

# Sophia G. Zebell

## University Address

Department of Biology  
Duke University  
Durham, NC 27706  
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## OBJECTIVE

I aspire to investigate mechanisms of host-microbe interactions across model systems, developing new research skills specifically in the areas of proteomics and computational biology.

## EDUCATION

*PhD*, Biology

Duke University, Durham, NC

August 2012 - present

Certificate in Cell and Molecular Biology

*BS*, Genetics

University of Wisconsin-Madison, Madison, WI

December 2011

## RESEARCH EXPERIENCE

*Department of Biology, Duke University*

August 2012 – present

Graduate Research Assistant and PhD Candidate

Advisor: Dr. Xinnian Dong

- Conducted thesis research on the molecular regulation of *Arabidopsis thaliana* effector-triggered immunity programmed cell death by cell cycle components and calcium ion signaling.

*Department of Plant Pathology, University of Wisconsin-Madison*

Research Technician II

January – August 2012

Advisor: Dr. Andrew Bent

- Cloned genes contained within *Glycine max* putative resistance locus Rgh1 and assessed their effect on resistance of cultured soybean roots by microscopy

Undergraduate Research Assistant

November 2008 – December 2011

Advisor: Dr. Andrew Bent

- Investigated the role of the post-translational modification Poly(ADP-ribos)ylation in the *Arabidopsis thaliana* innate immune response

*Soybean Genomics and Improvement Lab, USDA ARS*

May – August 2009, 2010

Biological Science Aid

Advisor: Dr. David Hyten

- Developed molecular genetic tools for utilization of germplasm resources in *Glycine max* and *Phaseolus vulgaris* breeding

## PUBLICATIONS

Gu, Y., Zebell, S.G., Liang, Z., Wang, S., Kang, B.H., and Dong, X. (2016). *Nuclear Pore Permeabilization*

*Is a Convergent Signaling Event in Effector-Triggered Immunity.* Cell 166(6), 1526-1538.

**Zebell, S.G.**, and Dong, X. (2015). *Cell Cycle Regulators and Programmed Cell Death in Immunity.* Cell Host & Microbe 18 , 402-407.

Wang, S.\*, Gu, Y.\*, **Zebell, S.G.\***, Anderson, L.K., Wang, W., Mohan, R., and Dong, X. (2014). *A noncanonical role for the CKI-RB-E2F cell-cycle signaling pathway in plant effector-triggered immunity.* Cell Host & Microbe 16, 787-794. (\*these authors contributed equally to this work)

## PRESENTATIONS

**Zebell, S. G.**, Withers, J., Zwack, P. J., Dong, X. *Phosphorylation of Retinoblastoma-Related 1 during Arabidopsis Effector-Triggered Immunity*, 5th International Biotic Plant Interactions Meeting, Xiamen, China. August 17–21, 2017. (Poster)

**Zebell, S. G.**, Dong, X. *Phosphorylation of Retinoblastoma-Related 1 during Arabidopsis Effector-Triggered Immunity*, Posttranslational Modification Networks, Hong Kong, China. August 12–17, 2017. (GRS Oral Presentation and Poster)

**Zebell, S. G.** *Calcium Signaling and Plant Programmed Cell Death*, Duke University, Durham, NC. February 12, 2015. (Plant Biology Forum Seminar)

**Zebell, S. G.** *Live and Let Die; Programmed Cell Death During Plant Immunity*, East Carolina University Department of Biology, Greenville, NC. September 21, 2015. (Research In Progress Seminar Series)

**Zebell, S. G.**, Wang, S., Dong, X. *Hyperphosphorylation of Retinoblastoma Leads to Programmed Cell Death During Effector Triggered Immunity*, Plant Biology 2015, Minneapolis, MN. July 26–30, 2015. (Poster)

**Zebell, S. G.** *To be or not to be; questions in plant immunity*, Davidson College Department of Biology, Davidson, NC. April 9, 2015. (Invited Departmental Seminar)

**Zebell, S. G.**, Wang, S., Gu, Y., and Dong, X. *Regulation of Arabidopsis Effector-Triggered Immunity by the Transcription Coactivator Family E2F*. 28<sup>th</sup> Annual North Carolina Plant Molecular Biology Retreat, Wrightsville Beach, NC. September 12-14, 2014. (Chalk Talk)

## TEACHING and MENTORING

**Mentor**, Yezi Xiang, graduate student, Duke University 2017– 2018  
Investigated posttranslational modification of *Arabidopsis* immune regulators. (Biology Rotation Project)

**Mentor**, Elizabeth Brown, undergraduate student, Duke University 2017– 2018  
Investigated calcium signaling in *Arabidopsis* effector-triggered immunity. (Duke University Honors Thesis)

**Guest Lecturer**, Introduction to Microbiology, Duke University Spring 2017  
Presented a lecture on respiration and photosynthesis to Duke undergraduates.

**Teaching Assistant**, Introduction to Microbiology, Duke University Spring 2015, 2017  
Instructed biweekly laboratory sessions in which students were trained in basic microbiological techniques.

**Guest Lecturer**, Advanced Genetics, Elon University Spring 2016  
Developed a case study to introduce students to quantitative traits and agricultural genetics.

**Guest Lecturer**, Introductory Genetics, Elon University Fall 2015  
Presented a lecture on bacterial gene regulation to Elon undergraduates.

**Mentor**, Hannah McMillian, undergraduate student, Davidson College 2014– 2015  
Investigated calcium signaling in *Arabidopsis* effector-triggered immunity. (Davidson College Honors Thesis)

**Mentor**, Kaitlin McCreery, undergraduate student, Duke University 2013–2014  
Cloned molecular constructs for investigation of genes important to *Arabidopsis* effector-triggered immunity.

### PROFESSIONAL DEVELOPMENT

Efficient and Effective Feedback for Student Writing Nov. 9, 2016  
Duke University

Plant Post-Translational Modifications Proteomics Workshop Dec. 7-9, 2015  
University of Chicago

### HONORS

Conference Travel Award Summer 2015, 2017  
Duke University Graduate School

Mitchell Meritorious Research Travel Award Summer 2017  
Duke University Center for Host-Microbial Interactions

**Fellow**, Preparing Future Faculty Academic Year 2015 – 2016  
Mentor: Linda Niedziela, Elon University

Kemper K. Knapp Scholarship Academic Year 2008 – 2009  
University of Wisconsin-Madison

### OUTREACH

*Bananas are Berries?!* Recurring  
Collaborated on booth about fruit classification with Duke Biology PhD student Sasha Makohon-Moore.

*Plants for Kids* Recurring  
Participated in booth about plant growth presented at North Carolina Science Museum with North Carolina State University's Alonso-Stephanova and Sozzani labs.

*North Carolina DNA Day* Apr. 27, 2014  
Taught two classes on Genomics at Wake Academy Juvenile Correction Facility.

*University of North Carolina-Chapel Hill FEMMES Capstone* Nov. 16, 2013  
Developed and taught a module about genomics to young aspiring female scientists.

*Undergraduate Genetics Association* 2008 - 2011  
Volunteered in annual science outreach events such as Darwin Day, Expanding Your Horizons, and National Science Olympiad

### EXTRACURRICULAR

Professional Societies

Associate Member, Sigma Xi

2017 - present

Member, American Society of Plant Biologists

2015 - present

Departmental

Organization of CMB Picnic 2013, CMB Symposium 2012 and 2013, Biology Departmental Christmas Party 2013, Biology Spring Formal 2014

Team Sports

Duke University Intramural Softball

Spring 2014