

Stuart G. Gordon

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Research Interests

My research focuses on functional and taxonomic characterization of plant microbiomes and genetics of host-pathogen interactions. We use next-generation sequencing platforms, bioinformatic analysis and functional assays at the molecular and whole organism level to characterize mutualistic and pathogenic relationships between microbes and their hosts. Undergraduate students are included in all aspects of the research. In the last 10 years I have supervised over 20 undergraduate student researchers. These students have been co-authors on manuscripts, presented their results at national meetings and most have gone on to graduate or professional school. In all my courses an emphasis is placed students generating original data in the laboratory. My publications can be found here:

<https://scholar.google.com/citations?user=AvuFf6UAAAJ&hl=en>

Education

Ph.D.	2003	Ohio State University	Crop Breeding and Genetics
B.A.	1994	The College of Wooster	Biology

Positions Held

Associate Professor of Biology (present) Presbyterian College, Clinton, SC

Assistant Professor of Biology (2009-2012) Presbyterian College, Clinton, SC

HHMI Postdoctoral Teaching Research Fellow (3/2007-6/2009) Laboratory of Dr. Brad Goodner, Department of Biology, Hiram College, Hiram, OH, taught Genetics, and labs for Molecular and Cell Biology, Genetics and Microbiology and conducted research on microbial genomics with students.

Postdoctoral Researcher (2003-2007) Laboratory of Dr. Anne Dorrance, Department of Plant Pathology, The Ohio State University, Ohio Agricultural Research and Development Center, Wooster, OH. Genetic basis of resistance to the oomycete pathogen, *Phytophthora sojae*, in soybeans.

Professional Membership

American Society for Microbiology

Grant Support

PGRP NSF 11-500, Co-Principal Investigator (PI Ann Stapleton at UNCW), National Science Foundation's PGRP program, "Plant host control and feedback responses to phyllosphere microbes: Change in metagenomes and plant traits in response to environmental stress" Funded as two-year pilot project. ~\$40,000 to Presbyterian College, through August, 2014

Publications

- Pratt, R.C. and **Gordon, S.G.** 1994. Introgression of *Phaseolus acutifolius* A. Gray genes into the *Phaseolus vulgaris* L. genome. *Plant Breeding* 113:137-149.
- R. Pratt, **S. Gordon**, P. Lipps, G. Asea, G. Bigirwa and K. Pixley. 2003. Use of IPM in the control of multiple diseases in maize: strategies for selection of host resistance. *African Crop Sci. J.* 11:189-198.
- Gordon, S. G.**, Bartsch M., Matthies, I., Lipps, P.E., Gevers, H.O. and Pratt, R.C. 2004. Linkage of molecular markers to *Cercospora zea-maydis* resistance in maize via selective genotyping. *Crop Science* 44:628-636.
- Pratt, R. C. and **Gordon, S. G.** 2005. Breeding for resistance to maize foliar pathogens. *Plant Breeding Rev.* 27:119-174.
- G. Asea, P.E. Lipps, R.C. Pratt, **S.G. Gordon** and E. Adipala. 2005. Development of Greenhouse Inoculation Procedures for Evaluation of Partial Resistance to *Cercospora zea-maydis* in Maize Inbreds. *J. of Phytopathology* 153:647-653.
- Gordon, S. G.**, S. K. St. Martin and A. E. Dorrance. 2005. *Rps8* maps to a R-gene rich region on soybean linkage group F. *Crop Sci.* 46:168-173.
- Gordon, S. G.**, Lipps, P. E. and Pratt, R. C. 2006. Components of resistance to *Cercospora zea-maydis* inherited from the maize inbred VO613Y. *Phytopathology* 96:593-598.
- Brett M. Tyler, Sucheta Tripathy, Xuemin Zhang, Paramvir Dehal, Rays H.Y. Jiang, Andrea Aerts, Felipe D. Arredondo, Laura Baxter, Douda Bensasson, Jim L. Beynon, Jarrod Chapman, Cynthia M.B. Damasceno, Anne E. Dorrance, Daolong Dou, Allan W. Dickerman, Inna L. Dubchak, Matteo Garbelotto, Mark Gijzen, **Stuart G. Gordon**, Francine Govers, Niklaus J. Grunwald, et al. 2006. *Phytophthora* Genome Sequences Uncover Evolutionary Origins and Mechanisms of Pathogenesis. *Science* 313:1261-1266.
- Gordon, S. G.**, S. A. Berry, S. K. St. Martin and A. E. Dorrance. 2007. Genetic analysis of soybean plant introductions with resistance to *Phytophthora sojae*. *Phytopathology* 97:106-112.
- Gordon, S. G.**, K. Kowitwanich, W. Pipatpongpinoy, S. K. St. Martin and A. E. Dorrance. 2007. Molecular marker analysis of soybean plant introductions with resistance to *Phytophthora sojae*. *Phytopathology* 97:113-118.
- Xiaomei Guo, Dechun Wang, **Stuart G. Gordon**, Emily Helliwell*, Trista Smith*, Sue Ann Berry, Steven K. St. Martin, and Anne E. Dorrance. 2008. Resistance to *Sclerotinia sclerotiorum* in Soybean PI 391589A. *Crop Sci.* 48:1129-1139.
- Jayna L Ditty, Christopher A. Kvaal, Brad Goodner, Sharyn K. Freyermuth, Cheryl Bailey, Robert A. Britton, **Stuart G. Gordon**, Sabine Heinhorst, Kelynn Reed, Zhaohui Xu, Erin R. Sanders-Lorenz, Seth Axen, Edwin Kim, Mitrick Johns, Kathleen Scott, Cheryl A. Kerfeld.

(2010) Incorporating Genomics and Bioinformatics across the Life Sciences Curriculum. PLoS Biol 8(8): e1000448

Stuart Gordon, Brad Goodner, William Moore*, Allison Karabinos*, Alex Butcher*, Sylvia Jurek*, Saurav Nepal*, Hannah Petcovic*, Kim Renner*, Chris Shalaty*, Lauren Shunkwiler*, Robert Smith*, Sarah Todd*, Ryan Williams* and Barry Goldman. Environment affects maize phyllosphere microbiome composition more significantly than does maize genotype. *Manuscript in preparation.*

Barbara Methe, Kelvin Li, Stephen P. Talley, Wenwei Xu, Stuart G. Gordon, Brad Goodner, Ann E. Stapleton. Functional Genes Discriminate Between Maize Phyllosphere Metagenomes in Drought and Well-Watered Conditions. *Manuscript in preparation*

Selected Presentations

Barbara Methé, **Stuart G. Gordon**, Bradley W. Goodner, and Ann E. Stapleton. 2012. Plant host control and feedback responses to phyllosphere microbes: Change in metagenomes and plant traits in response to environmental stress. PGRP Awardees Meeting, Arlington, VA. 2012

Lindsay Rutledge*, Heather Manching, Ann Stapleton and **Stuart Gordon**. 2013. Phenotypic Response to *Acidovorax avenae* Infection in the IBM 94 Maize Population. Maize Genetics Meeting, St. Charles, IL.

Allison Karabinos*, Brad Goodner, Barbara Methé, Ann Stapleton, and **Stuart Gordon**. 2013. Functional analysis of the maize phyllosphere microbiome. Maize Genetics Meeting, St. Charles, IL.

William Moore*, Brad Goodner, Barbara Methé, Ann Stapleton and **Stuart Gordon**. 2014. Multivariate statistical analysis reveals effect of genotype and environment on maize microbiome composition. South Carolina ASM branch meeting, Clinton, SC.

*Denotes undergraduates student

Teaching

BIOL101 Non-majors biology

BIOL102 Non-majors biology

BIOL105 Introductory biology

BIOL106 (Lab Only)

BIOL111 Introductory biology for majors

BIOL198 Seminar in Primary Literature I

BIOL199 Seminar in Primary Literature II

BIOL312 Plant Physiology

BIOL234 Genetics

BIOL335 Human Genetics

BIOL336 Bioinformatics

BIOL398 Honors Research

BIOL401 Sr. seminar

BIOL442 Directed Studies
Maymester to Patagonia, May 2014

College Service

Biochemistry Program Faculty
Academic Master Plan Task Force
Faculty Development Committee
Diversity Council
Alcohol advisory
Student code of responsibility, revision committee
Academic Success Task Force
Student Life
Health Sciences Advisory Committee

Patents

Steven St. Martin, Anne Dorrance, Kara Burnham, Ron Fioritto, David Francis and Stuart Gordon. IDENTIFICATION OF SOYBEANS HAVING RESISTANCE TO PHYTOPHTHORA SOJAE. Patent #7435873

TRAINING COURSES

Field Guide to GenBank and NCBI Molecular Biology Resources, April 29, 2003.

NC State University, Summer Institute in Statistical Genetics, Association Mapping, June 2-4, 2003.

Phytophthora sojae genome annotation jamboree, NSF-funded workshop, August 15-20, 2004 (received fellowship).

Plant-Associated Microbe Gene Ontology/Bioinformatics Training workshop, August 8-10, 2007

DOE Joint Genome Institute Undergraduate Research, October 18-19, 2007; June 18-20, 2008.