**Jeanmaire Molina**

**Dyson School of Arts & Sciences, Biology**

**Pace University**

**Contact Information**

Pace Email Address: [Jmolina2@pace.edu](mailto:Jmolina2@pace.edu)

Work/Home Phone number: (212) 346-1639

Google Scholar Profile: [Link to Profile](https://scholar.google.com/citations?user=J6tnbl8AAAAJ&hl=en)

**Education (Post-secondary degrees)**

* 2009 - PhD, Ecology & Evolution, Rutgers University-New Brunswick, NJ

**Academic Appointments**

* **2022 – Present** - Associate Professor, Department of Biology, Pace University, NYC- developed and taught undergraduate courses: Pharmacology/Bio346, Medicinal Botany/ Bio296D, Genetics/Bio231, General Biology series (Bio101/Bio102)
* **2011 – 2022** - Assistant to Associate Professor, Department of Biology, Long Island University-Brooklyn- developed and taught undergraduate courses: General Biology series, Ethnobotany, as well as graduate (MS) courses: Pharmacology and Medicinal Botany
* **2020 – 2022** - Adjunct Professor, Department of Biology, Kean University, Union, NJ- taught undergraduate courses in Introductory Biology and Plant Biology.
* **Summer 2013, 2015, 2023** - Visiting Professor, Institute of Biology, University of the Philippines, Diliman- designed and taught a graduate course on DNA barcoding and mentored graduate students in nanopore sequencing
* **2003 – 2008** - Teaching Assistant, Rutgers University-New Brunswick, NJ- taught undergraduate lab courses in General Biology and General Microbiology.
* **2003 – 2008** - Research Assistant, Rutgers University-New Brunswick, NJ- Worked on the systematics of Loganiaceae & Gentianaceae

**Other Professional Experience**

* **2009 – 2010** - Postdoctoral Scientist, New York University, NY- conducted research on the evolutionary genomics of Asian rice (*Oryza sativa*).
* **2001 – 2002** - Botany Research Associate, Center for Tropical Forest Science-Arnold Arboretum and Conservation International-Philippines- conducted taxonomic identification and floristic monitoring in various Philippine forest sites.
* **2001 – 2002** - Research Assistant/Scientific Writer, Research and Biotechnology Division, St. Luke’s Medical Center, Philippines- assisted in biomedical research and scientific writing.

**Professional Licensures & Certifications**

* **2025** - Congen2025 workshop (Recent Advances in Conservation Genetics), Namibia, Africa
* **2023** - Plant Tissue Culture/Plant Micropropagation Workshop, Plantcell Technology, Washington DC, USA
* **2020** - Certificate in Responsible Conduct of Research, Biomedical Researchers and Students Working with Human Subjects (online)
* **2019** - Plant Care Intensive Course and Propagation 101, Brooklyn Botanical Garden, NY, USA
* **2018** - NSF Bioscience Industry Fellowship Program (included boot camp training in sterile gowning, cell culture, cGMPs, HPLC, GC-MS, and various bioscience industry site visits). Various institutions in NC, USA
* **2013**- Medical Botany, 12 hrs, Continuing Adult Education. New York Botanical Garden, NY, USA
* **2010**-Perl I. Basics of Perl Programming. School of Continuing and Professional Studies, New York University, NY, USA
* **2009**- Summer Institute in Statistical Genetics, University of Washington, Seattle, WA, USA
* **2004**- International Field Biology Course, CTFS-AA, Lambir Hills National Park, Sarawak, Malaysia

**SCHOLARSHIP**

**Scholarly/Creative Interests**

* Conservation and evolutionary biology of endangered parasitic plants (e.g. Rafflesiaceae)
* DNA barcoding and ethnobotany of herbal medicines
* Community ecology of Philippine forests

**Scholarly Contributions**

**Peer-Reviewed Works**

* **Molina J.**, R. de Guzman, R. Abzalimov, W. Huang\*, A. Guruprasad\*, … W. Eaton\*, P. Yin\*, et al. 2025. *Microbes and metabolites of Tetrastigma: Deciphering host choice ecology for Rafflesia.* *Curr Plant Biology*. <https://www.sciencedirect.com/science/article/pii/S2214662825000246?via%3Dihub> \*coauthors from Pace University
* Wicaksono, A., Meitha, K., Wan, K. L., Mat Isa, M. N., Parikesit, A. A., & **Molina, J.** 2025. Hairpin in a haystack: In silico identification and characterization of plant-conserved microRNA in Rafflesiaceae. *Open Life Sciences* <https://pmc.ncbi.nlm.nih.gov/articles/PMC11773456/>
* **Molina J.,** R. de Guzman, A. Wicaksono, et al. (2024) The endophyte’s endophytes: the microbial partners of the endangered plant parasite Rafflesia speciosa (Rafflesiaceae) reveal clues about its cryptic biology and cues for cultivation, Journal of Plant Interactions, 19:1, <https://doi.org/10.1080/17429145.2024.2304221>
* **Molina J.,** A. Wicaksono, T. Michael et al. 2023. The seed transcriptome of Rafflesia reveals horizontal gene transfer and convergent evolution: implications for conserving the world's largest flower. *Plants, People & Planet* <https://doi.org/10.1002/ppp3.10370>.
* Molina J., Nikolic D., Jeevarathanam J.R., et al. (2022). Living with a giant, flowering parasite: metabolic differences between Tetrastigma loheri Gagnep. (Vitaceae) shoots uninfected and infected with Rafflesia (Rafflesiaceae) and potential applications for propagation*.* Planta, 255(4).
* Setubal R.B., Frasier C.L., Molina J., Torke B.M., Forzza R.C., Struwe L. (2021). A Toxic story: phylogeny and classification in Strychnos L. (Loganiaceae)*.* Systematic Botany, 46:639-655.
* Wicaksono A., Mursidawati S., Molina J. (2020). A plant within a plant: insights on the development of the Rafflesia endophyte within its host. Botanical Review, 87:233-242.
* Prasad M.A., Zolnik C., Molina J. (2019). Leveraging phytochemicals: the plant phylogeny predicts sources of novel antibacterial compounds. Future Science OA. https://doi.org/10.2144/fsoa-2018-0124.
* Molina J., Sherpa C., Ng J., Sonam T., Stuhr N. (2018). DNA barcoding of online herbal supplements: crowd-sourcing pharmacovigilance in high school. Open Life Sciences, 13:48-55.
* Guzman E., Molina J. (2018). The predictive utility of the plant phylogeny in identifying sources of cardiovascular drugs. Pharmaceutical Biology, 56:154-164.
* Molina J., McLaughlin W., Wallick K., et al. (2017). Ex situ propagation of Philippine Rafflesia in the United States: Challenges and prospects. Sibbaldia: the Journal of Botanic Garden Horticulture, 15:77-96.
* Alrashedy N., Molina J. (2016). The ethnobotany of psychoactive plant use: a phylogenetic perspective*.* PeerJ, 4:e2546. https://doi.org/10.7717/peerj.2546.
* Pedales R., Damatac II A., Limbo C., Marquez C., Navarro A.I., Molina J. (2016). DNA barcoding of Philippine herbal medicinal products*.* Journal of AOAC International, 99:1479-1489.
* Michel C.I., Meyer R.S., Taveras Y., Molina J. (2016). The nuclear internal transcribed spacer (ITS2) as a practical plant DNA barcode for herbal medicines*.* Journal of Applied Research on Medicinal and Aromatic Plants, 3:94-100.
* Xavier C.G., Molina J. (2016). Phylogeny of medicinal plants depicts cultural convergence among immigrant groups in New York City. Journal of Herbal Medicine, 6:1-11.
* Molina J., Hazzouri K.M., Nickrent D.L., et al. (2014). Possible loss of the chloroplast genome in the parasitic flowering plant Rafflesia lagascae (Rafflesiaceae). Molecular Biology and Evolution, 31:793-803.
* Molina J., Wen J., Struwe L. (2013). Systematics and biogeography of the non-viny grape relative Leea (Vitaceae). Botanical Journal of the Linnean Society, 171:354-376.
* Huang P., Molina J., Flowers J.M., et al. (2012). Phylogeography of Asian wild rice, Oryza rufipogon: A genome-wide view*.* Molecular Ecology, 21:4593-4604.
* Flowers J.M., Molina J., Rubinstein S., et al. (2011). Natural selection in gene-dense regions shapes the genomic pattern of polymorphism in wild and domesticated rice*.* Molecular Biology and Evolution, 29:675-687.
* Molina J., Sikora M., Garud N., Flowers J.M., et al. (2011). Molecular evidence for a single evolutionary origin of domesticated rice*.* Proceedings of the National Academy of Sciences USA, 108:8351-8356.
* Xie X., Molina J., Hernandez R., et al. (2011). Levels and patterns of nucleotide variation in domestication QTL regions on rice chromosome 3 suggest lineage-specific selection*.* PLoS ONE, 6(6):e20670.
* Mather K., Molina J., Flowers J., et al. (2010). Migration, isolation and hybridization in island crop populations: The case of Madagascar rice*.* Molecular Ecology, 19:4892-4905.
* Molina J. (2009). Floral biology of Philippine morphospecies of the grape relative Leea (Leeaceae). Plant Species Biology, 24:53-60.
* Molina J., Struwe L. (2009). Utility of secondary structure in phylogenetic reconstructions using nrDNA ITS sequences – an example from Potalieae (Gentianaceae: Asteridae). Systematic Botany, 34:414-428.
* Molina J., Struwe L. (2008). Revision of ring-gentians (Symbolanthus, Gentianaceae) from Bolivia, Ecuador, and Peru, with a first assessment of conservation status*.* Systematics and Biodiversity, 6:477-501.
* Molina J., Struwe L. (2004). Neuburgia novocaledonica, comb. nov. and the first record of domatia in the family Loganiaceae. Australian Journal of Systematic Botany, 17:399-406.

**Books**

* Co, L., J. La Frankie, D. Lagunzad, K. Pasion, H. Consunji, N. Bartolome, S. Yap, **J. Molina,** M. Tongco, U. Ferreras, S. Davies, and P. Ashton. 2006. Forest Trees of Palanan, Philippines: A Study in Population Ecology. University of the Philippines-Diliman, Center for Integrative and Development Studies.

**Book Chapters**

* **Molina J.** (2018). Phylogenetic analysis of traditional medicinal plants: discovering new drug sources from patterns of cultural convergence. In: McKenna, D. (ed.), Ethnopharmacologic Search for Psychoactive Drugs, 50 years of research. Synergetic Press, Santa Fe, NM.

**Work under Review (Accepted pending revision)**

* Vergara J\*., W. Huang\*, Z. Fliesen\*, J. Contreras\*, B. Hemmings-Larin\*, S.H. Park\*, A. Arnoldi\*, J. Feroz\*, N. Geffrard\*, J. Haddock\*, Y. Kamel\*, C. Lui\*, A. Murray\*, S. Musovic\*, D. Rivera\*, N. Samman\*, **J. Molina**.Accepted pending revision. Exploring the interface between plant diversity and culture: the phylogeny as a pharmacological and pedagogical tool cultivating plant appreciation in an undergraduate classroom. *EvoS Journal: Evolutionary Studies and Higher Education.* \*student coauthors from Pace University

**Work in Progress**

* Burger M, A. Wickasono… **J. Molina**. Do the world’s largest flowers (Rafflesiaceae) begin as plant galls? Evidence from dual transcriptome analysis of holoparasite and host (Manuscript in preparation, to be submitted to *Scientific Reports,* Feb 10, 2025).

**Grants/ Awards**

**Funded-In Progress**

* + *Ex Situ Propagation of Rafflesiaceae at USBG and In Situ Cultivation of Philippine Rafflesia*, Principal investigator, Cooperative Agreement with United States Botanic Garden, Jan 2025-Dec 2025, $52,500
  + 2022 – 2024- Various awards received from Pace -$4960: Classroom Based Undergraduate Research Experiences (CURE) Award; $1039: IDC award; $1000: Kenan award

**Completed**

* + *Ex Situ Propagation of Rafflesiaceae at USBG and In Situ Cultivation of Philippine Rafflesia*, Principal investigator, Cooperative Agreement with United States Botanic Garden, Sept 2023- Dec 2024, $45,150.
  + *Metabolites and microbes of Tetrastigma: the ecology of host choice in Rafflesia and potential applications in ex situ conservation*, Principal investigator, National Science Foundation #2204938/ 2346626, July 2022-Dec 2024, $279,612.
  + Collection and Study of Philippine Rafflesia*,* Principal investigator, United States Botanic Garden, 2014-2020, $43,829.
  + **Other miscellaneous awards received 2004-2014 –** total of $11K

**Invited Talks and Presentations**

* Guruprasad, A., Huang, W., Lipscomb, T., & **Molina, J.** (2024). Reviving the corpse flower: unraveling the enigmatic biology of the iconic plant parasiteRafflesia for ex situ conservation. Presented at the World Congress on Parasitic Plants, Nara, Japan, June 3-7, 2024. [Poster presentation]
* **Molina, J.** Reviving the corpse flower: unraveling the enigmatic biology of the iconic plant parasite *Rafflesia* for ex situ conservation. International Parasitic Plants Society Online Seminar [Dec. 6, 2023, Zoom oral presentation], also presented in Forest Research Institute of Malaysia (In-person oral presentation, July 26, 2024)
* **Molina, J.** (2023). Reviving the corpse flower: unraveling the enigmatic biology of the iconic plant parasite *Rafflesia* for ex situ conservation. Institute of Biology, University of the Philippines-Diliman, July 28, 2023. [Oral presentation, invited talk]
* Struwe, L., Alvestegui, B., Angell, B., Lubov, J., Adil, H., & **Molina, J.** (2023). The floral diversity of Symbolanthus (Gentianaceae) – adaptations and variations in neotropical ring-gentians. Presented at Botany 2023, Boise, ID, July 22-26, 2023. [Poster presentation]
* Diaz, D., Kirdiianova, A., & **Molina, J.** (2023). A symbiotic trifecta: the world’s largest parasitic flowers, their host plant, and the microbes that live within. Presented at the Yosemite Symbiosis Workshop, Yosemite, CA, May 6-7, 2023. [Poster presentation]
* Prasad, M., Zolnik, C., & **Molina, J.** (2022). Leveraging phytochemicals: the plant phylogeny predicts sources of novel antibacterial compounds. Presented at the Society of Economic Botany, University of West Indies, Kingston, Jamaica, May 29-June 2, 2022. [Poster presentation]
* **Molina, J.** (2021). *Reviving the corpse flower: Unraveling the enigmatic biology of the iconic plant parasite Rafflesia for ex situ conservation*. California Botanic Garden, May 6, 2021. [Zoom seminar, invited talk]
* **Molina, J.** (2017). Phylogenetic analysis of traditional medicinal plants: discovering new drug sources from patterns of cultural convergence. Ethnopharmacologic Search for Psychoactive Drugs II: 50 years of research, Tyringham Hall, Buckingham, England, June 6-8, 2017. [Oral presentation, invited talk]
* **Molina, J.** (2016). Rooted in the Philippines, branching out abroad: Utility of phylogenies in my research on Philippine plant diversity and herbal medicine. Presented at the Conference on Biodiversity & Chemical Biology of Marine and Terrestrial Life in the Philippine Region, Panglao Island, Bohol, Philippines, Oct. 16-20, 2016. [Oral presentation, invited talk]
* **Molina, J.** (2016). Exhuming the corpse flower: evolutionary genomics and reproductive biology of Philippine *Rafflesia*. Philippine National Museum, Manila, Philippines, Aug. 15, 2016. [Oral presentation, invited talk]
* **Molina, J.** (2015). Herbal Medicine Phylogenetics in Drug Discovery and Fraud Detection. Institute of Biology, University of the Philippines-Diliman, June 29, 2015. [Oral presentation, invited talk]
* **Molina, J.** (2013). Evolutionary Genomics of *Rafflesia.* Symposium on Marine Biology, Natural Products, and Neuroscience, Marine Science Institute, University of the Philippines-Diliman, June 10, 2013. [Oral presentation, invited talk]
* **Molina, J.** (2010). Asian Rice Origin: Will we ever know? Institute of Biology, University of the Philippines-Diliman, Nov. 27, 2010. [Oral presentation, invited talk]
* **Molina, J.** (2010). The collapse of Philippine biodiversity: A global catastrophe. New York Botanical Garden, Jan. 8, 2010. [Oral presentation, invited talk]
* **Molina, J.**, Flowers, J. M., Rubinstein, S., Clemenza, K., Bhambra, N., Huang, P., Schaal, B., & Purugganan, M. D. (2009). The evolutionary genomics of rice domestication. Presented at the Sixth International Rice Genetics Symposium, Manila, Philippines, Nov. 16-19, 2009. [Poster presentation]

**Media Contributions/Appearances**

* Proceedings of the National Academy of Sciences (PNAS): feature on my contributions to the genomic, ecological and evolutionary aspects of *Rafflesia* biology and our ongoing conservation strategies. Published on October 15, 2024. [Link](https://www.pnas.org/doi/10.1073/pnas.2418824121)
* **BusinessMirror**: Feature on my in situ propagation work of the critically endangered Rafflesia schandenbergiana in Bukidnon, Philippines. Published on August 18, 2024. [Link](https://www.pressreader.com/philippines/businessmirror/20240818/281668260294908?srsltid=AfmBOorfxKrU6uH9rsGzifrx_YbgfP3c0TmbyVVlHoJE1vqbrQ71g95e)
* Botany One [Link](https://botany.one/2023/10/unlocking-the-tiny-secrets-to-grow-the-worlds-largest-flowers/) published on October 5, 2023; Mongabay, [Link](https://news.mongabay.com/2023/07/philippines-research-offers-hope-for-conserving-enigmatic-rafflesia-plants/), published on July 14, 2023; FlipScience [Link](https://www.flipscience.ph/plants-and-animals/rafflesia-conservation-philippines/) published on April 5, 2023: various articles providing a historical perspective on *Rafflesia* research in the Philippines and conservation implications of our study on decoding the *Rafflesia* seed transcriptome
* Scientific American: Article discussing the ecological significance and host interactions of *Rafflesia*, highlighting its unique biology and conservation challenges. Published on March 16, 2022. [Link](https://www.scientificamerican.com/article/giant-rotten-smelling-parasite-flower-rafflesia-evokes-host-defenses/)
* National Geographic: Article exploring the challenges of cultivating the rare and parasitic *Rafflesia* flower, emphasizing its dependency on the *Tetrastigma* vine, threats from habitat loss, and conservation efforts. Published on December 20, 2021. [Link](https://www.nationalgeographic.com/environment/article/cultivating-the-worlds-largest-stinkiest-flower-is-no-small-task)
* Discover Magazine: Article exploring the ecological and evolutionary significance of *Rafflesia*, focusing on its unique characteristics and conservation challenges. Published on April 30, 2021. [Link](https://www.discovermagazine.com/planet-earth/whats-the-big-stink-about-corpse-flowers)
* Quanta Magazine: Article highlighting the genetic research on *Rafflesia*, focusing on its unique evolutionary adaptations. Published on April 21, 2021. [Link](https://www.quantamagazine.org/dna-of-giant-corpse-flower-parasite-surprises-biologists-20210421/)
* Science Magazine: Brief feature highlighting research on *Rafflesia lagascae*, a parasitic plant, emphasizing the evolutionary and genetic implications of its unique biology. Published on April 15, 2014. [Link](https://www.science.org/content/article/scienceshot-when-plant-no-longer-plant)
* GMA News: Feature article and video about conservation efforts to save *Rafflesia*, the world’s largest flower, led by Molina and calling for public support. Published on June 15, 2014. [Link](https://www.gmanetwork.com/news/scitech/science/364512/pinay-scientist-needs-your-help-to-save-the-world-s-largest-flower/story/)

# TEACHING

**Courses Taught** (since I joined Pace University, Sept 2022)

* **BIO 101/102: General Biology**
  + Semesters Taught: Fall 2022, 2024/ Spring 2024, Fall 2024
  + 2-semester series of general biology covering fundamental biological principles, including cell biology, genetics, evolution, and ecology for undergraduate students.
* **BIO 296d: Medicinal Botany**
  + Semester Taught: Fall 2023
  + Elective course that explores the medicinal properties of plants, their chemical compositions, and applications in pharmacology. Includes hands-on identification and analysis of medicinal plants.
* **BIO 231: Genetics**
  + Semester Taught: Fall 2023
  + Explores the principles of heredity, gene structure and function, genetic variation, and the molecular mechanisms of inheritance in both prokaryotic and eukaryotic organisms.
* **Bio 346: Pharmacology**
  + Semester Taught: Spring 2023
  + Elective course that examines the mechanisms of drug action and interactions

**Students Mentored and/or Student Collaborators**

**Undergraduate Students (Pace students)**

* Nicholas Samman (BS Biology, Fall 2024). Capstone course (BIO 480). Title: Characterization of the root bacterial microbiome of the mycoheterotroph *Monotropa uniflora* (Ghost Pipe, Ericaceae) using nanopore sequencing technology
* Gianna Bryant (BS Biology, Fall 2024). Capstone course (BIO 480). Title: Genomic comparison of mycoheterotrophic *Monotropa uniflora* (Ericaceae) and its photosynthetic relative *Arctostaphylos bakeri*: insights into divergent genomic adaptations
* Wenkai Huang (BS Education, major in Bio, Fall 2024). Honors thesis title: The bacterial symbionts of the parasitic plant *Rafflesia—*microscopic partners for conserving the world’s largest flower
* Anastasiia Kirdiianova (BS Behavioral Neuroscience), mentored on *Rafflesia* research through the Provost’s Student-Faculty Undergraduate Research Award, supporting her work in Summer 2023 and Summer 2024.
* Danny Miller (BS Biology, Fall 2023-Spring 2024). Capstone course (BIO 480/481). Title: Nanopore-based DNA barcoding of herbal medicinal products reveals plant ingredients not declared on the label (in press, *Transactions* 2025 issue, Pace Univ. press)
* Yasmeen Kamel (BS Biology, Spring 2024). Independent Research (BIO 395). Title: Exploring phylogenetic patterns in medicinal plants with dermatological applications: implications for drug discovery
* Jaisha Feroz (BS Biology, Spring 2024). Independent Research (BIO 395). Title: Clinically approved anti-cancer natural products: a phylogenetic perspective
* Thomas Lipscomb (BS Biology, Spring 2024). Capstone course (BIO 480). Title: Nothing is ever easy with Rafflesiaceae: from multiple failed rna extraction and seed gene expression experiments to successful Nanopore cDNA-sequencing runs (finally)!
* Sara Musovic (BS Biology, Spring 2024). Independent Research (BIO 395). Title: The bacterial symbionts of the parasitic plant *Rafflesia—*microscopic partners for conserving the world’s largest flower?
* Josh Vergara (BS Biology, Fall 2023). Capstone course (BIO 480). Title: Promoting pharmacovigilance: DNA barcoding with nanopore sequencing detects contamination in multi-species herbal medicinal products
* Denia Diaz (BS Behavioral Neuroscience, Spring 2023). Capstone course (BIO 480). Title: Unveiling the microbes of the world’s largest flowers
* Tarika Arjune (BS Biology, Spring 2023). Independent Research (BIO 395). Title: Phylogenetic patterns of medicinal plants used in the treatment of infectious diseases

**Graduate (MS) Students (mentored at Long Island Univ.-Brooklyn/LIU)**

* Shaimaa Saad (MSc Biology, Summer 2023). Thesis: *Pharmaceuticals from natural products: The utility of the phylogeny for bioprospecting and drug discovery*.
* Maddu Venkatasivasankar (MSc Biology, Summer 2023). Thesis: *Reconstructing the germination pathway from the Rafflesia seed transcriptome*.
* Feruza Karnitskiy (MSc Biology, Summer 2023). Thesis: *Characterization of the mycobiome of Rafflesia seeds: their potential ecological roles and applications in Rafflesia propagation and conservation*.
* Brian Tomek (MSc Biology, Jan 2023). Thesis: *Understanding the Development of Rafflesia using a transcriptomic study of seed and flower bud in comparison to Arabidopsis thaliana*.
* Katherine Veras (MSc Biology, Jan 2023). Thesis: *The host phylogeny of holoparasites—evolutionary patterns in hosts and implications in host choice*.
* Pravalika Peravali (MSc Biology, Fall 2020). Thesis: *The plant phylogeny identifies new sources of plant natural products with pharmacological potential in respiratory diseases including SARS cov-2*.
* Jashvanthraaj Jeevarathanam (MSc Biology, Spring 2020). Thesis: *How does Rafflesia parasitism affect its host: Metabolite profiling of infected and non-infected host vines using LC-MS*.
* Akshay Gutha Ravichandran (MSc Biology, Fall 2019). Thesis: *When is a plant no longer a plant? The quest for the elusive plastid genome in the parasitic flowering plant Rafflesia*.
* Ming Alexander (MSc Biology, Fall 2018). Thesis: *New drug sources from plants for diseases of the digestive system: an example of evolutionary pharmacology*.
* Malini Prasad (MSc Biology, Spring 2018). Thesis: *Phylogenetic analysis of plants with antibacterial activity reveals certain plant families relevant for antibiotic drug discovery*.
* Emily Guzman (MSc Biology, Fall 2017). Thesis: *Potential new sources of cardiovascular drugs from phylogenetic and pharmacological analyses of plants with traditional medicinal uses*.
* Usman Sheikh (MSc Biology, Summer 2017). Thesis: *Medicinal phytochemicals extracted from plants but co-produced with symbiotic fungal endophytes: is there phylogenetic structure?*.
* Badr Aljuaid (MSc Biology, Spring 2017). Thesis: *Utility of plastid barcodes in delimiting tree species in the Palanan Forest Dynamics Plot*.
* Nicole Stuhr (MSc Biology, Spring 2017). Thesis: *Whole genome sequencing of another Rafflesia species using semiconductor sequencing technology: is the plastid genome really absent?*.
* Nashmiah Alrashedy (MSc Biology, Spring 2016). Thesis: *Ethnobotany of psychoactive plant use: a phylogenetic perspective*.
* Maryam Alshamrani (MSc Biology, Spring 2016). Thesis: *An eye for an eye: phylogenetic evaluation of the medicinal uses of plants with “healing signatures”*.
* Eman Asiri (MSc Biology, Spring 2016). Thesis: *The phylogeny of anticancer plants reveals different mechanisms of action among confamilial species*.
* Sharday Weaver (MSc Biology, Spring 2015). Thesis: *Origin of symbiosis in the parasitic Rafflesiaceae: insights from molecular dating of horizontally transferred genes from its host family, Vitaceae*.
* Camilla Xavier (MSc Biology, Spring 2015). Thesis: *Phylogeny of medicinal plants depicts cultural convergence among immigrant groups in New York City*.
* Claire-Iphanise Michel (MSc Biology, Summer 2014). Thesis: *DNA barcoding of herbal medicines: the nuclear internal transcribed spacer 2 (ITS2) as a practical solution*.

**High School Students (Urban Barcode Research Program)**

* Mentored 16 high school students through the Urban Barcode Research Program (sponsored by Cold Spring Harbor Laboratories), a science education initiative engaging students in biodiversity research. Mentorship dates: Fall 2016–present.

**Course Evaluations**

I have consistently received excellent student evaluations, with students highlighting my clarity, passion for teaching, and dedication to student success. Across courses, my average instructor rating is **4.78/5**, demonstrating the effectiveness of my teaching philosophy.

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| --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Enrollment** | **Average Rating (5.0)** | **Least Valuable Highlights** | **Most Valuable Highlights** |
| **BIO-101 (Lecture)** | General Biology I | 55 (F22), 75 (F24) | 4.74, 4.34 | Slides lacked detail; some found pacing too fast. | Passionate teaching, clear explanations, and incorporation of research. |
| **BIO-101 (Lab)** | General Biology I | 14 (F22), 17 (F24) | 4.66, 4.45 | Some found pre-lab explanations repetitive or too long. | Clear instructions, supportive feedback, and flexibility with deadlines. |
| **BIO-102 (Lab)** | General Biology II | 18 (Sp24), 19 (Sp24) | 4.86, 4.93 | Minor technical challenges with R Studio and timing of lab materials. | Supportive and patient teaching style with engaging activities and clear instructions. |
| **BIO-102 (Lecture)** | General Biology II | 98 (Sp24), 31 (F24) | 4.60, 4.95 | Some content repetition; slow lecture pacing at times. | Engaging teaching with Kahoot reviews, clear slides, and study guides. |
| **BIO-346** | Pharmacology | 19 (Sp23) | 4.76 | No significant issues noted. | Knowledgeable and passionate teaching with real-world applications, particularly medicinal plants. |
| **BIO-231 (Lecture)** | Genetics | 62 (F23) | 4.75 | Some found slides overly detailed or disorganized; pacing occasionally slow. | Clear explanations, engaging visuals, and encouragement for student success. |
| **BIO-296D (Lecture)** | Medicinal Botany | 16 (F23) | 4.92 | No significant issues noted. | Enthusiastic teaching, integration of research, and creative methods such as field trips and guest speakers. |
| **BIO-296D (Lab)** | Medicinal Botany | 16 (F23) | 4.91 | Occasional digressions into tangential topics. | Hands-on and engaging teaching with effective use of props and materials. |
| **BIO-480** | Research in Biology | 2 (F23), 2 (F24) | 5 | No significant issues noted. | Detailed instructions and thorough guidance, fostering confidence in research methods. |
| **BIO-395** | Independent Study | 3 (Sp24) | 5 | No significant issues noted. | Stress-free and highly supportive learning environment with a focus on student success. |

**SERVICE, LEADERSHIP, AND PROFESSIONAL DEVELOPMENT**

(since I joined Pace)

**Internal Service or Leadership**

**Department Level**

* Spring 2023 – Present: Organizes Biology Poster Day events
* Fall 2024: Bio101 course coordinator
* Fall 2022, Spring 2024, Fall 2024: Peer observation and evaluation of adjunct faculty
* Fall 2023 – Fall 2024: Mentored and employed 5 Pace students through NSF-funded research opportunities
* Spring 2024: Invited/organized guest lecture by NYU professor Dr. Purugganan

**University Level**

* October 2023 – Present: Faculty Advisor, Q-STEM student club
* Spring 2023, Fall 2024: mentored 3 honor students for their theses, received “YES I Make It Happen Recognition”
* November 2023: Organized “Wellness Wednesday” event, invited herbalist for lecture/workshop, received “YES I Make It Happen Recognition”
* Fall 2023: Assisted in coordinating CSTEP program
* Spring 2023: Mentor, Postdoctoral Mentoring Program, received “YES I Make It Happen Recognition”
* 2023: Collaborated with faculty on Data Science Badge Proposal
* October 2022: Participated in Open House event representing the Biology Department

**External Service or Leadership**

**International/National**

* 2022 – Present: Served as a reviewer for journals including BMC Biology and Plants, People & Planet

**Regional/State/Local**

* 2016 – Present: Mentor for the Urban Barcode Research Program, sponsored by Cold Spring Harbor Laboratories

**Professional Development**

* January 2025: Attended Congen2025 (Recent Advances in Conservation Genetics, Namibia)
* September 2023: Attended Plant Tissue Culture/Plant Micropropagation Workshop (Washington DC, USA)

**Memberships**

* **Ongoing**: Member, International Parasitic Plants Society

**Awards and Nominations**

* **Spring 2023, Fall 2023, Fall 2024**: "YES I Make It Happen Recognition," awarded for postdoc mentoring program participation, organizing Wellness Wednesday, and mentoring honor students