In addition to benefiting from the technology and data-gathering system in place at the Animal Kingdom, Johnson has been able to work with the world’s largest captive animal herd. “Elephants are very social creatures and because the Animal Kingdom has 12 elephants, the environment is much more realistic than in most zoos,” he says.

The project brings together experts from many disciplines, including animal behavior specialists, bioacoustics specialists, engineers and biologists. Johnson is involved with analyzing vocalization data to determine the ovulation cycles of the female elephants, which will be used to develop breeding techniques for endangered species. Advanced “voice print” technology will be designed to help keep track of wild animal herds as a means to possibly improve habitat management.

The project provides researchers with clues on understanding social structure and behavior – information that can be used to enhance the treatment of wild and captive animals.

While Johnson’s research is attracting national attention (he was recently awarded a National Science Foundation grant for $1.2 million over four years), he knows the strength of the speech and signal processing program also depends on the experiences it offers students. And he has earned a reputation for exposing his students to substantial research opportunities.

Patrick Clemins, Eng ’98 and Grad ’00, a doctoral candidate working on Johnson’s research team says: “It’s important as a student to get that hands-on experience, and Mike does that well. He treats his students as his equals — like we are all in this together — and that gives me a great sense of responsibility for what we are doing.”