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THE VALUE OF UNDERGRADUATE RESEARCH

By MARK RUDIN

One of the strengths of Boise State University – and a source of pride for the entire campus community – is the prominent role that undergraduate students play in research conducted at the university.

At Boise State, undergraduates have opportunities to participate in research that are more traditionally enjoyed by graduate students. Their work contributes to scientific knowledge, enhances classroom learning, benefits the community and state, and has the potential to improve the quality of life in the 21st century.

Our students also have tremendous opportunities to pursue creative activities that strengthen their education and enrich our culture. Creative activity in the arts and humanities is equivalent to research in the sciences; both are integral to the excellence of our university.

This premier issue of *Explore* magazine offers a glimpse into the range of projects Boise State undergraduates are pursuing. Our student section, beginning on Page 24, features seven undergraduates from across campus who are engaged in re-

search and scholarly endeavors. They are just a few of the many hundreds of Boise State undergraduates who gain hands-on experience in labs, studios, libraries, corporate and government offices, and field sites in Idaho and around the world.

In addition, most of the faculty highlighted in this issue include undergraduate students on their research teams. Given the importance of research to this institution, it's fitting that the first issue of our new research magazine acknowledges the impact of undergraduate research contributions.

Boise State undergraduates have presented research at major scientific conferences around the world and have published papers in top scientific journals. Their research posters are routinely displayed alongside those of graduate students at these conferences. Boise State faculty note that their undergraduate students sometimes are mistaken for graduate students or even post-doctoral fellows because of the high caliber and scope of their work.

Boise State graduates who have gone on to medical school, Ph.D. programs or jobs in the private or public sectors cite their

undergraduate research experience as a key factor in their success. Their background sets them apart from their peers, enhancing their competitiveness for top academic programs and jobs and providing them with skills and experience to succeed in their new pursuits.

Our institutional commitment to undergraduate research is reflected in programs such as the annual Undergraduate Research and Scholarship Conference, which brings hundreds of students from disciplines across campus together each year to present their research projects. This conference is the culmination of many months of work for these students, who not only conduct hands-on research, but also prepare written reports and poster presentations and then communicate their results to other students, a panel of judges and to the public. The process develops research skills and also reinforces the notion that for research to have an impact, it must be shared in a way that is both understandable and relevant.

Boise State's McNair Scholars program provides opportunities and support for students who are first-generation college students or from under-represented groups to work with faculty mentors on research projects in preparation for graduate studies. Additionally, Boise State receives funding from the National Science Foundation for a scholarship program encouraging research participation for engineering students in their first two years of college. These are among a number of programs on campus that support undergraduate research.

The benefits of these diverse research and scholarly programs are manifold. National research studies, corroborated by work conducted at Boise State, show that student retention rates are significantly higher for undergraduates who participate in research. This is not surprising: Research engages and empowers students, changing their perceptions of what they believe they can accomplish. This, in turn, builds confidence that fuels continued commitment and success.

Research also strengthens classroom learning by enabling students to apply challenging concepts and ideas. It encourages critical thinking and open-ended questioning, enabling students to develop new skills and to expand their perspectives in regard to future career choices. It also provides them with the opportunity to develop close working relationships with faculty, who benefit from the exchange as well. In the words of one professor, "Working with undergraduates in my lab challenges me to clarify my thinking at all levels. I am a better researcher, and a better teacher, as a result."

Undergraduate students also provide invaluable support to faculty by conducting lab experiments, compiling results and completing other research-related tasks. The opportunity to work one-on-one with bright, motivated students in a dynamic research setting is cited by many professors as the most rewarding part of their jobs.

We are fortunate to have such a wonderful group of dedicated students who support our research mission. As Boise State continues to advance as a metropolitan research university, undergraduate research will remain a critically important factor in our success. Research has a transformative effect on all of our students, the culture of the university, and even our community. Hence, our ongoing commitment to this endeavor will enhance our institution and will help us prepare our students to make a difference in an increasingly complex world. ◆



A Willingness to Explore Is Key to University's Success

I hope you have enjoyed reading the premier issue of *Explore*, and that you have found it both interesting and informative.

In this issue, we have featured just a few of the many outstanding research programs and creative endeavors that are flourishing at Boise State University. Together, these articles offer a "slice of the university." In subsequent issues of *Explore*, we look forward to sharing more stories about our talented faculty and the diverse projects they are pursuing across our campus.

The decision to launch a new research magazine at this point in Boise State's history is significant. It speaks to the importance of research to our future as an emerging metropolitan research university of distinction, and to the strength and dynamism of our growing programs.

We chose the name *Explore* for a number of reasons. First, it underscores Boise State's commitment to open-ended inquiry in both the sciences and the humanities. Exploration also is a key concept in the university's map-themed strategic plan, titled "Charting the Course," which identifies routes, or strategies, that Boise State should explore to reach its goals.

Finally, "explore" speaks to the process that is integral to all great discoveries – the ability to think beyond what is to what might be. Boise State is an institution that values vision as well as expertise. Both are important, and both will fuel our progress in the years ahead.

As our university charts its future course, it is our ability and willingness to explore that will determine our contributions and success. I invite you to join us on this journey.

– MARK RUDIN, VICE PRESIDENT FOR RESEARCH