



# JOURNAL OF UNDERGRADUATE RESEARCH

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We are excited to announce the 2022 issue of the UF Journal of Undergraduate Research. It is both humbling and inspiring to produce this diverse collection of works from emerging student researchers. As a new addition to the Center for Undergraduate Research, I am in awe of the students' motivation to contribute to their respective disciplines and the faculty dedicated to their success.

We recognize and celebrate the faculty who have supported the students whose articles you will encounter in this volume. These faculty embody our collegiate values of stewardship, discovery, and innovation. As mentors, they move mountains for students developing expansive skillsets necessary for

their future as academic researchers, professionals in a given industry, or, more generally, discerning citizens of our global community.

The UF Journal of Undergraduate Research has been in circulation with regular publications for over 20 years. This long history of elevating the intellectual and creative works of our students is just one manifestation of the undergraduate research culture that is a hallmark of our institution. Our entire UF community is responsible for cultivating the quest for discovery that continues to fuel this publication, and it is electrifying to be involved with the dissemination of the tangible product of this inquisitive spirit.

We would like to acknowledge the people who made this volume possible. We thank our graduate student editorial board for providing discipline-specific feedback to undergraduate submitters. Through this authentic publication submission process, our students are met with thoughtful reviews that enhance their research dissemination experience. Thanks to Guest JUR Editor, Jennifer Moses, Associate Director of Communications at UF Health.

A special thanks to Michelle Leonard, who in 2018 moved JUR to the Florida Online Journals, a scholarly journals publishing program hosted by the FLVC Library Services. She enhanced the learning process for the undergraduates by recruiting and training graduate student subject matter experts as peer reviewers and assigning persistent identifiers to all articles. Michelle served as UF JUR editor from 2018-2021 and published 7 issues, and 203 articles.

Thank you,  
Jenna Molen, M.Ed.  
Assistant Director, UF Center for Undergraduate Research

*Every January, we offer training to prospective authors on how to submit an article to the UFJUR, including author guidelines and navigating the online system. The submission is open to all current UF undergraduate students, in any major, who work with a faculty mentor. The submission opens in mid-March and closes April 1 of each year. JUR is a double-blind peer reviewed, open access publication. Students retain copyright through Creative Commons licensing. Each article has a unique DOI.*