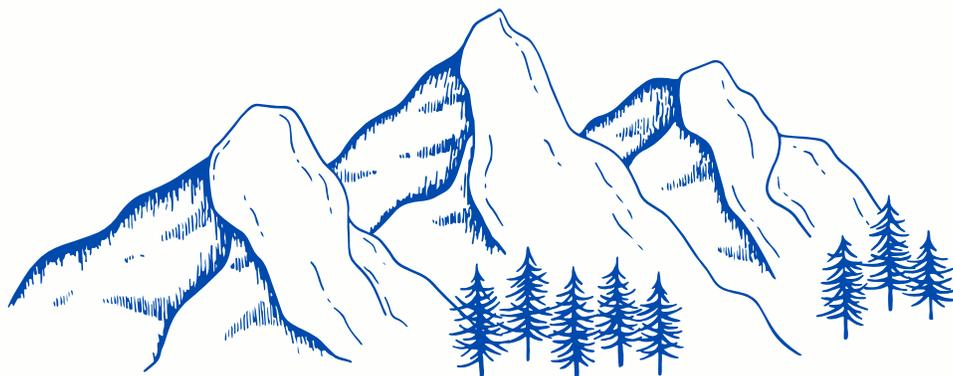


OPENING REGARDS

Congratulations to all of the undergraduate students for completing another excellent edition of Mountaineer Undergraduate Research Review (MURR)! You should be incredibly proud of yourselves and of your work. I am honored to bring you these greetings. The WVU Research Office is excited to support this work, as the ability to conduct world class, publishable research with an engaged faculty mentor is what sets a WVU undergraduate education apart. Publishing in MURR is competitive and fully peer reviewed – by both students as reviewers, as well as faculty member content experts. If one has a piece published in the journal – rest assured you are among the best of the best. I would also like to offer a heartfelt thank you to all of the students who make MURR possible – it is no small feat to undertake the entire publishing process for a journal (and doing it on top of full course loads and often conducting your own undergraduate research). Just being able to participate in undergraduate research opens doors for students and being able to publish that work takes it to the next level – the fact that so many students are willing to put the time and effort into MURR to benefit their fellow students is exactly what being a Mountaineer is about. On behalf of the WVU Research Office, thank you and congratulations again on another excellent Review!



Dr. Melanie Page
Associate Vice President for Creative and Scholarly Activities
WVU Research Office



OPENING REGARDS

Dear Mountaineers,

The ASPIRE Office is proud to support the 6th publication of the Mountaineer Undergraduate Research Review (MURR). We value our strong partnership with the Office of Undergraduate Research (OUR) and our shared commitment to enhancing out-of-classroom learning opportunities for our students. It is an honor for us to write this welcome letter.

Research is one important way for students to maximize their educational experience at West Virginia University. It allows them to deeply explore an interest and learn how to problem-solve. Research helps them strengthen their creativity, resourcefulness, and critical thinking. It gives them an opportunity to work closely with a mentor and a team to tackle a challenge. These are critical skills for students to gain during their time at West Virginia University.

On a personal note, both Cate and I credit our own undergraduate research experiences as fundamental to our academic paths. Cate traveled to Uganda in 2006 to study displaced persons in post-conflict Northern Uganda with the guidance of a mentor. That first experience sparked her life-long passion for international travel and studying development in post-conflict communities. Amy worked with a professor in the English department coding the body language of coal miners who were recorded talking about their jobs as a way of examining their understanding of risk.

In addition, we see the importance of undergraduate research in our day-to-day work with students who are applying for nationally competitive scholarships and fellowships. Each award we work with highly values research experience for students. A deep research experience often sets a student apart from their peers; it is a concrete way to demonstrate passion for a subject, commitment to a project, and flexibility to adapt when needed – all qualities that our best and brightest students possess.

We are thrilled to see students actively engaging with research topics in this volume of MURR. We know that these student researchers tend to be the leaders in their fields who will continue to make discoveries and advance our collective human knowledge. Finally, thank you to their faculty research mentors and advisors who generously take care and time to teach our students the art of discovery.

In closing, we encourage our student researchers to continue their quest for knowledge so that we can better tackle the many challenges facing our world. We are proud of the work you do and proud to be part of the team at West Virginia University supporting your research endeavors!



Amy Cyphert
Director, ASPIRE Office



Cate Johnson
Assistant Director, ASPIRE Office