

Undergraduate Summer Research Internships

Department of Botany and Plant Pathology, Purdue University

2009 Application Form
Please PRINT all information

Name:

Email:

Current University Mailing Address:

Home Mailing Address:

Day Phone: ()

Evening Phone: ()

Undergraduate School/Department:

Major:

G.P.A.:

Academic Advisor:

Phone: ()

Please provide the following on separate pages:

1. List all undergraduate science and math courses taken and grades received.
2. Describe any research experience or skills you have acquired from courses or work experience.
3. Include a statement describing your personal career goals and objectives.

In addition, two letters of recommendation are required. Please have your references mail their letters directly to the address below.

Application Deadline: February 1, 2009

Return application and supporting documents to:

Dr. Peter Goldsbrough, Department Head
Department of Botany and Plant Pathology
Purdue University
915 W. State Street
West Lafayette, IN 47907-2054

Phone: (765) 494-4614

Email: goldsbrough@purdue.edu

Applicants will be notified of their acceptance on or before March 1, 2009.

Research Projects

Indicate your 1st, 2nd, and 3rd choice of projects from the list below. Every effort will be made to honor your first choice.

	<p>How does the plant sperm find the egg? – Jody Banks All plants have a separate and tiny gametophyte generation responsible for producing gametes. In ferns and many other plants, the sperm have flagella and must swim from the male gametophyte and find the female gametophyte. Once it finds the female, sperm must then swim and fuse to the egg. How does the female gametophyte and egg attract the sperm? Are there specific chemicals emitted? If so, what are they? How does a sperm cell respond to these signals and change its direction of movement? These are questions that could be addressed by a summer intern.</p>
	<p>Resistance is futile – Janna Beckerman Understanding apple scab, fungicide resistance, and resistance breakdown in the fungal pathogen, <i>Venturia inaequalis</i>.</p>
	<p>Functional genomics of the maize cell wall – Nick Carpita Step 1 in the improvement of bioenergy crops</p>
	<p>The ecology, evolution, and restoration of the tallgrass prairie – Nancy Emery</p>
	<p>The wonderful world of weeds – Bill Johnson The estimated average monetary loss caused by weeds in field crops grown in the U.S. is over 4 billion dollars each year. Weed management expenses are one of the largest variable costs incurred by growers annually. Weeds growing on cropland are like crop plants themselves, drawing upon the soil and air for essential elements. Production of food and energy for humans and livestock and the economic well being of U.S. citizens depends heavily on effective, integrated management of weeds.</p>
	<p>Genetics and genomics of stresses in corn – Guri Johal The specific purpose of this project is to explore diverse maize germplasm for variation underlying the immune response to pathogens. It involves crossing a maize mutant, in which disease resistance gene of the R type is ectopically expressed, to diverse maize inbreds and then evaluating the resulting F1 progenies phenotypically using multiple measures and assays. The data obtained will then be correlated with genotypic assessments of these lines to identify and map genes and QTL capable of modulating the hypersensitive response.</p>
	<p>How safe are those vegetables anyway? – Robert Pruitt</p>
	<p>How plants make protective structures with calcium – Mary Alice Webb Many plants accumulate calcium salts, such as calcium oxalate and calcium carbonate, to fortify their defenses against herbivores, animals that eat plants. My research looks at cellular factors that influence the formation of these calcium deposits in plants, focusing on needle-shaped crystals of calcium oxalate that form in many plants, as well as calcified hairs that develop in the epidermis of some plants.</p>