

# Grad students vital to ISU's future

**Y**ou might be surprised to learn that there are only two doctoral universities in the State of Idaho: the University of Idaho and Idaho State University. Both are classified as "doctoral research institutions" by the Carnegie Foundation for the Advancement of Teaching, the organization that sets the standard nationally for evaluating and classifying institutions of higher education. In contrast, the Carnegie Foundation classifies Boise State University as a "master's university."

As a doctoral research university, ISU has a responsibility to the citizens of the state of Idaho to provide high-quality graduate instruction leading to doctorates and master's degrees in a range of academic and professional disciplines. The graduate faculty at ISU are training tomorrow's scientists, engineers, educators and health professionals.

In a true research university, graduate students are the institution's greatest resource.

For example, most professionals believe that graduate students are especially effective teachers because they are so immersed in studying the most current, state-of-the-art knowledge in their discipline. Then they pass this cutting-edge knowledge on to the undergraduate students they teach.

As apprentice professors, graduate students are under the direct supervision of their major professors, and so there is a high degree of quality control over graduate student teaching—more so than in most other university teaching situations. And graduate students have the added advantage of being close in age to their undergraduate pupils, and they thus can relate to them with facility.

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My point is that graduate students are central to a true research university. They are especially effective teachers given their currency in their discipline and the high degree of scrutiny they work under. And they have another crucial advantage: they are necessarily active researchers in their fields because

in order to earn a graduate degree, graduate students must demonstrate that they can enter and participate in the research traditions of their disciplines. This is a crucial skill that they then pass on to their own students.

An important way in which graduate students are central to a true research university is that they work side-by-side with their major professors in producing original research.

Professor Jeff Hill, for example, credits former doctoral student Deborah Alongi with helping to make a significant breakthrough in our understanding of ferns. While at ISU, Alongi, Hill and Professors Mike Thomas and Matt Germino found that ferns can consume sugars from the environment, a discovery that challenges accepted knowledge about plants and invites a range of new research on the topic.

In last week's column, I mentioned anthropology student Joseph Craig Argyle, who spent his spring working with Dr. Richard Hansen in Guatemala at a site that has been labeled "the cradle of Mayan civilization." While investigating water collection systems in an ancient city, he excavated a series of panels made of carved lime plaster that depict Mayan mythology, a find that is considered a major discovery.

Pat Gygli, a graduate student in biological sciences, is investigating how microbes survive high levels of radiation. The results of this research could prove useful in medical

and defense applications.

Another graduate student in biological sciences, Scott Collins, is conducting research that is especially relevant to those of us who live in the Northwest. The dramatic decline in the salmon population over the past several decades has meant that fewer nutrients are being released into our rivers and streams because there are fewer fish dying and being re-absorbed into the ecosystem. Collins is testing novel ways to re-introduce nutrients into these waterways.

A doctoral student in nuclear physics, Berkley Sparks, is studying the nature of subatomic particles, and he will have the unique opportunity to spend up to eight months in China studying nuclear physics at a world-class facility in Beijing.

A doctoral student in political science, Jason Blazevec, is fast becoming a nationally known expert on energy security in the Far East. After publishing three articles on this topic in prominent scholarly journals, he was invited to attend an exclusive conference in China on energy issues in Asia. He was one of only 20 non-Chinese experts invited to attend.

This is only a sampling of the impressive research and teaching of ISU's talented graduate students. As you can see, Idaho State University takes its status as a doctoral research university quite seriously. We are working hard to prepare tomorrow's leaders and innovators.

Our graduate students are making important research discoveries that are helping to shape knowledge in their fields, and, just as importantly, they are passing on their wealth of knowledge to our undergraduate students.

This is why graduate students are the life blood of a major research university, and it is why they represent the future of Idaho State.

*Gary A. Olson is provost and vice president at Idaho State University.*