



The challenge

The depth of research in traditional and molecular plant biology at MSU must expand to meet current and future crop science challenges. The College of Agriculture, Montana's hub of research activity, is focused on research areas that benefit Montana's crop related industries where soil management, seed development, plant growth and harvest yields greatly impact our state's economy.

There is a growing spectrum of challenges that must be faced if Montana is to safeguard the premium quality and yield of its grain crop. The list of crop pests is long and diverse, ranging from the wheat stem sawfly to cutworms to the orange blossom wheat midge. Diseases and weeds also challenge grain growers and can decimate a wheat crop regardless of the yield potential early in the season. Examples include fungal, bacterial, and physiological leaf diseases like the colorful and destructive rusts, and the biological control of weeds like prickly lettuce, cheatgrass, and herbicide resistant invasives.

Today and into the future, incorporating the growing array of molecular information and the technological tools available to researchers into our breeding programs will ensure the continued market prominence of Montana-derived wheat varieties.

Current research

As a Carnegie-classified institution, MSU is one of only 108 universities out of the nation's 4,400 colleges and universities ranked in the highest class of research activity. Montana State's high-performing faculty consistently accelerate research to create and apply new knowledge connecting MSU to the workplace and industry. We will be successful retaining our best faculty members and recruiting more world-class professors only as we remain competitive with salaries and research support.

The MSU Wheat Team consists of breeders, pest and disease management specialists, molecular scientists, cereal chemists and the Montana wheat community. Wheat breeders have steadily improved plant agronomic traits such as plant height, leaf width, expanding the growing season with stay green traits and incorporation of diverse pest resistance. This team is also addressing the basic environmental challenges of high temperature, extended periods of drought, and soil salinity. This has been the hallmark of the MSU crop research pipeline necessary to create and, ultimately, release new improved varieties to farmers.

The initiative: Plant Sciences Endowed Chair

In the future, MSU researchers will have to integrate many more factors into the wheat breeding programs. With accelerated adaptation of new molecular techniques applied to the art and science of traditional wheat breeding, MSU scientists will continue scientific efforts to maintain or improve yield and grain protein. While maintaining or improving yield and quality will continue to be a priority, additional strategic focus will be put towards:

- Temperature and water stress tolerance;
- Diverse and enhanced pest resistance;
- Nutrient use efficiency.

A newly endowed chair in Plant Sciences will accelerate the adoption and integration of new traits into Montana wheat and the transformation of advanced science into practical adaptation into the field.

Dollars and sense

The goal for a Plant Sciences Endowed Chair is to raise \$5 million by the year 2018. The endowment will support an individual of distinction who will teach, direct advanced research, and attract research funding for the department. More importantly, it provides programming support for much-needed lab equipment, research assistants and operations.

MSU recognizes the value of plant research and has issued a challenge: when the first \$1 million is raised by December 31, 2013, MSU will help jump-start the position with additional current use funds.

Your investment

Join your friends and neighbors—lead the effort to establish the first endowed chair for the College of Agriculture at Montana State. Ways to give include:

- Gifts in cash, immediate or spread out over 3–5 years
- Gifts of assets or real estate
- Gifts of appreciated stock or securities
- Gifts of retirement plan assets
- Gifts in life insurance

Tax benefits

Be sure to visit with your tax advisor regarding benefits of charitable giving. A great example is the Montana Tax Credit, a unique tax advantage for Montanans.

Fund management

Funds generated by an endowed chair are distributed to the university through a combination of professorships, grants and/or awards; spendable income may be used for compensatory purposes and other available funds are intended to offset non-compensatory expenses associated with related programming.

The Plant Sciences Endowed Chair fund will be managed by the Montana State University Alumni Foundation. At fiscal year-end 2012, the Alumni Foundation's investment pool stood at \$122 million. For the organization's audited financial statements, please go to: montana.edu/foundation/earningtrust.html

The MSU Alumni Foundation is prepared to assist you when planning your gift. Our experienced team of legal, accounting and development professionals can answer your questions about structuring a gift.

Montana Grains Foundation

The Montana Grains Foundation is a 501(c)(3) non-profit organization established by the Montana Grain Growers Association. Its mission is to promote charitable, scientific and educational activities on behalf of Montana's grain industry. The Montana Grains Foundation is the driving force behind the chair's creation and its members are willing to visit with you at any time to answer any questions you may have about this initiative.

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