

Composites improve animal cage strength

By KIM HANN, ALUMNEWS Writer

We can all recollect our childhood days of going to the zoo to look at the animals, particularly the cute, yet obso-funny monkeys. Maybe we can even remember the sounds made by the monkeys as they lunged across their metal cages, sometimes crashing into the thick gray bars.

Unfortunately, most zoos just don't have the funds to provide their animals with a better habitat than the metal cages. However, thanks to the engineering skills of UW's David Walrath (BS '74, MA '75), mechanical engineering professor, more suitable animal containments do exist for these monkeys, as well as their captive friends.

Walrath, a western Nebraska native, was approached by a Wyoming company known as Britz-Heidbrink, Incorporated, about four years ago. Britz-Heidbrink, located in Wheatland, asked Walrath to assist them with development of creating environmentally friendly animal housing for laboratories and institutions, such as the National Institute for Health.

After completing a detailed analysis, Walrath suggested that the company use composites, rather than the traditional stainless steel, to build animal housing. Gail Heidbrink and Bill Britz both agreed with Walrath and proceeded with the suggestion.

Walrath says that "beginning a project of this nature is always the hardest," but his previous experience with composites paid off. He decided upon a "sandwich construction" of foam core, fiberglass skins and epoxy matrix. In addition to these three materials, printed fabric was added on top to create an aesthetically pleasing environment for the captive animal.

To create this composite, a press was built - with the assistance of several UW graduate students - and molds were designed for the panels. Once this basic hardware was established, Britz-Heidbrink began mass producing the panels, which are also protected with frames so that the animals can't chew on the edges of them.

The project turned out to be quite successful, as Britz-Heidbrink sells the composite-built animal housing throughout the United States and Canada. Gail Heidbrink, president of the company, credits UW as a major factor in their success.

"UW provided us with both the development and training grounds for the composite panels, which are very important assets to our animal hous-



UW photo
David Walrath, UW alumnus and professor of mechanical engineering, explains the use of composites with animal cages.

ing design," she says.

Bill Britz, CEO and chairman of the board for the company, also commends Walrath and UW for the assistance with the development of the panels.

"Actually," he says, "when we were considering the locale of our company, Wyoming ranked high for several reasons, one being the University of Wyoming and its reputable College of Engineering."

Not only has UW assisted the company, but Britz and Heidbrink both agree that they are definitely beneficiaries of the Mid-America Manufacturing Technology Center, better known as MAMTC.

"Larry Stewart and Arnie Haas were both incredibly helpful in assisting us with putting together the press for the composite panels," Britz says. In addition to the composite panel press, Britz-Heidbrink is filled with a wide array of hardware used to build their Environ-Richment animal housing. Their most popular products include thermal-neutral composite flooring systems that can be used in a variety of housing situations. One example is a rabbit cage, which contains the thermal-neutral flooring system with a litter pan that can easily be changed by technicians. This type of rabbit cage not only makes the life of the rabbit a bit more pleasant, but also lessens the

workload of the animal's caretaker.

Britz and Heidbrink also build unique animal transport carts that have a floor consisting of a flat area, as well as a slatted area - rather than the traditional completely slatted floors. According to Heidbrink, "floors that are all slats often cause digital cysts in dogs and pigs, which can result in infection and discontinuance of the animal's use in research."

"With the use of 50 percent flat floor and 50 percent slatted floor, half of the cart stays fairly clean, which cuts down on cleanup time by the technicians," says Britz.

Other innovations developed by the company include an isolation chamber for infectious animals, a sippertube washer that automates sanitation, as well as several other clever animal housing components. Needless to say, Britz-Heidbrink is one of the leaders in animal housing for pharmaceutical companies, large research facilities, independent research companies and the list of clients continues.

It is truly exciting to see inventions such as these happening in our state. Perhaps it is even more exciting for alumni to realize that the University of Wyoming played such an important role in the development and training of the company behind these innovations.