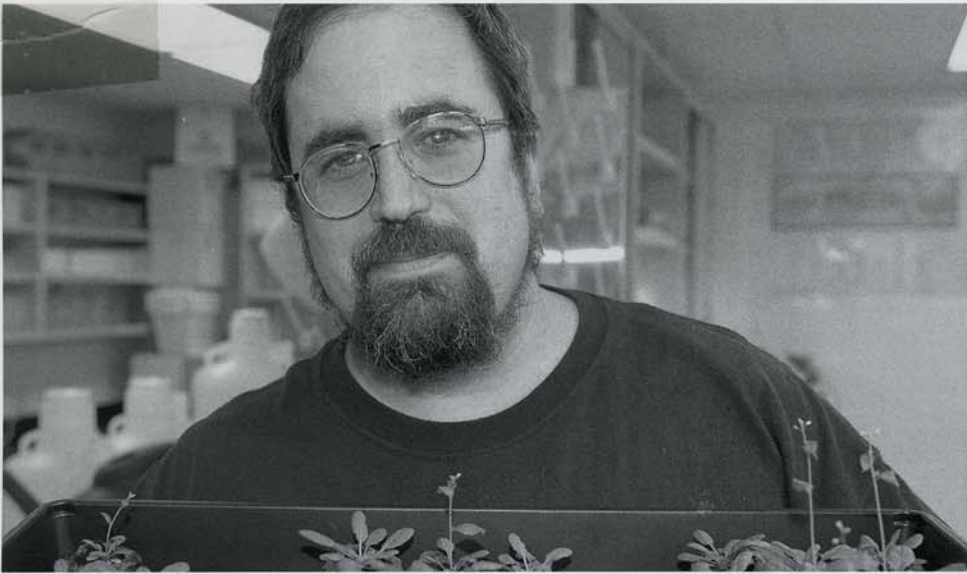


# Scientists receive \$3.85 million to study plant genes

Research expected to have impact  
on arid agriculture worldwide



**A** key to future sustainability in agriculture could emerge from the molecular level. According to researchers in the college, knowing the function of 28,000 genes in the plant *Arabidopsis thaliana*, a member of mustard family, could have a dramatic impact on the world's agricultural productivity.

More than 20 percent of the genes in *Arabidopsis*, or mouse-eared cress, are unknown, according to Ron Mittler, assistant professor of biochemistry.

"*Arabidopsis* is genetically similar to many crop plants," Mittler says. "Our focus is the genes that are thought to have a role in the plant's protection against environmental—or abiotic—stress, such as heat, cold, drought and salinity."

Knowing the function of these genes could have a major impact on agricultural productivity worldwide, particularly in arid regions. The majority of the world's crop yield losses are

due to environmental stresses, with drought stress being the leading cause, according to Mittler.

Improving crop yields in the arid western states, such as Nevada, or in developing countries, could be a result of the research, Mittler says, by developing plants that can better tolerate environmental stress.

"Even a 5-percent improvement in agricultural production worldwide would have a huge economic, social and nutritional impact," he says.

Researchers John Cushman and Jeff Harper, along with Martin Gollery, associate director of the University of Nevada's Bioinformatics Center, will be working on the project.

The team received a \$3.85 million grant from the National Science Foundation for the project.

The award will be split with scientists at the University of California, Riverside, who will be collaborating on the project. ■



▲ **ARABIDOPSIS THALIA** is a member of the mustard family. Knowing the function of 28,000 genes in the plant could have a major impact on the world's agricultural productivity.

◀ **RON MITTLER**, assistant professor of biochemistry, is leading the plant genetics research that could improve crop yields in arid western states, such as Nevada, and in developing countries.

**"Even a 5-percent improvement in agricultural production worldwide would have a huge economic, social and nutritional impact."**

■ By **BOB CONRAD**

## BRIEFLY TODAY

### UNR receives grant to study plant genes

STAFF REPORT

A grant for \$3.8 million has been awarded to the University of Nevada, Reno to study the functions of genes in a plant related to the mustard family, which researchers say could have a dramatic impact on global crop production.

The plant, *Arabidopsis thaliana* — commonly known as mouse-eared cress — is genetically similar to many crop plants, said Ron Mittler, assistant professor of biochemistry in the College of Agriculture, Biotechnology and Natural Resources.

“Our focus is the genes that are thought to have a role in the plant’s protection against environmental, or abiotic, stress, such as heat, cold, drought and salinity,” he said.

The function of more than 20 percent of the genes in mouse-eared cress is unknown, and learning the role of those genes could have major impact on agricultural productivity worldwide, Mittler said.

The majority of the world’s crop losses are due to environmental stress, with drought stress the leading cause.

The study could result in better crop yields in the arid Western states such as Nevada and in other countries by developing plants that can better tolerate environmental stress, Mittler said.

“Even a 5 percent improvement in agricultural production worldwide would have a huge economic, social and nutritional impact,” he said.

Biochemistry professors John Cushman and Jeff Harper are co-investigators on the project.