the number of students presenting posters at our bi-annual research symposia, students submitting abstracts to WUSHTA, and visitors to our website seeking information about research opportunities.

Washington University undergraduate researchers are making an impact across the globe. In the last year alone, SURA recipients traveled to nearly 10 countries, from Germany to Uganda and China to Bolivia.
Looking Ahead
Assessing what we do

“I didn’t know how easy it was to get involved in research; I assumed it was a rigorous, hierarchical process where an undergraduate would have to gradually work his/her way up in order to gain enough credibility and trust, but undergraduates can actually get in touch with professors easily.”

OUR has kept pace with students’ burgeoning interests by constantly assessing student needs, seeking feedback from students and mentors, and adjusting and adding programs to keep up with the changing landscape of undergraduate research.

As we focus on the year ahead, we will continue to strive to:

• find new and innovative ways for students to gain knowledge through their research experiences.
• plan and execute opportunities for students to promote their research through our many programs.
• seek new sources of support for research awards and stipends to meet the increased demand for undergraduate research experiences.
• partner with Alumni & Development to seek new sources of funding.
• keep ourselves informed of changes to the research needs of our students.
• act as an effective campus partner and leader to promote research opportunities to all undergraduates, in all disciplines, in all schools.

“Undergraduate research is one of the most powerful learning strategies for undergraduate students. Undergraduate research is also a significant contributor to American innovation and economic development. The skills students can develop through engagement in research will serve them well in their future careers.”

Council on Undergraduate Research