Yifan WANG (Evan)

yw7200@nyu.edu | (+1) 332-276-9884 | 256 w 108th st., 6C, New York, NY 10025

Research Interests

As a field-based evolutionary botanist with interdisciplinary training, I study how complex plant traits—ranging from floral specialization to twining behavior—evolve and diversify across angiosperms, along with their molecular and cellular underpinnings. My research integrates phylogenetics, EvoDevo, population genetics, morphology, and ecological context to investigate plant adaptation and diversification across diverse ecosystems.

Education

New York University (NYU), New York, USA 09/2023-01/2025
Master of Arts in Animal Studies Overall GPA: 3.726/4.0
Awards: Unsolicited Grant from Center for Environmental and Animal Protection (CEAP), NYU $1,342

Shanghai International Studies University (SISU), Shanghai, China 09/2018-06/2022
Bachelor of Science in Information Management and Information System Overall GPA: 3.83/4.0
Scholarships & Awards: SISU Top Scholarship (Sep. 2019, Mar. 2020 & Mar. 2021), First Prize Scholarship (Mar. 2019), Second Prize Scholarship (Sep. 2020); Excellent Individual of SISU, 2018-2019 Academic Year

Publications

[1] **Wang, Y.F.**, Liao, S., Guo, Z.R., Li, P., Huang, Y.S., Onyenedum, J.G., 2025. Phylogenomics of *Aristolochia* subg. *Siphisia* (Aristolochiaceae) reveals widespread incomplete lineage sorting and supports a novel pollinator-filtering hypothesis. Manuscript under review, ***Molecular Phylogenetics and Evolution***. Preprint available at ***bioRxiv***: https://doi.org/10.1101/2025.05.29.656634

[2] Guo, Z.R., **Wang, Y.F.**, Onyenedum, J.G., Li, J., 2025. *Aristolochia geantha* (Aristolochiaceae), a new species from Yunnan, China. ***Taiwania*** 70, 293–300. **(Cover Feature)** https://doi.org/10.6165/tai.2025.70.293

[3] **Wang, Y.F.**, Guo, Z.R., Landrein, S., Onyenedum, J.G., Liao, S., 2025. *Aristolochia zhuhaiensis*, a self-supporting new species of Aristolochiaceae from Guangdong, China and notes on *Aristolochia thwaitesii*. ***PhytoKeys*** 254, 61–76. https://doi.org/10.3897/phytokeys.254.139616

[4] Zhang, H.L., **Wang, Y.F.**, Guo, Z.R., Zhu, T., Yang, H.H., Yin, Z.J., 2024. *Aristolochia pulvinata*, a new species of Aristolochiaceae from Yunnan, Southwest China. ***Phytotaxa*** 675, 261–272. https://doi.org/10.11646/phytotaxa.675.3.5

Invited and Contributed Presentations

Botany 2025, Palm Spring, California 07/2025
- **Development and Structure III:** Twist and transcribe: unraveling the molecular basis of circumnutation-driven twining in *Phaseolus vulgaris*
- **Cooley Award Talks I:** Phylogenomics of *Aristolochia* subg. *Siphisia* (Aristolochiaceae) reveals widespread incomplete lineage sorting and supports a novel pollinator-filtering hypothesis

Invited Speaker, NYU Plant Lab Seminar, New York University, New York 03/2025
- High-resolution phylogenomics of *Aristolochia* subg. *Siphisia* (Aristolochiaceae) informs novel pollination strategy and evolutionary dynamics

Botany 2024, Grand Rapids, Michigan 06/2024
- **Systematics I: Monocots to Eurosids:** A phylogenetic analysis of the *Isotrema versicolor* complex, description of five new species, and a systematic overview of the genus *Isotrema*

Research Experience (Graduate)

Junior Lab Associate, Onyenedum Lab, New York University 09/2023-Present

Project 1: Phylogenomics and Evolution of *Aristolochia*
- **Fieldwork and Specimen Collection**: Conducted over nine independent field expeditions across China, Southeast Asia, and Central America. Collected 130+ voucher specimens and 80+ silica-dried tissues; discovered 15+ putative new species (across *Siphisia*, *Aristolochia*, *Asarum*, *Peperomia*), currently being described.
- **Molecular & Phylogenomic Work**: Extracted DNA and submitted 137 *Aristolochia* samples for genome skimming. Assembled 50+ chloroplast genomes and recovered diverse nuclear markers (SNPs, low-copy loci, Angiosperms353) using GetOrganelle, SPAdes, and custom HPC pipelines.
- **Taxonomy and Conservation**: Described five new species; assessed four as endangered and one as critically endangered under IUCN criteria, contributing to regional biodiversity documentation and conservation recommendations.

- **Collaborations and Networking**: Initiated and maintained collaborations with universities, research institutes, and botanical gardens, including NYBG (USA), KFBG (Hong Kong), SCBG and KIB (China), VNMNH (Vietnam), and CEFE–CNRS (France).
- **Lab Engagement**: Supported a collaborative and intellectually active lab culture through journal clubs, research presentations, and peer exchange.

Project 2: Transcriptomic Profiling and Twining motion Analysis of Twining in Common Bean (*Phaseolus vulgaris*)

- **Plant Material and RNA Extraction:** Maintain and catalog *Phaseolus* accessions in controlled growth chambers. Collected young stem tissues from 30 individuals during twining stages and extracted high-quality RNA samples.
- **Twining Quantification and Computational Modeling:** Developed a reproducible, computer vision–based Python/FIJI pipeline to extract stem curvature profiles and kinematic parameters. Quantified dynamic elongation zones and identified motor-active regions through spatial curvature analysis.
- **Transcriptomic Profiling:** Built a modular RNA-seq analysis pipeline for differential gene expression analysis across twining stages. Integrated quantification (featureCounts), DE analysis (DESeq2), followed by downstream GO term enrichment and KEGG pathway analysis.
- **Confocal Microscopy and 3D Reconstruction:** Performed modified Pseudo-Schiff propidium iodide (mPS-PI) staining followed by confocal microscopy to visualize stem tissues. Reconstructed 3D cell files and tissue volumes using OsiriX MD and FIJI (ImageJ) for quantitative analysis of cellular architecture and spatial organization.

Fieldwork Experience

Endemic Plant Survey in New Jersey Pine Barrens, Stonecrop Garden, New York, USA 05/2025

- Documented endemic angiosperms of the New Jersey Pine Barrens ecosystem for conservation and public education initiatives.

Wildlife Rescue Volunteer, Ningbo Wildlife Park, China 03/2020-07/2020

- Assisted in the rescue, rehabilitation, and release of CITES-listed species seized from the illegal pet trade, including Galápagos and Ploughshare tortoises and various raptors. Supported China's first successful Ploughshare tortoise hatching in captivity.

Rainforest Moth Diversity Program, Mt. Kinabalu, Sabah, Malaysia 08/2018

- Participated in a biodiversity survey in the Mt. Kinabalu Sanctuary; collected and curated 140+ moth specimens and contributed to ecological documentation.

Earlier Academic Research Projects (Undergraduate)

First Impression Matters: Exploring the Impact of Visual Cues on Crowdfunding Success 09/2021-02/2022

- Crawled data of 12,000 pictures and 1,100 videos from the kickstarter.com and applied MemNet (a deep learning model) to quantify the impact of each image in human visual perception as a standardized quantitative dataset.
- With the empirical results that both the quality of the title picture and the title video presence are positively associated with funding success, and the duration of the title video has an inverted U-shaped relationship with funding success

Leader in a Team of 3, Mathematical Contest in Modeling (MCM/ICM) 02/2021

- Honorable Mention in the Mathematical Contest in Modeling
- Built influence network models in music history using directed graphs; developed custom music similarity metrics and visualized genre transitions using rose diagrams.

Other Experience

Data Strategy Intern, Bosch (China) Investment, Shanghai, China 11/2021-05/2022

- Designed China's e-invoicing platform and co-developed data crawlers for SAP systems using Python.

Part-Time Assistant, Boston Consulting Group, Shanghai, China 05/2021-11/2021

- Conducted market forecasting and data modeling in Python; developed reusable scripts for data visualization and batch processing.

Part-Time Assistant, Roland Berger Management Consulting Company, Shanghai, China 05/2021-08/2021

- Automated extraction of biopharma consultation data using text-mining scripts.

Interests

Muay Thai, saxophone, calligraphy, horticulture, badminton