

# Wheat Stem Rust Lecture by Dr. Philip Pardey at Science Salon

By Eliza Grames, Communications Specialist and Annual Meeting Coordinator

The co-evolutionary arms race between crops and pests is never won. Pests and fungal diseases take a severe toll on world crop yields, particularly for staple grains like wheat and rice. Because of this co-evolutionary arms race, between 40 and 70% of research and development investments in agriculture are simply to sustain crop yields, not increase yields.

One of the largest concerns for wheat is stem rust, a fungal disease caused by *Puccinia graminis*. Stem rust threatens global food supply of wheat; it persists in the United States,

India, China, Australia, and throughout Sub-Saharan Africa. Worldwide, 66% percent of land where wheat is grown is susceptible to stem rust, although the disease only persists on 11% of wheat area. Scientists have determined that stem rust would be an even more threatening disease if resistant cultivars were not grown alongside susceptible cultivars. More research is needed to fully understand stem rust and sustain wheat crop yields.

To maintain crop yields for wheat in the face of stem rust, Dr. Pardey estimates that a

sustained yearly investment of \$51.1 million in research and development is needed. Currently, less than half that amount is being invested.

To read more about research and development investments in agriculture and wheat stem rust, please read Dr. Pardey's article published in *Science* and found online at [www.sciencemag.org](http://www.sciencemag.org).



Dr. Pardey concluded his lecture on wheat stem rust by answering questions from guests

Photo by Dave Newell