

Yufeng Guan

Date of Birth: 30.08.1996

Nationality: Chinese

Phone: +48 575318399 | E-mail: yufgua@amu.edu.pl; yufengbynd@gmail.com

ORCID: <https://orcid.org/0000-0002-7120-3193>

ResearchGate: <https://www.researchgate.net/profile/Yufeng-Guan-5>

Current Position

Engineering and Technical Specialist

Department of Plant Ecophysiology | Adam Mickiewicz University

Uniwersytetu Poznańskiego 6, 61-614 Poznań

Education

Ph.D. in Biology, Adam Mickiewicz University, Poland (2020-2026)

M.Sc. in Horticulture, Poznan University of Life Sciences, Poland (2018-2020)

B.Sc. in Plant protection, Heilongjiang Agriculture University, China (2014-2018)

Research profile

Plant molecular biologist with 7 years of international research experience in plant stress signaling, chromatin regulation and plant-pathogen interactions. Specialized in nitric oxide (NO)-mediated epigenetic modulation, histone acetylation dynamics, and transcriptional control under hypoxia and biotic stress. Skilled in RNA-seq, ChIP-seq, functional genomics, and protein modification analysis, with strong computational and molecular biology proficiency. Demonstrated publication record in plant molecular physiology and active collaboration across European research institutes.

Research Skills

Molecular Biology & Physiology

- Hands on experience in plant cultivation, in-vitro culture system, phytopathogen maintenance, and plant-pathogen inoculation assays.
- Experienced in DNA/RNA extraction, PCR/qPCR/dPCR, molecular cloning, vector construction, and Arabidopsis floral-dip transformation.
- Proficient in protein and metabolite analysis, including Western blotting, ELISA, and enzyme activity assays.
- Skilled in designing and executing hypoxia-related experiments, including controlled hypoxia treatments, reoxygenation protocols, and real-time oxygen monitoring.
- Additional expertise in ChIP, mRNA-IP, S-nitrosylation assays (biotin-switch), protein

nitration detection, and histone modification analysis.

Gasotransmitter Detection & Quantification

- Experienced in detecting HNO and NO using fluorometric probes in plant tissues.
- Skilled in chemiluminescence-based NO quantification, including measurement of NO, NO₂⁻, and NO₃⁻ in plant tissues.
- Proficient with gasotransmitter donor/scavenger treatments (e.g., Angeli's salt for HNO; SNP/GSNO for NO; cPTIO and TXPTS as scavengers).

Bioinformatic Analysis

- Experienced with RNA-seq (QC, alignment, quantification, DE analysis) and ChIP-seq (peak calling, differential binding, motif analysis).
- Skilled in functional annotation (GO, KEGG, Pfam) and data visualization in R (ggplot2, tidyverse, ComplexHeatmap).
- Proficient in building reproducible pipelines on HPC clusters using SLURM and workflow managers.

Languages & Soft skills

Languages: English (Fluent), Chinese (Native), Polish (Basic).

Soft skills:

- Capacity to develop and write scientific projects and grant proposals
- Excellent scientific communication, including manuscript preparation and presentation skills
- Proven problem-solving and analytical thinking, especially in experimental design and data interpretation
- Effective collaboration and interdisciplinary teamwork in laboratory and bioinformatics settings

Publications

1. **Guan Y.**, Gajewska J., Floryszak-Wieczorek J., Tanwar U. K., Sobieszczuk-Nowicka E., & Arasimowicz-Jelonek M. (2024). Histone (de) acetylation in epigenetic regulation of Phytophthora pathobiology. **Molecular Plant Pathology**, 25(7), e13497.
2. **Guan Y.**, Gajewska J., Sobieszczuk-Nowicka E., Floryszak-Wieczorek J., Hartman S., & Arasimowicz-Jelonek M. (2024). The effect of nitrosative stress on histone H3 and H4 acetylation in Phytophthora infestans life cycle. **Plant Physiology and Biochemistry**, 216, 109129.
3. **Guan Y.**, Tanwar U. K., Sobieszczuk-Nowicka E., Floryszak-Wieczorek J., & Arasimowicz-Jelonek M. (2022). Comparative genomic analysis of the aldehyde dehydrogenase gene superfamily in Arabidopsis thaliana—searching for the functional key to hypoxia tolerance. **Frontiers in Plant Science**, 13, 1000024.

4. Stolarska E., Tanwar U. K., **Guan Y.**, Grabsztunowicz, M., Arasimowicz-Jelonek, M., Phanstiel IV, O., & Sobieszczuk-Nowicka, E. (2023). Genetic portrait of polyamine transporters in barley: insights in the regulation of leaf senescence. **Frontiers in Plant Science**, 14, 1194737.
5. Drozda A., Kurpisz B., **Guan Y.**, Arasimowicz-Jelonek M., Plich J., Jagodzick, P., ... & Floryszak-Wieczorek, J. (2022). Insights into the expression of DNA (de) methylation genes responsive to nitric oxide signaling in potato resistance to late blight disease. **Frontiers in Plant Science**, 13, 1033699.
6. Drozda A., Kurpisz B., Arasimowicz-Jelonek M., Kuźnicki D., Jagodzick P., **Guan Y.**, & Floryszak-Wieczorek, J. (2022). Nitric oxide implication in potato immunity to *Phytophthora infestans* via modifications of histone H3/H4 methylation patterns on defense genes. **International Journal of Molecular Sciences**, 23(7), 4051.
7. Yu G., Wei J., **Guan Y.**, Shao W., Fu W., Zhao Y., Sheng Y., & Yang D. (2018). First report of leaf spot on *Basella alba* caused by *Alternaria tenuissima* in China. **Plant Disease**, 102(12), 2647-2647.

Under review

1. **Guan Y.**, Kubala S., Gajewska J., Sobieszczuk-Nowicka E., Perlikowski D., Kosmala A., Floryszak-Wieczorek, J., Arasimowicz-Jelonek M. Genotype-specific transcriptional reprogramming of *Phytophthora infestans* by histone deacetylase PifHDAC3 under nitrosative environment. **IMA Fungus**

Conference reports

1. **Guan Y.**, Floryszak-Wieczorek J., Sobieszczuk-Nowicka E., Suarez AS., Hartman S., Arasimowicz-Jelonek M. Nitroxyl as a new regulator of hypoxia response in *Arabidopsis*. **10th Plant Nitric Oxide International Meeting**, Warsaw (Poland) 09-11/07/2025 (**Poster**)
2. **Guan Y.**, Floryszak-Wieczorek J., Sobieszczuk-Nowicka E., Arasimowicz-Jelonek M. Aldehyde dehydrogenase as a metabolic sensor of nitroxyl in *Arabidopsis*. **Plant Biology Europe 2025**, Budapest (Hungary) 25-28/06/2025 (**Poster**)
3. **Guan Y.**, Gajewska J., Sobieszczuk-Nowicka E., Floryszak-Wieczorek J., Hartman S., Arasimowicz-Jelonek M. Reactive nitrogen species are involved in *Phytophthora infestans* life cycle via modifications of histone H3 and H4 acetylation. **5th Epicatch meeting**, Bordeaux (France) 10-12.07.2024 (**Oral presentation**)
4. **Guan Y.**, Gajewska J., Floryszak-Wieczorek J., Sobieszczuk-Nowicka E., Arasimowicz-Jelonek M. Diversity and evolution of histone deacetylases in phytopathogenic *Phytophthora infestans*. **Epigenetic mechanisms of crop adaptation to climate change**, Sofia (Bulgaria) 30/05-01/06/2023. (**Poster**).
5. **Guan Y.**, Floryszak-Wieczorek J., Sobieszczuk-Nowicka E., Arasimowicz-Jelonek M. Aldehyde Dehydrogenase as a Metabolic Sensor of Nitroxyl in *Arabidopsis*. **11th Conference of the Polish Society of Experimental Plant Biology**, Poznań (Poland)

19 – 22/09/2023. **(Oral presentation)**.

6. **Guan Y.**, Gajewska J., Floryszak-Wieczorek J., Sobieszczuk-Nowicka E., Arasimowicz-Jelonek M. Różnorodność i ewolucja acetylotransferaz i deacetylaz histonowych w rodzaju *Phytophthora*. **National Scientific Conference on the occasion of the 10th anniversary of the Polish Mycological Society** Poznań (Poland) 26- 28/09/2022. **(Poster)**.
7. **Guan Y.**, Drozda A., Kuźnicki D., Kurpisz B., Arasimowicz-Jelonek M., Floryszak-Wieczorek J. Influence of nitric oxide on the expression patterns of mi482b and R3a genes in potato leaves (*Solanum tuberosum* L. 'Sarpo Mira'). **COMPAS: the future of interdisciplinary science**, Poznań (Poland) 22 – 24/09/2021. **(Poster)**.

Awards & Grants

- Excellence Initiative – Research University, Research Visiting Grant, Adam Mickiewicz University — Awarded twice (2023, 2025)
- FESPB (Federation of European Societies of Plant Biology) Support Grant — For attending the Plant Biology Europe Congress

International Research Visiting

University of Freiburg, Freiburg im Breisgau, Germany (Feb 2024; June 2025) under the supervision of Junior Professor Dr. Sjon Hartman.

Doctoral training

- Completed formal coursework in academic teaching, aquatic biodiversity in urban landscape, advanced microscopy techniques, and mass spectrometry and proteomics in biomedical research as part of the PhD program.
- Received hands-on training in RNA-seq, ChIP-seq, protein modification analysis, and computational data analysis.

Teaching Experience

Plant response to abiotic/biotic stresses, Adam Mickiewicz University – approximately 30 hours. Activities included an introduction to the experimental background and practical sessions examining physiological changes in plants under various abiotic and biotic stress conditions.