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Popular Science Magazine recognizes USU

By Ben Abbott

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USU was featured last month in "Popular Science Magazine's" article "A Geek's Guide to Colleges." USU was featured because of its advancements in cloning. USU's ability to clone a mule is what first received the school recognition in cloning because other places had cloned sheep but not mules.

Popular Science Magazine featured USU last month in the article “A Geek’s Guide to Colleges.” USU ranked with Berkley, Cornell and Stanford as one of the top 10 schools for scientific research. Cloning a mule is what put the university on the map.

Ken White, the associate director for research at the Center for Integrated BioSystems, is responsible in part for this prestige. Since 1991 White has been leading the USU cloning efforts.

Cloning mules poses particular problems. Because mules can’t reproduce, viable eggs can’t be harvested from their ovaries. In 1996 the Roslin Institute in Scotland successfully cloned a sheep, Dolly, the “most famous sheep in the world.” In the years that followed cattle, mice and pigs were successfully cloned. No one, however could clone a horse let alone a mule.

Back at USU White and colleagues, funded by Don Jacklin, president of the American Mule Racing Association, continued working on the mule angle.

“Along with cloning our lab is internationally known for egg activation. For the last 15 years we’ve been at the forefront of how cattle eggs developed,” he said. When the embryos weren’t developing very well, we looked back at our egg activation experience and, lo and behold, it worked.”

The USU researchers discovered a difference in equestrian embryos.

“One of the huge breakthroughs in our research was that we found that horse cells, particularly horse eggs regulate calcium differently,” White said.

Calcium levels are around 38 times higher in the fluid surrounding horse eggs than in other species, he said. Once this piece of information was in place the stage was set for success, he said. By bathing the eggs with pulses of calcium, he said, the team succeeded in coaxing the eggs to divide.

May of 2002 was the breakthrough year, he said, and three mule embryos were successfully cloned and brought to term.

“Even with naturally conceived livestock you usually lose 50 percent in the first trimester and another 25 percent in the second. I kept thinking they’d call and tell me they had aborted,” he said.

Against the odds, all three were birthed normally, he said.

“It was one of the most successful feelings I’ve ever had. We’d done so much work, had so many struggles and setbacks,” he said.

With the three clones the program received instant international attention.

“There are two things I really love,” White said. “Up until recently I’ve been the one doing the cloning. I love sitting at the microscope and doing micro manipulations and I love the students, I’ve always loved working with kids and seeing the fire in their eyes when they get excited about something.”

As a first-generation college graduate, White said he understands the importance of giving opportunities for student involvement.

“It’s because it’s a cool field. The reason why I’m here is because I got excited about something,” he said.

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