Jie Wang

Contact Information

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Education

Dual Ph.D. in Plant Pathology and in Ecology, Evolutionary Biology & Behavior (EEBB)
Michigan State University, East Lansing, Michigan, USA. 05/2016 (expected)
Advisor: Dr. Martin Chilvers

Bachelor of Science in Biology
Nanjing Agricultural University, Nanjing, China. 06/2010

Research Experience

2010-2016, Graduate research assistant
Department of Plant, Soil and Microbial Sciences, Michigan State University

Dissertation projects:

- Development improved diagnostic assay (qPCR) for the soybean sudden death syndrome pathogen, *Fusarium virguliforme*. **One first author manuscript published (3)**
- Development microsatellite markers for *Fusarium* spp. within clade 2 *Fusarium solani* species complex using genomic sequences. **One first author manuscript published (4)**
- Identify the source and dispersal routes of the sudden death syndrome pathogen, *F. virguliforme* in the US utilizing a population genetics approach (Microsatellite). **One first author manuscript in prep (9)**
- Temporal dynamics of *Fusarium virguliforme* colonized in soybean roots – determine different soybean cultivars response to *F. virguliforme* infection. **One first author manuscript in prep (6).**
- Fungicide baseline sensitivity test for *F. virguliforme* and its application in the field seed treatment trials for SDS disease management. **Two first author manuscripts in prep (7).**

Other projects at Chilvers lab:

- Risk assessment for *F. virguliforme* causing sudden death syndrome in soybeans using pre-plant soil samples.
- Phylogenetic analysis and characterization of the *Fusarium* spp. collected from a soybean field in Michigan.
- Transcriptomics analysis for the Pea-*Scelerotinia sclerotirum* interaction focusing on the pathogen life style transition during infection.

Collaboration projects with other labs:

- Collaborative research with Dr. Paul Giodano to investigate the comparative genomics of the *Acidovorax* genus bacteria causing disease on turf and developed species specific molecular diagnostic assay for *A. avenae*. **One co-author manuscript in prep (12).**
- Collaboration with Dr. Giordano and Dr. Zeng on identifying the core-pan genomes for the *Acidovorax* genus bacteria elucidating the host adaptation related genomics region. **One co-first author manuscript in prep (11).**

2009-2010, Undergraduate Research Assistant
Department of Veterinary Medicine, Nanjing Agricultural University

Research project: Construct subunit vaccines for the swine pneumonia pathogen *Actinobacillus pleuropneumoniae* using proteins expressed in *E. coli*.

2008-2009, Undergraduate Research Assistant
Department of Microbiology, Nanjing Agricultural University

Research project: optimize protoplast preparation for the endophyte fungi *Epichloe yanzii* (1) transform this endophyte fungus with a *gfp* gene for in vivo visualization. **This project was funded by Ministry of Education National College Student Innovation Project Funding: CNY 30,000. One co-author manuscript published (1).**

Publications

Published

1. Wu Z., **Wang J.**, Xie W., Chen Y., and Wang Z. 2011 *Poaceae* endophyte research 15: optimization protoplast preparation and regeneration for the *Poaceae* endophyte *Epichloe yanzii, Jiangsu Agric. Sci.*, 40(2):17-20
2. Chilvers, M.I., Warner, F.W., Jacobs, J.L. and **Wang, J.** 2011 Efficacy of nematicide and fungicide seed treatments for soybean cyst nematode and soybean sudden death syndrome in Michigan, *Plant Disease Management Reports*.
3. **Wang, J**., Jacobs, J. L., Byrne, J. M., and Chilvers, M. I. 2015 Improved diagnoses and quantification of *Fusarium virguliforme*, causal agent of soybean sudden death syndrome. *Phytopathology* 105(3):378-87
4. Kandel, Y.R., Haudenshield, J.S., Srour, A.Y., Islam, K.T., Fakhoury, A.M., Santos, P., **Wang, J.**, Chilvers, M.I., Hartman, G.L., Malvick, D.K. and Floyd, C.M., 2015. Multilaboratory Comparison of Quantitative PCR Assays for Detection and Quantification of *Fusarium virguliforme* from Soybean Roots and Soil. *Phytopathology*, *105*(12), pp.1601-1611.
5. **Wang, J.**, and Chilvers, M. I. 2016 Development and characterization of microsatellite markers for *Fusarium virguliforme* and their utility within clade 2 of the *Fusarium solani* species complex. *Fungal Ecology* 20:7-14

In prep

6. Wang, J., Jacobs, J. L., Roth, M. G., and Chilvers, M. I. 2016 Temporal dynamics of *Fusarium virguliforme* colonization in soybean root. *In preparation*
7. Wang, J., Stenzel, O. and Chilvers, M. I. Baseline sensitivity of *Fusarium virguliforme* to the succinate dehydrogenase fungicide, fluopyram. *In preparation*
8. Wang, J., Jacobs, J. L., and Chilvers, M. I. Effect of fluopyram seed treatment on soybean sudden death syndrome management by quantifying temporal dynamics of *Fusarium virguliforme* in roots
9. Wang, J., Jacobs, J. L., and Chilvers, M. I. Population genetics analysis of *Fusarium virguliforme* indicating the population
10. Zeng, Q., Wang, J., Giordano, P. R., et al. Genomic analysis of the turfgrass pathogen *Acidovorax avenae* subsp. *avenae* identifies evidence for directional selection during pathogen evolution
11. Giordano, P. R., Wang, J., et al. Genetic relationships among plant pathogenic members of the *Acidovorax* genus: Towards specific molecular diagnosis of the turfgrass pathogen

Presentations

1. **Wang J**., and Chilvers M. 2015 Population genetic analyses of *Fusarium virguliforme* reveal the population structure of F. virguliforme isolates from North and South America American Phytopathology Society Annual Meeting 2015, Pasadena, CA, USA (1-O, Oral presentation)
2. **Wang J**., and Chilvers M. 2014 Management of soybean sudden death syndrome by seed treatment with fluopyram American Phytopathology Society Annual Meeting 2014, Minneapolis, MN, USA (26-O, Oral presentation)
3. **Wang J**., and Chilvers M. 2014 Population genetic analysis indicates genetic diversity of *Fusarium virguliforme* within and between sampling locations American Phytopathology Society Annual Meeting 2014, Minneapolis, MN, USA (494-P, Poster presentation)
4. **Wang J**., Jacobs. J., and Chilvers M. 2014 Population genetic analysis indicates genetic diversity of *Fusarium virguliforme* within and between sampling locations Mycological Society of America Annual Meeting 2014, East Lansing, MI, USA 12003, Oral presentation)
5. **Wang J**., Jacobs. J., and Chilvers M. 2013 Temporal dynamics of soybean root colonization by *Fusarium virguliforme* American Phytopathology Society Annual Meeting 2013, Austin, TX, USA (48-O, Oral presentation)
6. **Wang J**., and Chilvers M. 2012 Improved molecular detection of the soybean sudden death syndrome pathogen *Fusarium virguliforme* by real-time qPCR American Phytopathology Society Annual Meeting 2012, Providence, RI, USA (P-337, Poster presentation)
7. **Wang J**., Rojas A. J., and Chilvers M. 2012 Development and characterization of microsatellite mark- ers for soybean sudden death syndrome pathogen *Fusarium virguliforme* American Phytopathology Society Annual Meeting 2012, Providence, RI, USA (P-338, Poster presentation)
8. **Wang J**. and Chilvers M. 2011 Soybean Diseases Research Update 2012 in MI Extension Meeting, Dowagiac, MI, USA (for local soybean growers)
9. **Wang J**. and Chilvers M. 2011Soybean Sudden Death Syndrome in Michigan American Phytopathology Society North Central Meeting 2011, Omaha, NE, USA

10. **Wang J**. and Chilvers M. 2011 Soybean Sudden Death Syndrome in Michigan MSU 9th Annual PSGS Research Symposium, East Lansing, MI, USA

Awards Received

MSU Dissertation Completion Fellowship	$6,000	2016
Beneke Endowed fund graduate student award	$700	2015
APS Foundation Stuart D. Lyda Student Travel award	$500	2014
Carter Harrison endowed fund graduate student award	$10,000	2013
OMGN bioinformatics workshop travel award	$1,000	2013
A.L. Rogers Endowed Research Scholarship	$2,300	2012
Paul Taylor Scholarship	$1,200	2011
Graduate Fellowship	$800	2011
Excellent Student Scholarship	¥1,500	2009
Single Item Scholarship	¥500	2008
Second Prize Award Mathematical Contest in Modeling	¥500	2008
China Ministry of Education National College Student Innovation Award	¥30,000	2008

Specialized Training

1. Computational Methods for Evolutionary Biologists. One semester lecture of python programing and implementation of evolution theory in computer. East Lansing, Michigan. September 2015.
2. Angus Next Generation Sequencing bioinformatics training workshop. One-week advanced workshop on the analysis of NGS data. Kellog Biological Station, Michigan. August 2015.
3. Plant Pathogen Diagnostic Workshop – instructor. One-day workshop on training plant disease diagnosticians with molecular diagnostic tools. East Lansing, Michigan. June 2015.
4. Intermediate Applied Bioinformatics training workshop. One-week workshop on the analysis of NGS data and applied genomics. Led by Robin Buell. East Lansing, Michigan. July 2013.
5. Oomycete Bioinformatics Training Workshop. Three-day training on the analysis of fungal genomics data using FungiDB. Led by Brett Tyler. Virginia Tech, Blacksburg, VA. June 2013.

Skills

Lab skills: DNA extraction, PCR, Real-time PCR, genotyping, fungal phenotyping, protein expression and purification, molecular cloning, ELISA, Western blot

Computer skills: Statistical analysis, PCR primer design, marker development, population genetic, phylogenetic software, Unix, genome assembly, genome annotation

Programming languages: R ≥ Python > Shell > Perl > SQL (Ranked based on usage frequency)

Field skills: inoculum preparation, disease rating, experimental design and statistical analysis

Mentoring

Student supervisor – Michigan State University

Department of Plant, Soil, and Microbial Sciences

Supervised one 4th year undergraduate student lab work focusing on fungicide sensitivity test resulting with a coauthor publication (7)

Professional Membership

American Phytopathology Society (Member)	2011 - 2015
American Phytopathology Society North Central Division (Member)	2012 - 2014
Mycological Society of America (Member)	2014

Services

Member – PSM departmental marketing committee
Member – APS evolution genetic and genomics committee
Member – APS soilborne pathogen committee
Volunteer – APS foundation desk

References available upon request