

## Zhen (Daisy) Fu

Postdoctoral Research Associate  
Department of Entomology  
Washington State University

  
fuzhenblog.wordpress.com

### EDUCATION

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**Ph. D. Plant and Environmental Sciences** 08/2007-05/2012  
Clemson University, Clemson, SC.

**B. S. Agronomy**  
China Agricultural University, Beijing, China 09/2002-7/2006

### RESEARCH & WORK EXPERIENCE

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**Postdoctoral Research Associate** 07/2012-present  
Dept. of Entomology, Washington State University, Pullman, WA.

- Population genomics and disease transmission of potato psyllids
- Predator prey interaction of Colorado potato beetles on potatoes
- Genome of potato psyllids using PacBio sequencing

**Research Assistant** 08/2007-06/2012  
Nematology Laboratory, Clemson University

- Molecular mechanisms of facultative feeding and desiccation tolerance of foliar nematode
- Assessing resistance hosta cultivars to foliar nematodes

**Laboratory Intern** 05/2009-08/2009  
Plant Problem Clinic, Clemson University

- Molecular diagnosis of *Phytophthora ramorum* (Sudden Oak Death) on ornamental plant samples

**Laboratory Intern** 6/2008-08/2008  
Plant Problem Clinic, Clemson University

- Processed and identified plant diseased samples
- Maintained plant disease database of South Carolina and webpage of Home & Garden Information Center of Clemson University

### PEER-REVIEWED PUBLICATIONS

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Krey KL, Blubaugh CK, Chapman EG, Lynch CA, Snyder GB, Jensen AS, **Fu Z**, Prischmann-Voldseth DA, Harwood JD, Snyder WE. (2017). Generalist predators consume spider mites despite the presence of alternative prey. *Biological Control* 115(12): 157-164

**Fu Z**, Epstein B, Kelley JL, Zheng Q, Bergland AO, Castillo Carrillo CI, et al. (2017) Using NextRAD sequencing to infer movement of herbivores among host plants. *PLoS ONE* 12(5): e0177742

Castillo Carrillo CI, **Fu Z**, Jensen AS, Snyder WE. (2016). Arthropod Pests and Predators Associated With Bittersweet Nightshade, a Noncrop Host of the Potato Psyllid (Hemiptera: Triozidae). *Environ Entomol.* 45(4):873-82.

Philips CR, **Fu Z**, Kuhar TP, Shelton AM, Cordero RJ. 2014. Natural history, ecology, and management of diamondback moth (Lepidoptera: Plutellidae), with emphasis on the United States. *Journal of Integrated Pest Management.* 5(3):D1-1

**Fu Z**, Agudelo P, Gerard P. 2012. A protocol for assessing resistance to *Aphelenchoides fragariae* in Hosta Cultivars. *Plant Disease.* 96(10):1438-44

**Fu Z**, Agudelo P, Wells CE. 2012. Differential expression of a beta-1,4-endoglucanase induced by diet change of the foliar nematode *Aphelenchoides fragariae*. *Phytopathology* 102: 804-811

**Fu Z**, Wells CE, Agudelo P. 2012. Induction of glutaredoxin expression in response to desiccation stress in the foliar nematode *Aphelenchoides fragariae*. *Journal of Nematology* 44: 378-384

#### Manuscripts in prep

Jones M, **Fu Z**, Karp DS, Besser, TE, Reganold, JP, Tylianakis, JM, Snyder, WE. Organic farming promotes biotic resistance to food-borne human pathogens (In prep for PNAS)

**Fu Z.**, Jones EI, Epstein B, Crowder DE, Bates C, Jabbour R, Hohenlohe PA, Snyder WE. Emergent effects of intraspecific and interspecific entomopathogen diversity (In prep for *Ecology*)

Krey K, Nabity PD, **Fu Z**, Blubaugh CK, Van Leuven JT, Reganold,JP, Berim A, Gang DR, Jensen AS, Main, D, Snyder WE. Organic farming sharpens plant defenses in the field (in prep for *Molecular Ecology*)

#### **EXTENSION PUBLICATION**

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Horton D., R, J. Thinakaran, R. W Cooper, J. Munyaneza, C. H. Wohleb, T. D. Waters, W. E. Snyder, **Z. Fu**, D. W. Crowder A. S. Jensen. Matrimony vine and potato psyllid in the Pacific Northwest: a worrisome marriage? Potato progress. Research & Extension for the Potato Industry of Idaho, Oregon, & Washington. 2016

#### **SELECTED PRESENTATIONS AT CONFERENCES**

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“Scared sick: effect of predator-induced stress on herbivore survival against pathogens”. 2017. The Annual Meeting of Entomological Society of America (ESA). Denver, CO

“NextRAD reveals insect movement”. 2016. Member workshop “Arthropod Genomics” at Plant and Animal Genome (PAG) XXIV. San Diego, CA

“Population genomics of the potato psyllid in the Pacific Northwest”. 2015. Member Symposium: New Approaches in Big-Data Phylogenetics. The Annual Meeting of ESA, Minneapolis, MN

“Exploring the genetic basis of ecological complementarity”. 2014. The Annual Meeting of ESA. Portland, OR

“*De novo* transcriptome assembly of the plant-parasitic nematode *Aphelenchoides fragariae*”. 2012. PAG XX. San Diego, CA.

“Differential expression of beta 1,4-endoglucanase induced by diet change of the foliar nematode *Aphelenchoides fragariae*”. 2011. Society of Nematologists (SON) 50<sup>th</sup> Annual Meeting. Corvallis, OR.

“Comparison of methods for assessing resistance and tolerance to *Aphelenchoides fragariae* in hosta cultivars”. 2010. Journal of Nematology 42 (3):242. SON 49<sup>th</sup> Annual Meeting, Boise, ID.

“Genes associated with desiccation tolerance in the foliar nematode *Aphelenchoides fragariae*”. 2009. Journal of Nematology 41 (4): 330. SON 48<sup>th</sup> Annual Meeting. Burlington, VT.

#### **OTHER INVITED PRESENTATIONS**

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Washington State University Pesticide Education Program (250 people) 2017  
Presentation “Conserving insects of biological importance to agriculture”

Dept. of Entomology, Washington State University 2013  
Seminar presentation “The good and the bad: nematodes in the agricultural ecosystem”

#### **GRANTS**

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Co-author and Key Personnel, (PI: Dr. William Snyder), USDA-SCRI, “Mapping and Predicting Psyllid Sources, Immigration and Locality-Specific Disease Spread in the PNW” (\$2,680,111) 2015

Co-author (PI: Dr. William Snyder), Washington State University BIOAg Program, “Biodiversity and the Natural Suppression of Human Pathogens” (\$39,193) 2014

Co-PI (PI: Dr. William Snyder), Washington Potato Commission, “Population genetics of the potato psyllid in the inland Northwest” as Joint Northwest ZC/Potato Psyllid Research Proposal for 2014-15 Research” (\$37,798) 2014

Co-author (PI: Dr. William Snyder), USDA-Organic Transitions Program, “Biodiversity and Natural Pest Suppression” (\$749,661) 2013

Co-PI (PI: Dr. William Snyder), Washington State University BIOAg Program, “Sequencing the genomes of two critically-important biological control agents”, (\$35,048) 2013

Co-PI (PI: Dr. William Snyder), Washington Potato Commission, “Ecology of the potato psyllids in Washington” (\$50,322) 2013

PI, Dept. of Biological Science, Clemson University, “Histological study of desiccation of foliar nematode *A. fragariae*” (\$1,000) 2008

## **HONORS & AWARDS**

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Best Student Paper 2011

SON 50<sup>th</sup> Annual Meeting. Corvallis, OR.

N. A. Cobb Student Travel Award 2011

SON 50<sup>th</sup> Annual Meeting. Corvallis, OR.

Dow AgroSciences Student Travel Award 2009

SON 48<sup>th</sup> Annual Meeting. Burlington, VT.

Academic scholarship 2004

China Agricultural University, Beijing, China

Academic scholarship 2003

China Agricultural University, Beijing, China

## **TEACHING EXPERIENCE**

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**Instructor**, Washington State University 2017

*Insects and People: A Perspective* (ENT101, 3 credits, 14 students)

*Discover Insects: Laboratory for Non-Science Majors* (ENT103, 1 credit, 29 students)

**Guest Lecturer**, Washington State University 2016-2017

*Contemporary Genetics* (8 lectures), *General Entomology* (4 lectures), *Molecular Genetics of Plant-Pathogen Interactions* (2 lectures)

**Teaching Assistant**, Clemson University 2000- 2011

*Principles of Biology Laboratory*, prepared lab materials and protocols for 300 students

**Guest Lecturer**, Clemson University 2010

*Plant Nematology* (2 lectures)

**Teaching Assistant, Clemson University** 2009

*Plant Pathology Laboratory*, prepared weekly lab materials and instructed 12 students

**Mentor of students**, Washington State University

- Mentored graduate student C. Castillo on haplotyping of potato psyllids
- Mentored undergraduate students Ashley Walrath and Abbie Estep of their independent research projects on entomopathogenic nematodes
- Mentored undergraduate student Bianca Barrantes and Patricia Hawbaker of their independent projects on predation dynamics of ground beetles

## **PROFESSIONAL DEVELOPMENT ACTIVITIES**

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Reviewer for *International Journal of Insect Science*, *Florida Entomologist*,

<i>Economical Entomology, PLOS ONE</i>	2013-2017
Judge for Graduate Student Research Expo at WSU	2017
Workshop “Studying Gene Expression by RNA-Seq”	2015
Judge of Showcase for Undergraduate Research at WSU	2014-2015
<i>Plant-Parasitic Nematode Identification</i> Course, Clemson, SC	2008

**PROFESSIONAL MEMBERSHIPS**

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Entomological Society of America  
 American Phytopathological Society  
 Society of Nematologists