From the Administration

The Undergraduate Research Journal at the University of California, Riverside gives recognition to the collaborative research efforts of students and faculty, showcasing their creative endeavors and accomplishments. Here, we proudly publish the diverse array of ideas and innovations emanating from our talented and intellectually curious undergraduates. This publication illustrates how academic culture at UCR nurtures skills such as effective communication, collaboration with peers and mentors, and the academic pursuit of new knowledge and understanding.

Never before has human innovation and the transmission of knowledge been rewarded so handsomely and relied upon so heavily by an increasingly interconnected world. We recognize the value of hands-on learning and academic discovery in the education of our students as we prepare them for successful careers and advanced degrees. Fostering undergraduate research is a vital component of the academic enterprise, and I am exceedingly proud of the work published here.

Sincerely,

Timothy P. White
Chancellor

You hold in your hands the third annual UC Riverside Undergraduate Research Journal. It provides a selective, peer-reviewed venue featuring the very best faculty-mentored undergraduate research and scholarship on our campus. The peer-review process has been very ably led by our Student Editorial Board, with advice as needed from the Faculty Advisory Board. So, much like the research published here, we have established a culture in which the editorial activities of the Journal are managed by students in a faculty-mentored process.

I want to congratulate the young scholars whose work appears herein. The process of discovery can be filled with excitement but also riddled with frustration, as we search and stumble in the dark, trying to shed new light that enriches our understanding of social or natural phenomena, nourishes our emotions, or enlivens our souls. During this process, we travel a path that no one has been on before. The journal article is the culmination of that process – a formal presentation to our community of peers and mentors of what we found on that journey. Place this volume on your bookshelf. Pull it down occasionally from the shelf to re-read and to remind yourself of the journey you traveled. I wish you many more such journeys in the future.

With Best Regards,

David Fairris
Vice Provost for Undergraduate Education
Professor of Economics