



Engineering alumni bring the big city to Bobcat Stadium

BY TRACY ELLIG

Left to right, Brett Swimley, Jon Koon, Jason Kay, Bryan Robertus and Jason Daughenbaugh

When fans pour into the newly expanded Bobcat Stadium this fall, they'll be treated to two new scoreboards, a giant video screen and sound system that come from the inspiration and hard work of a group of Montana State University alumni at Advanced Electronic Designs in Bozeman.

As part of a 5,200-seat expansion of the stadium's south end zone, a new scoreboard and video screen will be installed on the north end of the field and stand more than 70 feet tall atop two support columns. The \$10 million stadium expansion is being funded with private donations and future athletic revenues.

Large, computer-driven, high-resolution LED signs designed by AED's are found in some of the world's largest cities. Several marquee signs in New York's Times Square, including the 130-foot-long, ribboned ABC SuperSign, are the work of AED.

"There will be no comparison with the old video board for Bobcat fans. The crowd will be seeing DVD-quality images," said **Bryan Robertus**, '89 EE, president of AED.

"Likewise, the sound system will be a vast improvement," said Robertus.

AED is designing a 36-foot-wide and 43-foot-tall high scoreboard that will provide a dramatic entryway for the Bobcat football team at the beginning of games. The scoreboard was assembled by another firm, D3, in

California and was scheduled to be shipped in pieces to Bozeman this summer.

Robertus founded AED in 1994 as a one-man-shop in his basement. Despite an early promise he made to himself to never have any employees, he now has 12. Of those, 10 are engineers who either graduated or attended MSU.

His firm's focus is on embedded system development, basically any device that has a small computer in it. As such, AED works on a wide range of unusual projects from giant, LED signs, to film-editing consoles, to high-precision industrial cameras.

Guiding the firm is Robertus' philosophy: "I want us to pursue projects where we can really express our creativity, pursue our passion for engineering and where we can have fun. If anyone comes to work hating their job, then we're doing something terribly wrong."

It's a philosophy that has paid off. Since 2008, the firm has grown in size from seven employees to 13, including Robertus, despite the recession.

One of the firm's recent projects is making life better for people with epilepsy. An important prerequisite to treating epilepsy is recording brain function during a seizure. Typically this is done by hooking patients to sensors and then waiting—sometimes for days—for a seizure to occur. The method is cumbersome and restrictive as

it tethers patients to a computer and keeps them from working or even going home.

AED worked with a firm to create a portable system that records seizure information. The system can be placed in a vest that a patient can wear to home or work.

As for the new Bobcat Stadium scoreboard, Robertus and his staff are donating their time on the project.

"We feel a great deal of pride about this," Robertus said. "This will be one of our products right in our backyard that our friends and neighbors can see. And it's been exciting to customize this scoreboard so that it meets the needs and desires of MSU."

In addition to superb quality on the video screen, AED designed the sign for exceptional reliability.

The scoreboard is equipped with a redundant fiber optic control system plus advanced real time status monitoring, and is built so its high-tech innards can be accessed via ladder as opposed to the bucket trucks needed for most older scoreboards. Additionally, AED will have staff on hand at each home game to provide technical support and ensure smooth operation.

"With 12 out of 13 of us either having graduated or studied at MSU, we really wanted to do something nice for our alma mater," Robertus said. "We know this scoreboard will record many, many victories for the Bobcats in the years to come." 🐾