

Introduction

Patricia Ann Mabrouk, *Editor-in-Chief*

doi: 10.18833/spur/5/2/8

Welcome to the Winter 2021 *Scholarship & Practice of Undergraduate Research* (SPUR) issue. You will notice a few changes in this issue. Dr. James LaPlant, founding Editor-in-Chief, stepped down in June. We are exceptionally grateful to him for his leadership and vision for SPUR, and I am personally grateful for his constructive and motivating mentoring, wisdom, and good humor. Shortly after that, Elizabeth Foxwell, Managing Editor, left as well. Over the last few months, Executive Officer Lindsay Currie, external consultant Evelyn Jabri, and I have worked with Technica Editorial to re-envision the Journal's management. We have adopted a new, more traditional organizational structure (Associate Editors) for the Journal reflected on the new masthead for this issue. We have crafted new author submission guidelines, and we have also developed a formal set of reviewer guidelines that appear in this issue. We are excited about these and other changes that are still in the works, and we hope you will be pleased, too. If you have suggestions or comments, please write me at p.mabrouk@northeastern.edu. We are here for you. If you are interested in submitting a manuscript, serving as a reviewer, or if you have ideas for issue themes, please contact me.

In this issue, we continue the practice initiated by former Editor-in-Chief James LaPlant (see the Winter 2020 issue – volume 4, number 2 for information on last year's best article and honorable mention recipients) of recognizing the best paper and honorable mention published in SPUR this past year. We hope that these works inspire you and empower you to consider sharing your novel approaches to the practice and assessment of mentored undergraduate research, scholarship, and creativity activity by publishing in the Journal. We hope that prospective authors will find these articles useful as models in crafting strong submissions.

Though this is formally a non-themed issue, reading, writing, equity, and access are common threads that run through the contributions you will find herein. The first offering by Anne U. Gold (University of Colorado Boulder), Rachel Atkins (North Carolina State University), and Karen S. McNeal (Auburn University) presents a case study of a geoscience research experiences for undergraduates program that used eye-tracking to objectively evaluate the strategies that students use to read scientific papers and graphs. The authors conducted think-alouds and collected eye-tracking data with students before and after

their participation in a geoscience undergraduate research program, providing 10 hours of training on reading and interpreting research papers and graphical information. The student data was benchmarked against a convenience sample of geoscientists. The team demonstrated the value of eye-tracking in objectively documenting changes in students' reading strategies due to their participation in undergraduate research and as a means of probing the cognitive strategies that student readers use. Their work demonstrates this technology's potential in documenting skill growth in student researchers.

In their contribution, Lisa Bosman (Purdue University) and Kelli Chelberg (College of Menominee Nation) leverage the deep abiding respect that Native Americans have for storytelling as a means of actively engaging student engineers in a pre-engineering program at a tribal college in the US Midwest in the development of a culturally responsive children's book about engineers and engineering. This activity requires the students to develop their communications and research skills while deepening their understanding of the different subdisciplines of engineering and engineering applications required for their success when they transition to four-year engineering degree programs. This approach can be adapted by faculty in other disciplines and institutions.

Elizabeth Wimberly-Young, Vanessa C. Morales, and Kathleen F. Weaver (Loyola Marymount University) report on the student outcomes for a faculty-mentored summer undergraduate research program at their institution, which transitioned from in-person to remote during the pandemic. The authors provide evidence from analysis of pre- and post-program written reflections, evaluated using the AAC&U value rubrics, and surveys that thoughtfully designed and supported online research programs valuing relationships and community can provide undergraduates with valuable knowledge and skills such as curiosity and initiative and the ability to apply these abilities in new situations.

Alexandria Lockett (Spelman College), Rebecca Day Babcock (University of Texas Permian Basin), and D. Alexis Hart (Allegheny College) present three case studies illustrating several unique ways in which faculty in the relatively new field of writing studies have engaged historically marginalized and underserved students in authentic mentored research experiences early in their undergraduate education. Their contribution closes with a set of practical recommendations regarding how writing studies faculty can engage students from all demographics and

communities in undergraduate research inside and outside the classroom working in-person and online and provide them with publication opportunities with far-reaching impact. I believe ideas and opportunities here will benefit all undergraduate research mentors and program directors.

We close this issue with a powerful call to action by a team from Bridgewater State University (Jenny Olin Shanahan, Jeanne Carey Ingle, Jing Tan, Thayaparan Paramanathan, and Kenneth W. Adams). Leveraging their work to re-envision undergraduate research on their campus in response to a series of recent local and national crises,

including the pandemic, an institutional budget shortfall, and institutional and societal cries for racial equity and justice, the authors share seven principles outlining policies and practices that undergraduate research program administrators and mentors can enact so all students can fully and equally benefit from the transformative power we all believe participation in undergraduate research affords. The authors argue persuasively and passionately, and we wholeheartedly agree, that re-envisioned for equity and justice, undergraduate research can serve as the fulcrum for widespread “antiracist, decolonial, and equity-minded change” in our world. Let it be so!

SPUR Best Article Honorees (Volume 4)

Congratulations to the honorees in the *Scholarship and Practice of Undergraduate Research* (SPUR) Best Article Awards (volume 4).

Best Article

“BUILDiNG Equity in STEM: A Collaborative Undergraduate Research Program to Increase Achievement of Underserved Community College Students”

Jared Ashcroft, Veronica Jaramillo, Jillian Blatti, Shu-Sha Angie Guan, Amber Bui, Veronica Villaseñor, Alina Adamian, Gabriela Chavira, Carrie Saetermoe, Eileen le, Bryant Horowitz, Brissa Palacios, Pamela Byrd Williams, Erika Brockman, and Jennifer Moses

SPUR, vol. 4, no. 3, Spring 2021 DOI: 10.18833/spur/4/3/11

Honorable Mention

“Academic and Professional Preparedness: Outcomes of Undergraduate Research in the Humanities, Arts, and Social Sciences”

Kelly Kistner, Erin M. Sparck, Amy Liu, Hannah Whang Sayson, Marc Levis-Fitzgerald, and Whitney Arnold

SPUR, vol. 4, no. 4, Summer 2021 DOI: 10.18833/spur/4/4/1

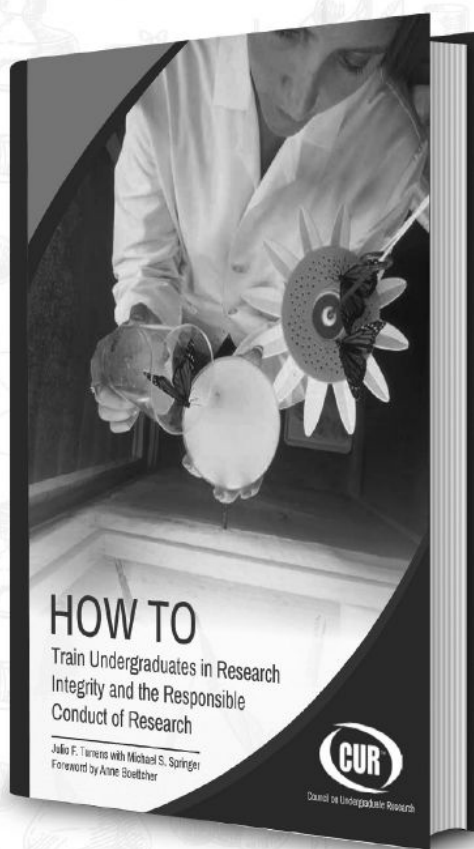
Criteria

In making its decision, the SPUR Best Article subcommittee of the SPUR Editorial Board considered excellence concerning the journal’s evaluation criteria, specifically

- Excellence concerning the journal’s evaluation criteria, specifically, “manuscripts that describe novel programs that can serve as models for other institutions, those containing a significant assessment of outcomes, and those articulating research on the efficacy of undergraduate research programs;”
- Timeliness (addressing current issues in undergraduate research, scholarship, and creative activity) and/or timelessness (articles likely to prove valuable over time);
- Broad appeal in terms of generalizability to disciplines and types of institutions; and
- Pedagogical value.

Andrea Tartaro, Chair

Committee members: Aaron Sakulich, Hasitha Mahabaduge, Kristin Picardo, and Kymberly Harris



HOW TO Train Undergraduates in Research Integrity and the Responsible Conduct of Research

Julio F. Turrens with Michael S. Springer
Foreword by Anne Boettcher

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FOR THOSE INTERESTED IN UR ETHICS

The responsible conduct of research encompasses a set of rules and recommendations about designing, performing, and reporting research. This book features diverse case-study approaches from a variety of disciplines to engage undergraduate researchers in topics in research integrity and the responsible conduct of research.

MEET THE AUTHORS

Julio F. Turrens is professor emeritus of biomedical sciences at the University of South Alabama where he created the undergraduate research program in 1998. Turrens joined CUR in 2004 and served as a member of the Executive Board as well as a councilor in the Biology and At-Large divisions. He has also served as a consultant to the European Commission on issues of research misconduct.

Michael S. Springer is professor of history and founding director of the Office of High-Impact Practices at the University of Central Oklahoma. As director, he administers the institution's undergraduate research programs, including the Research, Creative, and Scholarly Activities Grant Program. Springer serves as a councilor for CUR's Undergraduate Research Programs Division.

Anne Boettcher is director of the Undergraduate Research Institute and Honors Program at Embry-Riddle Aeronautical University in Prescott, AZ, and a past president of CUR.



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CALL FOR PAPERS

Call for Proposals: Undergraduate Research, Scholarship, and Creative Activity Anywhere and Everywhere

Scholarship and Practice of Undergraduate Research (SPUR)

Proposal Deadline: May 2, 2022

Guest Editors: Jennifer Coleman and Shauna Reilly

For this theme issue of *Scholarship and Practice of Undergraduate Research (SPUR)*, 6-8 articles of 2,000–3,500 words each are sought that examine Undergraduate Research, Scholarship, and Creative Activity Anywhere and Everywhere. We are looking for articles that can be inclusive of all students, institutions, disciplines, spaces, and across modalities. 3-5 vignettes of 300 words also are invited that offer succinct, creative approaches to the theme. All successful submissions must include some form of assessment and should be written so that are of interest and value to the diverse readership of SPUR. Topics of interest include the following:

- How can undergraduate research be flexible to meet students wherever they are?
- Is it our responsibility to offer undergraduate research opportunities everywhere and anywhere as a matter of diversity, inclusion, equity, and accessibility?
- What does undergraduate research look like as ‘the new normal’ in a remote environment?
- How can undergraduate research be conducted abroad or away?

Submission Details. Submit a 300- to 500-word prospectus to <https://spur.msubmit.net> by **May 2, 2022**, describing the focus of the proposed article or vignette. Please indicate in the prospectus whether the proposed piece is an article or a vignette. Invited authors will be notified by **May 16, 2022**. All invited manuscripts undergo peer review, and vignettes undergo editorial desk review. Final articles and vignettes will be due **August 1, 2022 (for consideration in the 2023 Spring Issue)**.

Questions?

Jennifer Coleman, guest coeditor
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Call for Proposals: Undergraduate Research, Scholarship, and Creative Activity – Engaging Students for the Common Good

Scholarship and Practice of Undergraduate Research (SPUR)

Proposal Deadline: August 1, 2022

Guest Editors: Michelle Hayford and Rebecca Jones

For this theme issue of *Scholarship and Practice of Undergraduate Research (SPUR)*, 6-8 articles of 2,000–3,500 words each are sought that examine Undergraduate Research, Scholarship, and Creative Activity – Engaging Students for the Common Good. Institutions of higher learning are increasingly aligning mission-driven undergraduate research with collective action on economic, social, environmental, and public health issues. In a time of global uncertainty, undergraduate research that serves the common good is critical to engage citizens and problem solvers. 3-5 vignettes of 300 words also are invited that offer succinct, creative approaches to the theme. All successful submissions must include some form of assessment and should be written to be of interest and value to the diverse readership of SPUR. Topics of interest include the following:

- Examples of undergraduate research experiences in any field that have successfully served the common good, and can serve as models.
- Diverse interpretations and disciplinary or cultural contexts for the “common good” as well as investigations using discipline specific frameworks of the common good.
- Submissions that link the common good to community-engaged learning and demonstrate meaningful undergraduate research experiences that serve collaborators or community members off-campus.
- Projects that explore how tackling difficult, complicated societal issues enable students to develop invaluable life efficacy skills such as resiliency and self-confidence for vocational success in, through, and as a member of a community.

Submission Details. Submit a 300- to 500-word prospectus to <https://spur.msubmit.net> by **August 1, 2022**, describing the focus of the proposed article or vignette. Please indicate in the prospectus whether the proposed piece is an article or a vignette. Invited authors will be notified by **August 15, 2022**. All invited manuscripts undergo peer review, and vignettes undergo editorial desk review. Final articles and vignettes will be due **November 1, 2022 (for consideration in the 2023 Summer Issue)**.

Questions?

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Read sample SPUR articles at:
<https://www.cur.org/what/publications/journals/spur/issues/>



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