

# Jeanmaire E. Molina

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## PROFESSIONAL PREPARATION

- 2003-2009      **RUTGERS UNIVERSITY, NJ, USA**  
PhD, Ecology & Evolution  
*Dissertation:* Evolution, pollination biology, and biogeography of the grape relative *Leea* (Leeaceae, Vitales)
- 1997-2001      **UNIVERSITY OF THE PHILIPPINES  
DILIMAN, QUEZON CITY, PHILIPPINES**  
Bachelor of Science Degree in Biology  
*Thesis title:* Expression and purification of the recombinant dengue serotype-3 nonstructural fusion protein in *Escherichia coli*

## APPOINTMENTS

- July 2016 – Present      **Research Associate**  
*Philippine National Museum*
- Jan. 2011 – Present      **Assistant Professor**  
*Department of Biology, Long Island University-Brooklyn*  
(Courses taught/designed: General Biology, Ethnobotany, Medicinal Botany, tutorial on next generation sequencing using the Ion PGM))
- Jan. 2011 – Present      **Visiting Research Scientist**  
*Center for Genomics and Systems Biology, New York University*
- June 2013, June 2015      **Visiting Professor**  
*Institute of Biology, University of the Philippines, Diliman, Philippines*
- Jan. 2009 – Dec. 2010      **Postdoctoral Scientist (Rice Evolutionary Genomics)**  
*Dr. Michael Purugganan's Lab, New York University*
- Dec. 2003 – 2008      **Research assistant (Plant Systematics)**  
*Dr. Lena Struwe's Lab, Rutgers University*
- Aug. 2003 – Dec. 2008      **Teaching Assistant (General Biology, Concepts in Biology, General Microbiology)**  
*Rutgers University*
- Jun – Aug. 2003      **Botany Research Associate**
- Nov. 2001– Jun 2002      *Palanan Forest Dynamics Plot (PFDP), Philippines*  
*Center for Tropical Forest Science-Arnold Arboretum (CTFS-AA) and*  
*Conservation International (CI)-Philippines*
- Jun 2001– Jan. 2002      **Research Assistant/ Scientific Writer**  
*Research and Biotechnology Division (RBD),*  
*St. Luke's Medical Center, Philippines*

## SPECIAL TRAINING

- Ion Torrent Personal Genome Machine (next generation sequencing) training. March 8-9, 2016. LIU-Brooklyn.
- Phylogenomics symposium and software school. June 19-20, 2014. Raleigh Convention Center, Raleigh, NC.
- iPLANT Workshop, bioinformatics Tools for Plant Science. July 28, 2013. Hilton-Riverside, New Orleans, LA.

- Medical Botany, 12 hrs, Continuing Adult Education. New York Botanical Garden, NY, USA (Spring 2013)
- Perl I. Basics of Perl Programming. School of Continuing and Professional Studies, New York University, NY, USA (January-May 2010)
- Summer Institute in Statistical Genetics, University of Washington, Seattle, Washington, USA (June-July 2009)
- International Field Biology Course, CTFS-AA, Lambir Hills National Park, Sarawak, Malaysia (July 15-Aug. 15, 2004)

## SKILLS

- Knowledge of plant taxonomic identification (Philippine and Northeast US flora)
- Proficient in bioinformatics/phylogenetics software such as BEAST, PAUP, MrBayes, Geneious, MEGA, R

## GRANTS/AWARDS

- Collection and Study of Philippine *Rafflesia*, US Botanic Garden, 2014-2017 (\$26,697)
- Visiting Professorship Grant, University of the Philippines-Diliman, June 2013 and June 2015 (\$4000)
- Professional Development Fund, Long Island University, 2014 (\$2000)
- ASPB's Women Young Investigator Travel Award, 2014 (\$1000)
- DNA Barcoding of Trees in the Palanan Forest Dynamics Plot (PFDP), 2011, Smithsonian Institution (\$2000)
- Systematics Research Fund, The Linnean Society of London, 2007 (£735)
- Academic Excellence Award, Rutgers Dept. of Ecology, Evolution & Natural Resources, 2006 (\$1000)
- Annie's Homegrown Environmental Scholarship, 2006 (\$1000)
- J. and J. Ruinen Fellowship in Tropical Biology and the Center for Tropical Forest Science-Arnold Arboretum Asia Program of Harvard University, 2005 (\$2700)
- Graduate School of New Brunswick, Rutgers University, 2004 (\$1000)

## EXTERNAL REVIEWER

Systematic Botany, Cladistics, Molecular Ecology, Molecular Biology and Evolution, International Journal of Philippine Science & Technology (editorial board member, formerly Philippine Science Letters), Molecular Phylogenetics and Evolution, Genome Biology and Evolution

## PROFESSIONAL SOCIETIES

Jan. 2017–present. Member. European Society of Evolutionary Biology

Dec. 2013–present. Editorial Board member, Philippine Science Letters (formerly International Journal of Philippine Science & technology)

Feb. 2008–present. Member. Philippine Native Plants Conservation Society, Inc. (PNPCSI)

June 2003–present. Member/Researcher. Center for Tropical Forest Science.

## PUBLICATIONS

Alrashedy N, **Molina J.** 2016. The ethnobotany of psychoactive plant use: a phylogenetic perspective. *PeerJ*.

Pedales R, Damatac II A, Limbo C, Marquez C, Navarro AI, **Molina J.** 2016. DNA barcoding of Philippine herbal medicinal products. *Journal of AOAC International*.

Michel CI, Meyer RS, 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, CG, **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 KM, Nickrent DL, Matthew G, Meyer RS, Pentony MM, Flowers JM, Pelsler P, Barcelona J, Inovejas SA, Uy I, Yuan W, Wilkins O, Michel C, LockLear S, Concepcion GP, Purugganan MD. 2014. Possible loss of the chloroplast genome in the parasitic flowering plant *Rafflesia lagascae* (Rafflesiaceae). *Molecular Biology and Evolution*. doi:10.1093/molbev/msu051

**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 JM, Rubinstein S, Jackson S, Purugganan MD, Schaal B. 2012. Phylogeography of Asian wild rice, *Oryza rufipogon*: A genome wide view. *Molecular Ecology*. doi: 10.1111/j.1365-294X.2012.05625.x
- Flowers, JM, **Molina J**, Rubinstein S, Huang Pu, Schaal BA, Purugganan MD. 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 JM, Rubinstein S, Reynolds A, Huang P, Jackson S, Schaal BA, Bustamante CD, Boyko AR, Purugganan MD. 2011. Molecular evidence for a single evolutionary origin of domesticated rice. *Proceedings of the National Academy of Sciences USA* 108:8351-8356. (\*Equal authorship)
- Xie X, **Molina J**, Hernandez R, Reynolds A, Boyko AR, Bustamante CD, Purugganan MD. 2011. Levels and patterns of nucleotide variation in domestication QTL regions on rice chromosome 3 suggest lineage-specific selection. *PLoS ONE* 6(6): e20670. doi:10.1371/journal.pone.0020670
- K. Mather\*, **J. Molina\***, J. Flowers, S. Rubinstein, B. Rauh, A. Lawton-Rauh, A. Caicedo, K. L. McNally and M. Purugganan. 2010. Migration, isolation and hybridization in island crop populations: The case of Madagascar rice. *Molecular Ecology* 19: 4892-4905. (\*Equal authorship).
- Molina, J.** 2009. Floral biology of Philippine morphospecies of the grape relative *Leea* (Leeaceae). *Plant Species Biology* 24: 53-60.
- Molina, J.** and L. Struwe. 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.** and L. Struwe. 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.
- 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*. Center for Integrative and Development Studies, University of the Philippines-Diliman, Philippines.
- Molina, J.** and L. Struwe. 2004. *Neuburgia novocaledonica*, comb. nov. and the first record of domatia in the family Loganiaceae. *Australian Journal of Systematic Botany* 17: 399-406.
- Co, L., D. Lagunzad, J. LaFrankie, N. Bartolome, **J. Molina**, S. Yap, H. Garcia, J. Bautista, E. Gumpal, R. Arano, and S. Davies. 2004. Palanan Forest Dynamics Plot, Philippines in: E.C. Losos & E.G. Leigh, Jr. (eds.). *Tropical Forest Diversity and Dynamism: Findings from a Large-Scale Plot Network*, pp. 574-584. University of Chicago Press, USA.
- Co, L., N. Bartolome, **J. Molina**, and S. Yap. 2003. *Pictorial Guide to the Tree and Shrub Flora of the Palanan Forest Dynamics Plot and Vicinity, Northern Sierra Madre Natural Park*. Published by Conservation International and the

## MANUSCRIPTS IN PREPARATION

- Molina, J.** In prep. Phylogenetic analysis of traditional medicinal plants: discovering new drugs from patterns of cultural convergence”, chapter within the symposium publication for ESPD (Ethnopharmacologic Search for Psychoactive Drugs, [www.espd50.com](http://www.espd50.com), for submission July 2017)
- Sherpa, C. Ng, J., Sonam, T., Stuhr, N. and **J. Molina**. In prep. Taxonomic authentication of ethnic herbal products sold by a major online retailer through DNA barcoding of the internal transcribed spacer sequence (ITS2) (in-prep for submission July 2017 to International Journal of Science Education)
- Molina, J.** Yap, S., Aljuaid, B., Erickson, D., Kress, J., and S. Davies. In prep. Application of DNA barcodes for taxonomic identification of tree species within the Palanan Forest Dynamics Plot (in-prep for submission Aug 2017)

## PRESENTATIONS

- Molina, J.** Phylogenetic analysis of traditional medicinal plants: discovering new drug sources from patterns of cultural convergence [oral presentation]. Invited talk. Ethnopharmacologic Search for Psychoactive Drugs II: 50 years of research. [www.espd50.com](http://www.espd50.com). June 6-8, 2017. Tyringham Hall, Buckingham, England.
- Molina, J.** Rooted in the Philippines, branching out abroad: Utility of phylogenies in my research on Philippine plant diversity and herbal medicine [oral presentation]. Invited talk. Conference on Biodiversity & Chemical Biology of Marine and Terrestrial Life in the Philippine Region. Oct. 16-20, 2016. Panglao Island, Bohol, Philippines
- Molina, J.** Exhuming the corpse flower: evolutionary genomics and reproductive biology of Philippine *Rafflesia* [Oral presentation]. Invited Talk. Aug. 15, 2016. Philippine National Museum.
- Molina, J.** Herbal Medicine Phylogenetics in Drug Discovery and Fraud Detection [Oral presentation]. Invited Talk. June 29,

2015. Institute of Biology, University of the Philippines.
- Molina, J.** (presenting author) and M.D. Purugganan. Possible loss of the chloroplast genome in the parasitic flowering plant, *Rafflesia* [Poster presentation]. American Society of Plant Biologists, July 12-16, 2013. Portland, Oregon.
- Molina, J.** Tracing the Evolutionary Origin of Asian Rice [Oral Presentation]. Invited Talk. July 2, 2013. Natural Science Research Institute, University of the Philippines-Diliman.
- Molina, J.** Exhuming the Corpse Flower: Evolutionary Genomics of the Plant Parasite *Rafflesia* [Oral Presentation]. Invited Talk. June 17, 2013. Institute of Biology, University of the Philippines-Diliman.
- Molina, J.** Evolutionary Genomics of *Rafflesia* [Oral Presentation]. June 10, 2013. Symposium on Marine Biology, Natural Products, and Neuroscience. Marine Science Institute, University of the Philippines-Diliman.
- Molina, J.** Exhuming the Corpse Flower: What can *Rafflesia*'s Genome Tell us? [Oral Presentation]. April 29, 2013. Long Island University-Brooklyn, USA.
- Molina, J.** Exhuming the Corpse Flower: What can *Rafflesia*'s Genome Tell us? [Oral Presentation]. Invited Talk. Feb. 26, 2013. Empire State College-State University of New York.
- Molina J.** Asian Rice Origin: Will we ever know? [Oral Presentation]. Nov. 27, 2010. Institute of Biology, University of the Philippines-Diliman, Philippines.
- Molina, J.** (presenting author), J.M. Flowers, S. Rubinstein, K. Clemenza, N. Bhambra, P. Huang, B. Schaal, and M.D. Purugganan. Identifying candidate domestication genes for rice crop improvement [Poster presentation]. Tropical biodiversity: surviving the food, energy and climate crisis. July 20-24, 2010. Bali, Indonesia.
- Molina, J.** Phylogeny and biogeography of Leeaceae (Vitales): Laurasian tertiary dispersals to Gondwanan continents [Poster presentation]. Frontiers in Plant Systematics. July 7-9, 2010. Beijing, China.
- Molina, J.** The collapse of Philippine biodiversity: A global catastrophe [Oral presentation]. Invited talk. Jan. 8, 2010. New York Botanical Garden.
- Molina, J.** (presenting author), J.M. Flowers, S. Rubinstein, K. Clemenza, N. Bhambra, P. Huang, B. Schaal, and M.D. Purugganan. The evolutionary genomics of rice domestication [Poster presentation]. Sixth International Rice Genetics Symposium. Nov. 16-19, 2009. Manila, Philippines.
- Molina, J.** Phylogeny and floral biology of *Leea* [Oral presentation]. Rutgers- Penn- Princeton Graduate Student Conference. Mar. 30, 2007, Rutgers University, NJ.
- Molina, J.**, L. Struwe (presenting author), and E. Green. Phenology and pollination of the ancestral grape relative *Leea* (Leeaceae/Vitaceae) [Poster presentation]. Botany Conference. July 28-Aug. 2, 2006. California State University-Chico, CA.
- Molina, J.** (presenting author) and L. Struwe. The phylogeny and floral ecology of *Leeaceae* [Oral presentation]. Northeast Ecology and Evolution Conference 2005, Penn State University, PA.

## COLLABORATORS & OTHER AFFILIATIONS

### (i) Collaborators

- Center for Tropical Forest Science, Smithsonian Institution, Washington, DC
- US Botanic Garden, Washington, DC
- Botany Division, Philippine National Museum
- Dr. M. Purugganan, Center for Genomics and System Biology, New York University

### (ii) Students advised/currently advised

- Current graduate adviser to Emily Guzman, Malini Prasad, Rabe Siby, Usman Sheikh (MSc students, LIU-Brooklyn, Fall 2017-Spring 2018)
- Mentor to 3 Brooklyn Tech high school students sponsored by the Urban Barcode Research Program of Cold Spring Harbor Laboratories
- Former graduate adviser to Nicole Stuhr, Badr Aljuaid, Nashmiah Alrashedy, Maryam Alshamrani, Eman Asiri, Sharday Weaver, Camilla Xavier, Claire-Iphanise Michel (MSc students, LIU-Brooklyn, Fall 2013-Spring 2017).

## REFERENCES

**Dr. Michael Purugganan**

Professor and Dean of Science  
Center for Genomics and Systems Biology  
New York University, NY, USA  
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**Dr. Lena Struwe**

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Dept. of Ecology, Evolution & Natural Resources  
Rutgers University, NJ, USA  
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**Dr. Ari Novy**

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United States Botanic Garden  
Washington, DC, USA  
Tel: (202) 225-6670  
[anovy@aoc.gov](mailto:anovy@aoc.gov)

**Dr. Joseph Morin**

Chairman  
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Long Island University-Brooklyn  
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