Xing Wei
College of Tropical Agriculture and Human Resilience
Plant and Environmental Protection Sciences
FTE Distribution: 0%I; 100%R; 0%E

Education

Degree	University	Major
PhD	Virginia Tech	Plant Pathology, Physiology&Weed Science
Masters	University of Georgia	Plant Protection and Pest Management
BS	Qingdao University	Automation Engineering

Professional Appointments

Title	Employer	Dates Employed
Affiliate Graduate Faculty	University of Hawai‘i at Mānoa	2024 to Present
CRB Postdoctoral Researcher	RCUH	2024 to Present
Postdoctoral Research Assistant	Purdue University	2021 to 2024
Graduate Research Assistant	Virginia Tech	2017 to 2021
Graduate Research Assistant	University of Georgia	2015 to 2016

Publications (reverse chronological order)

Refereed Journal Publications

1. Zhang, J., **Wei, X.**, Song, Z., Chen, Z., Jin, J. 2025. A high-precision spatial and spectral imaging solution for accurate corn nitrogen content level prediction at early vegetative growth stages. *Computers and Electronics in Agriculture*. 230, 109940. DOI: 10.1016/j.compag.2025.109940
2. Song, Z., **Wei, X.**, Zhang, J., Chen, Z., and Jin, J. 2024. Spatial-spectral feature mining in hyperspectral corn leaf venation structure and its application in nitrogen content estimation. *Computers and Electronics in Agriculture*. 227,109495. DOI: 10.1016/j.compag.2024.109495
3. **Wei, X.**, Zhang, J., Conrad, A.O, Flower, C.E., Pinchot, C.C., Hayes-Plazolles, N., Chen, Z., Song, Z., Fei, S., and Jin, J. 2023. Machine learning-based spectral and spatial analysis of hyper- and multispectral leaf images for Dutch elm disease detection and resistance screening. *Artificial Intelligence in Agriculture*, 10: 26-34. DOI:10.1016/j.aiia.2023.09.003
4. Dhakal, K., Sivaramakrishnan, U., Zhang, X., Belay, K., Oakes, J., **Wei, X.**, and Li, S. 2023. Machine learning analysis of hyperspectral images of damaged wheat kernels. *Sensors*, 23, 3523. DOI: 10.3390/s23073523
5. Zhang, J., Ma, D., **Wei, X.**, and Jin, J. 2023. Visible and near-infrared hyperspectral diurnal variation calibration for corn phenotyping using remote sensing. *Remote Sensing*, 15, 3057. DOI: 10.3390/rs15123057
6. Niu, Z., Young, J., Johnson, W. G., Young, B., **Wei, X.**, and Jin, J. 2023. Early detection of dicamba and 2, 4-d herbicide drifting injuries on soybean with a new spatial–spectral algorithm based on Leafspec, an accurate touch-based hyperspectral leaf scanner. *Remote Sensing*, 15(24), 5771. DOI: 10.3390/rs15245771
7. Li, X., Chen, Z., **Wei, X.**, Zhao, T., and Jin, J. 2023. Development of a target-to-sensor mode multispectral imaging device for high-throughput and high-precision touch-based leaf-scale soybean phenotyping. *Sensors*, 23, 3756. DOI: 10.3390/s23073756
8. Song, Z., **Wei, X.**, and Jin, J. 2022. NLCS - A novel coordinate system for spatial analysis on hyperspectral leaf images and an improved nitrogen index for soybean plants. *Computers and Electronics in Agriculture*. 204, 107550. DOI: 10.1016/j.compag.2022.107550
9. **Wei, X.**, Langston, D.B., Jr., and Mehl, H.L. 2022. Comparison of current peanut fungicides against Athelia rolfsii through bioassay of detached plant tissues. *Plant Disease*. DOI: 10.1094/PDIS-12-21-2789-RE
10. **Wei, X.**, Johnson, M.A., Langston, D.B., Jr., Mehl, H.L.; Li, S. 2021. Identifying optimal wavelengths as disease signatures using hyperspectral sensor and machine learning. *Remote Sensing*, 13, 2833. DOI: 10.3390/rs13142833

11. **Wei, X.**, Aguilera, M., Walcheck, R., Tholl, D., Li, S., Langston, D.B., Jr., and Mehl, H.L. 2021. Detection of soilborne disease utilizing sensor technologies: Lessons learned from studies on stem rot of peanut. *Plant Health Progress*. 22:436-444. DOI: 10.1094/PHP-03-21-0055-SYN
12. **Wei, X.**, Langston, D.B., Jr., and Mehl, H.L. 2021. Spectral and thermal responses of peanut to the infection and colonization with Athelia rolfsii. *PhytoFrontiers*. 1:173-181. DOI: 10.1094/PHYTOFR-07-20-0008-R
13. **Wei, X.**, Roberts, P.M., Porter, W.M., Perry, C.D., and Toews, M.D. 2017. A laboratory evaluation of chemigation to manage stink bugs (Hemiptera: Pentatomidae). *Journal of Economic Entomology*. 110:471-478. DOI: 10.1093/jee/tow315

Extension Publications

1. **Wei, X.**, Byrd-Masters, L., and Mehl, H.L. 2020. Comparison of in-furrow and foliar applications of fungicides for disease control and impact on yield in peanut in Virginia, 2019. *Plant Disease Management Reports*. 14:CF165
2. **Wei, X.**, Byrd-Masters, L., and Mehl, H.L. 2020. Evaluation of in-furrow and foliar applications of fungicides to control leaf spot and soilborne diseases in peanut in Virginia, 2019. *Plant Disease Management Reports*. 14:CF166
3. **Wei, X.**, Byrd-Masters, L., and Mehl, H.L. 2019. Comparison of in-furrow and foliar applications of fungicides for peanut disease control in Virginia, 2018. *Plant Disease Management Reports*. 13:CF144
4. **Wei, X.**, Byrd-Masters, L., and Mehl, H.L. 2019. Comparison of in-furrow and foliar applications of fungicides for leaf spot and soilborne disease control in peanut in Virginia, 2018. *Plant Disease Management Reports*. 13:CF145
5. **Wei, X.**, Byrd-Masters, L., and Mehl, H.L. 2018. Comparison of foliar fungicide programs for leaf spot and soilborne disease control in peanut in Virginia, 2017. *Plant Disease Management Reports*. 12:CF041

Selected Honors and Awards

- First Place of Pitch Presentation, Bayer Innovation Bootcamp, 2023
- Postdoc Travel Grant, Purdue University, 2023
- C. Lee Campbell Student Travel Award, APS, Plant Health 2021
- The 19th I. E. Melhus Graduate Student Symposium Selected Speaker, APS, Plant Health 2020
- The Graduate Student Spotlight in *Phytopathology News*, Volume 54, Issue 1, APS, 2020
- The Horace E. and Elizabeth F. Alphin Scholarship, the William T. Steele, Jr. Graduate Scholarship, and the Cyrus McCormick Scholarship, College of Agriculture and Life Sciences, Virginia Tech, 2020
- The Graduate Student Assembly Travel Fund Program Award, the Graduate School and the Office of the Provost, Virginia Tech, 2019

Leadership Roles (Committees, Boards, Advisory, etc.)

- Judge, CTAHR Showcase & Research Symposium, 2025
- Associate Editor, Plant Disease, 2024 to present
- Review Editor, Frontiers in Plant Science, 2022 to present
- Chair, Crop Loss Assessment and Risk Evaluation (CLARE) committee of APS, 2023 – 2024
- Vice Chair, Crop Loss Assessment and Risk Evaluation (CLARE) committee of APS, 2022 – 2023
- Co-organizer and lecturer, Introduction of Python and Machine Learning in Phytopathology workshop at APS, 2022

Graduate Students

Category	Current Number of Students	Number Graduated (Career)
Member of Master Committees	1	0
Member of PhD Committees	0	0

Grant Support (last 5 years)

Title of Grant: Accurate Assessment of Corn Nitrogen Status with High Spatial-spectral Proximal Sensing
Source of Grant: USDA Natural Resources Conservation Service
Total Dollar Value (Your share of the grant value): $418,381
Dates of Grant: 2024-2026
Role: (PI, CoPI) Coordinated and contributed to the writing of the original draft of the proposal.

Title of Grant: Integrating Aerial and Ground-based Imaging Solutions to Screen Elm Genotypes for Resistance against Dutch elm disease
Source of Grant: Digital Forestry Seed(ling) Grant, Purdue University
Total Dollar Value (Your share of the grant value): $36,000
Dates of Grant: 2024-2025
Role: (PI, CoPI) CoPI: led the writing of the original draft of the proposal and served as Co-PI.

Title of Grant: The American Elm Breeding and Restoration Project
Source of Grant: Manton Foundation
Total Dollar Value (Your share of the grant value): $308,000 ($50,000)
Dates of Grant: 2023-2026
Role: (PI, CoPI) CoPI: contributed to the writing of the "Create American elm spectral image library" section and serve as one of the collaborators on this project.

Title of Grant: Evaluate Hyper-Spectral Imaging in Quantification of DON Toxin Levels in Small Grains in Virginia
Source of Grant: Virginia Small Grains Board
Total Dollar Value (Your share of the grant value): $10,000
Dates of Grant: 2021-2022
Role: (PI, CoPI) Contributed to data analysis, report, and proposal writing.

Presentations at Conferences (last 5 years)

Title: Integrating sensors and AI for precision plant disease management
Authors (put an asterisk on the presenter): **Wei, X.***. (**Invited Speaker**)
Name of Conference: 2025 Joint Meeting of the APS Pacific Division and Conference on Soilborne Plant Pathogens.
Location: Davis, CA
Date of Presentation: March 26, 2025

Title: Leveraging leaf-level hyper- and multispectral imaging and machine learning for plant disease assessment and resistance screening
Authors (put an asterisk on the presenter): **Wei, X.***, Zhang, J., Conrad, A., Flower, C.E., Pinchot, C.C., Hayes-Plazolles, Fei, S., and Jin, J
Name of Conference: 2024 North American Plant Phenotyping Network (NAPPN) Annual Conference
Location: West Lafayette, IN
Date of Presentation: February 13-15, 2024

Title: Leveraging leaf-level multispectral and hyperspectral imaging and machine learning for forest disease assessment
Authors (put an asterisk on the presenter): **Wei, X.***, Zhang, J., Conrad, A., Flower, C.E., Pinchot, C.C., Hayes-Plazolles, Fei, S., and Jin, J
Name of Conference: Plant Health 2023, the American Phytopathological Society (APS) Annual Meeting
Location: Denver, CO
Date of Presentation: August 12-16, 2023

Title: Leaf-level high-precision spectral and spatial imaging solutions for forest pathology studies
Authors (put an asterisk on the presenter): **Wei, X.***, Conrad, A.O., Fei, S., and Jin, J
Name of Conference: Purdue University Digital Forestry Retreat 2023
Location: West Lafayette, IN
Date of Presentation: August 1, 2023

Title: Accurate assessment of tree health status using leaf-level multispectral imaging
Authors (put an asterisk on the presenter): **Wei, X.***, Zhang, J., Conrad, A.O., Flower, C.E., Pinchot, C.C., Hayes-Plazolles, N., Niu, Z., Song, Z., Fei, S., and Jin, J
Name of Conference: Purdue University Digital Forestry Mini Symposium Spring 2023
Location: West Lafayette, IN
Date of Presentation: March 4, 2023

Title: Hyperspectral band selection for peanut stem rot detection
Authors (put an asterisk on the presenter): **Wei, X.***
Name of Conference: Introduction of Python and Machine Learning in Phytopathology workshop. American Phytopathological Society
Location: Online
Date of Presentation: November 9, 2022

Title: Disease detection in trees utilizing LeafSpec hyperspectral imaging technologies: Two case studies on thousand cankers disease of walnut and Dutch elm disease
Authors (put an asterisk on the presenter): **Wei, X.***, Conrad, A., Flower, C.E., Pinchot, C.C., Hayes-Plazolles, N., Tobin, K., Ginzel, M.D., Niu, Z., Song, Z., Bureetes, T., Fei, S., and Jin, J.
Name of Conference: Purdue University Digital Forestry Retreat & Grant Opening
Location: West Lafayette, IN
Date of Presentation: August 8, 2022

Title: Hyperspectral imaging for plant health monitoring
Authors (put an asterisk on the presenter): **Wei, X.***
Name of Conference: Purdue University Integrated Digital Forestry Initiative Virtual Seminar Series
Location: Online
Date of Presentation: January 27, 2022

Title: Identifying optimal wavelengths to detect peanut infection with *Athelia rolfsii* using a hyperspectral sensor and machine learning
Authors (put an asterisk on the presenter): **Wei, X.***, Johnson, M.A., Langston, D.B., Jr., Mehl, H.L., and Li, S.
Name of Conference: Plant Health 2021 online, annual meeting of the American Phytopathological

Society (APS)
Location: Online
Date of Presentation: August 2-6, 2021

Title: Comparison of standard and newly registered peanut fungicides against *Athelia rolfsii* through a laboratory bioassay using detached plant tissues
Authors (put an asterisk on the presenter): **Wei, X.***, Langston, D.B., Jr., and Mehl, H.L.
Name of Conference: The 53rd American Peanut Research and Education Society Annual Meeting
Location: Online
Date of Presentation: July 12-16, 2021.

Title: Exploring the scikit-learn machine learning library for hyperspectral band selection to detect stem rot of peanut
Authors (put an asterisk on the presenter): **Wei, X.***, Aguilera, M., Langston, D.B., Jr., Mehl, H.L., and Li, S.
Name of Conference: 2021 Joint MA-ASPB and University of Maryland Plant Virtual Symposium
Location: Online
Date of Presentation: May 27-28, 2021.

Title: Identification of sensor-based signatures of peanut infection with *Athelia rolfsii* using machine learning
Authors (put an asterisk on the presenter): **Wei, X.* (Selected Speaker)**, Aguilera, M., Li, S., Langston, D.B., Jr., and Mehl, H.L.
Name of Conference: The 19th I. E. Melhus Graduate Student Symposium. Plant Health 2020 online, annual meeting of the American Phytopathological Society
Location: Online
Date of Presentation: August 10-14, 2020.