Research is taking place in every college and school across our campus. Scientists and researchers think boldly and collaborate freely, partnering with university, community, corporate, and government experts to address the challenges affecting our world—food insecurity, cancer, climate change, and many others. For more than 150 years, Purdue has been responsible for billions of dollars in research and economic impact, and the immeasurable reward of improving lives.

Within this ecosystem of innovation and discovery, we encourage undergraduates to conduct original research and gain the benefits of experiential learning. Student researchers work alongside faculty mentors who help them develop skills in critical thinking, problem solving, and intellectual independence. They learn to use primary sources and carefully analyze data they have collected or generated.

At Purdue, the point is not only the acquisition of knowledge and skills, but also their application. Students learn to be an entrepreneur, a researcher, an engineer, an inventor, a scholar from active and collaborative experiences in the real-world spaces of laboratories, clinics, prototyping, and design. Through this experiential learning, students reap some of the return on their educational investment before graduation day. Their confidence grows dramatically as they generate new knowledge and make an impact. For many, conducting undergraduate research begins a trajectory toward graduate school and a research career.

In this 13th volume of JPUR, you will find research as varied as our students. Isabelle Akoro analyzes the long-lasting impacts of herbicide on zebrafish, and Christopher Stepherson explores the viability of producing biodiesel from spent coffee grounds. In research snapshots, Evan Landau analyzes changes found in the language of Russian media during turbulent times, and Emma Niecikowski describes apps that generate neurofeedback visual cues to help create calm and focus. These are just a few of the fascinating topics our students worked hard to analyze and understand. I know you will enjoy learning about all of the research contained in this volume.

Whether undergraduates choose to pursue an advanced degree or a position in business, a nonprofit, or government, our students who work through the discovery process gain skills that will serve them well far into the future. In a special section of JPUR, Purdue alumni discuss how their experiences with undergraduate research have led to lasting benefits in their own careers.

Going forward, researchers will continue to find solutions to meet the challenges that affect our world. New and expanding areas—artificial intelligence, high-speed flight, semiconductor design, cybersecurity, and many others—will open up new opportunities and challenges. There will be opportunities to enhance human health and well-being at every stage of life. And you can be certain that as we seek new knowledge and new ways to improve lives, the remarkable students we are teaching today will be leading the way.