



Cornell University

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Cornell University to lead broad global partnership to combat wheat rust disease and protect resource-poor farmers

ITHACA, N.Y. —Cornell University today announced a \$26.8 million grant from the Bill & Melinda Gates Foundation to launch a broad-based global partnership to combat a deadly wheat disease that poses an enormous threat to global food security. The Durable Rust Resistance in Wheat project will bring together 15 partner institutions to combat the emergence of deadly new variants of stem rust that can spread quickly, reducing healthy wheat to broken, shriveled stems. The partners will focus on developing improved rust-resistant wheat varieties to protect resource-poor farmers and consumers from catastrophic crop losses in vulnerable regions, particularly India, but also Pakistan, East Africa, China, the Middle East, and North Africa.

Ronnie Coffman, director of international programs at Cornell's College of Agriculture and Life Sciences, made the announcement in northwest Mexico at wheat research facilities near Cd. Obregón that are owned by a union of Sonoran farmers and used by the International Maize and Wheat Improvement Center (CIMMYT).

Nobel Laureate Norman E. Borlaug, who spoke at the event, developed the "green revolution" wheats at the facilities beginning in the 1940s.

"The rust pathogens recognize no political boundaries and their spores need no passport to travel thousands of miles in the jet streams. Containing these deadly enemies of the wheat crop requires alert and active scientists, strong international research networks, and effective seed supply programs," said the 94-year-old Borlaug, who is credited with bringing radical change to world agriculture and saving hundreds of millions of lives. "The new Durable Rust Resistance in Wheat project led by Cornell University is a critical component in building an effective research and development response to the current stem rust threat, and can help avert a global rust pandemic that can rob tens of millions of tons from production."

Wheat is among the world's most important primary staple food crops, representing approximately 30 percent of the world's production of grain crops. In the last year, global wheat stocks have plummeted and the price for wheat quadrupled.

The virulent new wheat stem rust type identified in Uganda, called Ug99, has now escaped Africa and is spreading across the Middle East. Scientists estimate that 90% of all wheat varieties planted around the globe are susceptible to Ug99. More than 50 million small-scale farmers in India rely on wheat for their food and income.

World awareness of the highly feared wheat disease is largely due to Dr. Borlaug's tireless advocacy, most recently through the Borlaug Global Rust Initiative. The Durable Rust Resistance in Wheat project will work closely with this existing initiative.

The project will enlist the Ethiopian Institute for Agricultural Research (EIAR) and the Kenya Agricultural Research Institute (KARI) to be key research sites to develop new resistant varieties, in collaboration with scientists at three international agricultural research centers, including CIMMYT, in Mexico; the International Center for Agricultural Research in the Dry Areas (ICARDA), in Syria; and the International Rice Research Institute (IRRI) in the Philippines. The Food and Agriculture Organization of the United Nations (FAO), and advanced research laboratories in the United States, Canada, China, Australia and South Africa will also collaborate on the project.

Coffman will direct the consortium of global partners. Rick Ward, previously a wheat breeder with CIMMYT and Michigan State University, has been hired as the project coordinator.

"Resource-poor farmers are particularly vulnerable to wheat stem disease, which has the potential to wipe out entire crops," said Dr. Rajiv Shah, director of agricultural development for the Bill & Melinda Gates Foundation's Global Development Program. "We're excited about the potential of this partnership to catalyze the increased global investments necessary to fight this powerful disease."

David J. Skorton, president of Cornell University, noting the importance of this project, said: "Global problems require a coordinated global response. With its long-standing commitment to international outreach, research and teaching, Cornell is pleased to join with our partners worldwide to safeguard the food supply, particularly for the rural and urban poor for whom bread is a dietary staple."

"Farmers need access to wheat varieties that can resist the new type of wheat stem rust, especially in developing nations where reliance on wheat is high and budgets for fungicides almost nonexistent," said Coffman, the project's director and Cornell professor

of plant breeding. “Our goals are to coordinate an international effort to combat the threat of emerging wheat rust diseases, develop improved wheat varieties that protect resource-poor farmers in vulnerable regions, foster global awareness of Ug99, and track the spread of the wheat rust pathogens.”

The Bill & Melinda Gates Foundation has to date committed over \$700 million in grants as part of a broad agricultural development strategy aimed at providing millions of small farmers in the developing world with tools and opportunities to boost their productivity, increase their incomes, and build better lives.

For more information about the Durable Rust Resistance in Wheat project, see <http://www.wheatrust.cornell.edu>

About the Bill & Melinda Gates Foundation

Guided by the belief that every life has equal value, the Bill & Melinda Gates Foundation works to help all people lead healthy, productive lives. In developing countries, it focuses on improving people’s health and giving them the chance to lift themselves out of hunger and extreme poverty. In the United States, it seeks to ensure that all people—especially those with the fewest resources—have access to the opportunities they need to succeed in school and life. Based in Seattle, the foundation is led by CEO Patty Stonesifer and co-chair William H. Gates Sr., under the direction of Bill and Melinda Gates and Warren Buffett.