

# JESÚS MARTÍNEZ-GÓMEZ

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## EDUCATION

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<b>Cornell University — Ithaca, NY</b> Ph.D., Section of Plant Biology	2018 - May 2022
<b>University of California (UC) — Berkeley, CA</b> Ph.D. Student, Department of Integrative Biology	2016 - 2018
<b>University of Washington (UW) — Seattle, WA</b> B.S. Molecular, Cellular, and Developmental Biology	2012 - 2016

## RESEARCH APPOINTMENTS

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<b>Temporary Research Support Specht Lab Cornell</b> <b>Supervisor:</b> Chelsea D. Specht, PhD	June 1st 2022 - June 30th 2022
<b>Ph.D Research: UC Berkeley/Cornell</b> <b>Advisor:</b> Chelsea D. Specht, PhD	Fall 2016 - May 2022
<b>Undergraduate Research: University of Washington</b> <b>Advisor:</b> Verónica S. Di Stilio, PhD	Summer 2012 - 2016
<b>New York University School of Medicine Summer Undergraduate Research Program (NYU SURP)</b> <b>Advisor:</b> E. Jane Albert Hubbard, PhD	Summer 2014

## ACADEMIC PUBLICATIONS REVERSE CHRONOLOGICAL

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\* Co-first authors

1. Kruse, L.H., Weigle, A.T., Mohammad I., **Martínez-Gómez, J.**, Chobirko, J.D., Schaffer, J.E., Bennett, A.A., Specht, C.D., Jez, J.M., Shukla, D. and Moghe, G.D.,. Orthology-based analysis helps map evolutionary diversification and predict substrate class use of BAHD acyltransferases. *Accepted Plant Physiology*.
2. **Martínez-Gómez, J.**, A.H., Atluri T., Rose, I.J., Holliday, Strock, C., Lynche, J., Miller, W., Stevenson, D.W., D.W., Specht, C.D. Developmental Morphology and Anatomy Shed Light on Both Parallel and Convergent Evolution of the Umbellate Inflorescence in Monocots, Underlain by a New Variant of Metatopy. *Frontiers in Plant Science* (2022): 1138. *Special Issue: Monocot Phylogenetics and Trait Evolution*  
  
Harline, K.\*, **Martínez-Gómez, J.\***, Specht, C.D., Roeder, A. H.K. A life cycle for modeling biology at different scales. *Frontiers in Plant Science* (2021): 1724. *Special Issue: Growth Patterns Underlying Plant Development*
3. Tribble, C.\*, **Martínez-Gómez, J.\***, Howard, C. C.\*, Males, J., Sosa, V., Sessa, E. B., Cellinese, N., Specht, C., D. Get the Shovel: Evolutionary Complexities of Belowground Organ in Geophytes. *American Journal of Botany* 108.3 (2021): 372-387.
4. Tribble, C. M., **Martínez-Gómez, J.**, Alzate-Guarin, F., Rothfels, C. J., Specht, C. D. Comparative transcriptomics of a monocotyledonous geophyte reveals shared molecular mechanisms of underground storage organ formation. *Evolution and Development* 23.3 (2021): 155-173.

5. **Martínez-Gómez, J.**, Galimba K.D, Coté E. Y., Sullivan A. M., and Di Stilio V.S. Spontaneous homeotic mutants and genetic control of floral organ identity in a ranunculid. *Evolution and Development* 23.3 (2021): 197-214.
6. Howard, C. C.\*, Tribble, C.\*, **Martínez-Gómez, J.\***, Sessa, E. B., Cellinese, N., Specht, C., D. "1, 2, 3, GO! Venture beyond gene ontologies in plant evolutionary research." *American Journal of Botany* 108, no. 3 (2021): 361-365.
7. Wang, T. N., Clifford, M. R., **Martínez-Gómez, J.**, Johnson, J. C., Riffell, J. A., & Di Stilio, V. S. Scent matters: differential contribution of scent to insect response in flowers with insect vs. wind pollination traits. *Annals of Botany* 123.2 (2019): 289-301.
8. Galimba, K. D., **Martínez-Gómez, J.**, & Di Stilio, V. S. Gene Duplication and Transference of Function in the paleoAP3 Lineage of Floral Organ Identity Genes. *Frontiers in Plant Science* 9 (2018): 334.

## DIGEST AND BOOK REVIEWS

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1. **Martínez-Gómez, J.** Digest: Phylogenetic comparative methods identify traits associated with urbanization tolerance in Anolis." *Evolution* (2020).

## SUBMITTED MANUSCRIPTS AND PREPRINTS

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1. **Martínez-Gómez, J.\***, Park S.\*, Hartogs S. R., Soza, V. L., Park S., Di Stilio V. S. Evolutionary integration of floral traits approximates pollination mode in *Thalictrum* (Ranunculaceae). *In review at Evolution March 30th 2022*

## MANUSCRIPTS IN PREPARATION

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1. **Martínez-Gómez, J.**, Holliday, A.H., Rose, I.J., Specht, C.D. On evolution and morphology of the Monocot inflorescence: A statistical phylogenetic approach.
2. **Martínez-Gómez, J.\***, Song, M.\*, Tribble, C.\*, Freyman, W., Hohna, S., Specht, C.D, Rothfels, C. J. A comparison of different Bayesian methods for estimating branch-specific shifts in diversification rates on molecular phylogenies.
3. **Martínez-Gómez, J.**, Freymann W., Specht C.D. Incorporating prior information of developmental genetics in trait evolution with the Threshold Model: The Umbel-ivable *Amaryllis Umbel* as a case study.

## RESEARCH FUNDING, FELLOWSHIPS AND SCHOLARSHIPS

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### Post-Doctoral Fellowships

University of California, Presidential Post-Doctoral Fellowship	2022
National Science Foundation Post-doctoral fellowship in Biology Plant Genome	2022

### Graduate Fellowships

Cornell University Diversity Fellowship (1 semester of graduate stipend + tuition)	Spring 2022
NSF Graduate Research Fellowship Program (3 years of graduate stipend + tuition)	Fall 2018 - Summer 2021
UC Berkeley Hellman Fellowship (2 Semester of graduate stipend)	Spring 2017, 2018
UC Berkeley Chancellor Fellowship (2 years of of graduate stipend + tuition)	2016-2018

### Research and Travel Funding

Cornell Graduate Travel Award (\$600 – Travel)	2018
UC Berkeley Graduate Travel Award (\$900 – Travel)	2018
UC Berkeley Graduate Assembly Travel Grant (\$300 Travel)	2018
American Society of Plant Taxonomy Graduate Funding (\$1000 – Research)	2018
Pacific Bulb Society Mary Sue Ittner Grant (\$500- Research)	2017
UC Berkeley Graduate Travel Award (\$900 – Travel)	2017
UC Berkeley: Integrative Biology Travel Award (\$250 – Travel)	2017
University of Washington Ronald E. McNair Research Funding (\$2,000 - Research Funding: received twice)	2015 & 2016
NSF Research Experience for Undergraduate (REU) Research Funding (\$3,300 - Research)	Summer 2015
Frye-Hotson-Rigg Department of Biology Research Scholarship (\$1,200 - Research)	Fall 2014

#### *Undergraduate Scholarships/Internships*

UW Department of Biology Excellence in Biology Scholarship (\$4,800 – UW Tuition)	2015
UW Education Opportunity Program Scholarship (\$1,000 – UW Tuition: received twice)	2013, 2014
Washington Research Foundation Distinguished Scholar (\$1,600 – UW Tuition)	2012-2013
University of Washington Costco Diversity Scholar (\$40,000 – UW Tuition)	2012
<b>Society for Developmental Biology: Choose Development! Internship</b> (Funding for three summers (\$4000 each) to work in a developmental Biology lab)	Summers 2013-2015
University of Washington ALVA GenOM Internship (Research experience for incoming freshmen the summer before Fall Semester)	Summer 2012
Central Elementary Scholarship (declined)	2012
Wells Fargo Ferndale, WA Chapter Scholarship	2012
Whatcom Hispanic Organization Scholarship	2012

#### **AWARDS/ DISTINCTIONS**

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Cornell University Barbra McClintock Graduate Award	2022
Schmidts Science Fellow Finalist	2022
Hispanic Scholarship Fellow	2017
Society for Developmental Biology 75th Annual Meeting <b>*Second Place in Undergrad Poster Presentations</b>	2016
<b>UW Cultivating Discovery Undergraduate Research Video</b>	2016
UW Ronald E. McNair Research Fellow	2014 - 2016
Louis Stokes Alliance for Minority Participation (LSAMP) Annual Conference <b>*Best Poster Presentation</b>	2014
Washington Certificate of Academic Excellence (High School)	2012
Advance Placement Scholar Award (High School)	2011

## TEACHING AND MENTORSHIP

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### Teaching

Cornell TA: PLBIO2480 Plant Systematic	Fall 2021
Cornell Module Co-Instructor: PLBIO6310 Phylogenetic Methods	Fall 2020
Cornell Module Co-Instructor: PLBIO6310 Introduction to Linux and Parsimony	Spring 2019
UC Berkeley Graduate Student Instructor: PMB107 Plant Morphology	Fall 2017
UW Undergraduate TA: BIO355 Foundations in Cellular & Molecular Biology	Fall 2015
UW Undergraduate TA: BIOL317 Plant Classification and Identification	Spring 2014

### Guest Lectures

Cornell ENTOM4610 Model-based phylogenetics and hypothesis testing	Spring 2022
Cornell PLBIO2480 Plant Systematic - "Flower Evo-Devo"	Fall 2021

### Lab Mentorship

<b>Lab Mentor: Tara Atluri</b>	Fall 2020 - Fall 2021
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Assisting me in imagining developmental morphology of inflorescence

<b>Lab Mentor: Aaliyah Holliday</b>	Fall 2019 - Spring 2021
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Assisting me in data collection for comparative inflorescence evolution project.

<b>Lab Mentor: Irving Jason Rose</b>	Fall 2018 - Spring 2021
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Assisting me in data collection for Amaryllidaceae project. Has since lead his own independent project in Liliales inflorescence evolution.

<b>Lab Mentor: Mary Swadener</b>	Summer 2015
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Summer lab mentor for undergraduate. Guided her with execution and presentation of project. She won best Poster in Plant section at the 2016 Emerging Research Conference (Washington DC).

### Academic Mentorship

<b>EEB Mentorship Match: Neha Tiwari</b>	Fall 2020 - Present
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Mentored in preparing application for graduate school.

<b>PLANTS Botany 2020 Conference Mentor</b>	Summer 2020
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Served as a mentor for undergraduate Juan Angulo at the Botany 2020 conference.

<b>PLANTS Botany 2019 Conference Mentor</b>	Summer 2019
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Served as a mentor for undergraduate Dannielle Waugh at the Botany 2019 conference.

<b>Graduate Students Mentoring Undergraduates</b>	Fall 2018 - Present
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Mentors undergraduate interested in graduate school, attend monthly dinner check-ins.

<b>PLANTS Botany 2017 Conference Mentor</b>	Summer 2017
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Served as a mentor for rising Master student Kasey Pham at the Botany 2017 conference.

<b>Summer Counselor for ALVA GenOM</b>	Summer 2016
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Supervised a cohort of 21 incoming freshmen as part of the GenOM research internship. Most students were either low income, first generation Americans or students of color. Helped foster an inclusive community for students and assisted with final research poster presentation.

<b>Undergraduate Research Leader</b>	2013-2016
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Promoted research opportunities to undergraduates on campus. Participated in panels, presented at first year interest groups and assisted students with contacting faculty for undergraduate research opportunities.

<b>Leader Del Futuro Mentor</b>	2014-2015
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Paired with a freshmen undergraduate from a Hispanic background. Helped her navigate the University of Washington and develop habits for success.

**University of Washington Mentor Power to Success Program** Fall 2013

Mentored a incoming freshmen undergraduate and helped her navigate the University classes and schedules.

**University of Washington ALVA GenOM Math and Chem Tutor** Summer 2013

Biweekly afternoon tutoring to incoming freshmen in calculus and general chemistry.

## SYNERGISTIC ACTIVITIES

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### *Professional Service*

**Cornell Diversity Training and Events subcommittee** Fall 2020 - Fall 2021

A focus on organizing and executing diversity and inclusion training, events and seminars at the SIPS

**Cornell School of Integrative Plant Science Diversity Working Group** Fall 2018 - Fall 2021

Group of faculty, staff, post-doc and students aimed to address and recommend in SIPS in regards to diversity, inclusion and gender.

**Cornell Diversity Preview Weekend Application Reviewer** Fall 2018-Fall 2021

Served as a application reviewer for three day long preview weekend for student interested in applying to graduate school in biological science.

### *Undergraduate level Outreach*

**Botanical Society of America NSF GRFP Reviewer** Fall 2020

Organized and provided feedback to research statement and statement of interest to Botanical Society of American Students

**Cornell NSF GRFP Reviewer** Fall 2018, 2019

Provided feedback to research statement and statement at Cornell University

### *K-12 level Outreach*

**Cornell Botanical Garden: Virtual Plant have Families too!** Summer 2020

One month online course for 5th graders to learn about plant classification in their backyards/homes

### **Radio Interview**

**Expand your Horizon Activity Leader: Virtual Plant** Spring 2020

Online version of EYH, developed website and Plant quiz for girls to explore plants virtually

**Expand your Horizon Activity Leader: Adventure of the Plant Kingdom** Spring 2019

One day plant based workshop for middle school aged girls. Developed plant pressing activities and presentation

**Cornell Botanical Garden Judys Day - 'Plants have families too'** Fall 2018

Outreach event, ran a booth "Make a Lily" to teach families about the Lily Flower

### *Professional Development*

**Oregon State University Pre-doctoral program** Summer 2021

OSU invited ABD students interested in the professoriate to campus to meet faculty. This is a part of their recruitment of diverse faculty strategy.

**Cornell NextGen Professor Program** Fall 2019

Mentorship program to prepare student to faculty member at a university.

**Oak Spring eFlower Summer School** Fall 2018

Ten day intensive course on the phylogenetic comparative methods to study flower evolution. Learned methods and collected data

## INVITED TALKS

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**2021**

Martínez-Gómez, J., Song, M., Tribble, C., Freyman, W., Hohna, S., Specht, C.D, Rothfels, C. J. A comparison of different Bayesian methods for estimating branch-specific shifts in diversification rates. Botany 2021; July 18-23, Online.

**Special Colloquium:** Modeling the Processes that mediate speciation and extinction rates across plants

Martínez-Gómez, J. On the evolution and development of the monocot inflorescence: Using models to understand this umbel-ivable diversity. March 4, 2021

**Smithsonian National Museum of Natural History Botany Department**

**2019**

Howard, C. C., Tribble C., Martínez-Gómez, J\*, Males J., Sosa V., Sessa E., Specht C. D., Cellinese N. Ontologies as a framework to clarify geophyte terminology. Botany 2019; July 27-31, Tucson, AZ 2019.

**Special Colloquium:** Time to dig: the importance of underground storage organs in plant evolution

**CONFERENCE PRESENTATION**


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Underline –Talk | **Bold** –Undergraduate Trainee Presenter | \* –Presenting Author (if not first)

**2021**

**Rose, I. J.**, Holliday, A. I., Atluri, T., Stevenson, D. W., Martínez-Gómez, J., Specht, C. D. Umbellate Inflorescence Structure and Development in Monocots. Botany 2021; July 18-23, Online.

**2020**

Martínez-Gómez, J., Rose, I. J., Freyman W., Specht, C. D. Where do umbels come from? Incorporating prior information of developmental genetics in trait evolution with the threshold model to generate more realistic models of morphological evolution. Botany 2020; July 27-31, Online.

Martínez-Gómez, J., Song, M., Tribble, C., Rothfels C. J., Freyman, W., Hohna, R., Specht, C.D. Commonly used inference methods result in significantly different diversification rate estimates. Botany 2020; July 27-31, Online.

**Holliday, A. I.**, Martínez-Gómez, J., Rose, I. J., Specht, C. D. The evolution of the monocot inflorescence using a phylogenetic framework. Botany 2020; July 27-31, Online.

**Rose, I. J.**, Martínez-Gómez, J., Specht, C. D. Inflorescence Structure and Development in Liliales: What is the Ancestral State of the Liliales order?. Botany 2020; July 27-31, Online.

**2019**

Martínez-Gómez, J., Galimba K., Sullivan A., Coté E., Di Stilio V. Natural homeotic mutants and genetic control of floral organ identity in a ranunculid. Botany 2019; July 27-31, Tucson, AZ 2019.

Martínez-Gómez, J., Song, M\*, Tribble, C., Freyman, W., Hohna, S., Rothfels, R., Specht, C.D. Diversification rates across lineages: how does biological meaning differ across model-based approaches? Botany 2019; July 27-31, Tucson, AZ 2019.

Tribble, C., Rothfels, C. J., Martínez-Gómez, J. Alzate, F., Specht, C.D. Differential gene expression in tuberous vs. non-tuberous roots of the tropical monocotyledonous geophyte *Bomarea multiflora* (Alstroemeriaceae). Botany 2019; July 27-31, Tucson, AZ 2019.

Martínez-Gómez, J., Rose, I. J., Specht, C. D. **Incorporating prior information of developmental genetics in trait evolution with the Threshold Model: The Umbel-ivable Amaryllis Umbel as a case study.** Evolution 2019; July 27-31, Providence, RI 2019.

## 2018

Martínez-Gómez, J., Specht C. D. Evolution of Monocot Reproductive Branches: An Evo-Devo approach to investigating the origin of the Amaryllidaceae ‘umbel’. Ecology and Evolutionary biology Graduate Symposium; December 6-7th. Ithaca, New York 2018

Martínez-Gómez, J., Specht C. D. Evolution of Monocot Reproductive Branches: An Evo-Devo approach to investigating the origin of the Amaryllidaceae ‘umbel.’ Monocots VI 2018; October 7-12th. Natal, Brazil 2018

Martínez-Gómez, J., Specht C. D. Phylogenetic Comparative Method illuminates Macroevolutionary origin of the Amaryllidaceae Umbel. Botany 2018; ; July 21-15, Rochester, MN 2018.

Di Stilio V, Hartogs S, Martínez-Gómez, J., Tank, D. Characterizing wind pollination syndrome, its tempo and mode of evolution in *Thalictrum* (Ranunculaceae). Botany 2018. July 21-15, Rochester, MN 2018.

## 2017

Martínez-Gómez, J., Specht D. C. Early Inflorescence Development in *Allium*: Its Umbel-ievably. Botany 2017; June 24-28, Fort Worth, TX 2017.

## As an Undergraduate: 2012-2016

Martínez-Gómez, J., Galimba K, Di Stilio V, Galimba K. Divergence of Gene Function Following Gene Duplication and its effect on Flower Development; Society for Developmental Biology 75th Annual Meeting and International Society of Differentiation 19th International Conference; Aug 4-8; Boston, MA, 2016. *\*Second Place in Undergrad Poster Presentations*

**Swadener M**, Martínez-Gómez, J., Di Stilio V,. Uncovering the Mechanism Underlying Polyploidy in Flowering Plants using Single Copy Gene Phylogenies; Emerging Research National Conference; Feb 25-27; Washington DC, 2017 *\*Best Place in Poster Presentation in Environmental/Ecological Category*

Martínez-Gómez, J., Di Stilio V, Galimba K. Evolution of UFO: Testing the Conservation of Floral Gene Regulatory Networks; 19th Annual Undergraduate Research Symposium; May 20; Seattle, WA: University of Washington; 2016

Martínez-Gómez, J., Galimba K, Di Stilio V, Galimba K. Divergence of Gene Function Following Gene Duplication and its effect on Flower Development; 24th Annual National Ronald E. McNair Research Conference; Oct 31; Delavan, WI: University of Wisconsin-Milwaukee; 2015

Martínez-Gómez, J., Di Stilio V, Galimba K,. Divergence of protein-protein interactions following gene duplication and its effect on flower development. 18th Annual Undergraduate Research Symposium; May 15; Seattle, WA: University of Washington; 2015.

Martínez-Gómez, J., Pekar O, Hubbard EJA. Potential link between TGFb signaling and notch signaling in *C. elegans* germ line development. Society for Developmental Biology 74th Annual Meeting; July 9-13; Snowbird, UT, 2015. p. 377.

Martínez-Gómez, J., Pekar O, Hubbard EJA. Potential link between TGFb signaling and notch signaling in *C. elegans* germ line development. The Leadership Alliance National Symposium; July 25-27; Stamford, CT, 2014.

Martínez-Gómez, J., Galimba K, Di Stilio V. The effect of gene duplication on protein interaction affecting flower development. Society for Developmental Biology 73rd Annual Meeting; July 17-21; Seattle, WA: Society for Developmental Biology; 2014.

Martínez-Gómez, J., Di Stilio V, Galimba K. Evolution of genetic pathways affecting petal and stamen development. 17th Annual Undergraduate Research Symposium; May 16; Seattle, WA: University of Washington; 2014.

Galimba K, Martínez-Gómez, J., Di Stilio V. Gene duplication and neo-functionalization in the APETALA3 lineage of floral organ identity genes in a non-core eudicot. Society for Developmental Biology 73rd Annual Meeting; July 17-21; Seattle, WA: Society for Developmental Biology; 2014.

Martínez-Gómez, J., Di Stilio V. Characterizing flower organ identity genes in a homeotic mutant. Pacific Northwest LSAMP Conference; February 14; Portland, OR: University of Washington; 2014.

*\*Best Poster Presentation*

Martínez-Gómez, J., Di Stilio V. Characterizing flower organ identity genes in a homeotic mutant. 16th Annual Undergraduate Research Symposium; May 17; Seattle, WA: University of Washington; 2013.

Martínez-Gómez, J., Galimba K. Characterizing the role of the B-class gene APETALA3 in a rue-anemone mutant. Society for the Advancement of Chicanos and Native Americans in Science (SAC-NAS); October; Seattle, WA, 2012.

## PEER REVIEWER FOR FOLLOWING JOURNALS

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Journal of Experimental Botany  
 Molecular Phylogenetics and Evolution  
 Trends in Ecology and Evolution  
 Annals of Botany  
 PLOS One  
 The Plant Cell  
 Evo-Devo  
 Feddes Repertorium