

## JANELLE M. BURKE, PH.D.

Associate Professor

Howard University, Department of Biology  
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### ACADEMIC APPOINTMENTS

May 2023–present. *Interim Chair*, Department of Earth, Environment and Equity, Howard University.

August 2019–present. *Associate Professor*. Department of Biology, Howard University.

August 2018–present. *Director*, Interdisciplinary Environmental Studies Program, Howard University.

August 2013–August 2019. *Assistant Professor* (tenure-track) and *Herbarium Director*, Department of Biology, Howard University.

November 2011–present. *Research Associate*. Botany Department, Smithsonian Institution National Museum of Natural History.

September 2011–July 2013. *Post-doctoral Research Associate*. Institute of Systematic Botany, The New York Botanical Garden. Supervisor: Fabian Michelangeli.

### EDUCATION

Ph.D., *Cornell University*. August 2005–May 2011. Field of Plant Biology. Primary Field: Systematics. Secondary Fields: Plant Anatomy and Morphology, Agronomy. Advisor: Dr. Melissa Luckow.

Bachelor of Arts, *Johns Hopkins University*. May 2004. Major: Natural Sciences: Behavioral Biology. Advisor: Dr. Gregory Ball.

### HONORS AND AWARDS

2023 AAAS Fellow, American Association for the Advancement of Science

Samuel Noel Postlethwait Award, 2023, Botanical Society of America

Dean's Award, 2022, College of Arts and Sciences, Howard University

Outstanding Teaching for Associate Professor, 2020-2021, College of Arts and Science, Howard University

Fulbright Scholar, Academic year 2020-2021, Austria.

Faculty Appreciation Award, 2020, Office of Honors and Scholar Development, Howard University

### PUBLICATIONS UNDER REVIEW

Koenemann, D.M., **J.M. Burke**. *In Revision*. A nomenclatural synopsis of the genus *Triplaris* (Polygonaceae) *Phytotaxa*.

**Burke, J.M.** and D.M. Koenemann. *In Revision*. The complete annotated plastome sequences of six genera in the tropical woody Polygonaceae. *BMC Plant Biology*.

## PEER REVIEWED PUBLICATIONS

- Koenemann, D.M., L. Kistler, L., and **J.M. Burke**. 2023. A plastome phylogeny of *Rumex* (Polygonaceae) illuminates the divergent evolutionary histories of docks and sorrels. *Molecular Phylogenetics and Evolution* (182): 107755. <https://doi.org/10.1016/j.ympev.2023.107755>
- Grant, K.D., D.M. Koenemann, J. Mansaray, A. Ahmed, H. Khamar, J. El Oualidi and **J.M. Burke**. 2022. A New Phylogeny of *Rumex* (Polygonaceae) Adds Evolutionary Context to the Diversity of Reproductive Systems Present in the Genus. *PhytoKeys* 204:57-72. <https://doi.org/10.3897/phytokeys.204.85256>
- Koenemann, D.M., A. Durand, and **J.M. Burke**. 2021. A floral checklist for Wheaton Regional Park, Montgomery County, Maryland. *Castanea* 86(1): 61-99. <https://doi.org/10.2179/0008-7475.86.1.61>
- Quinlan, C.L., K. Picho and **J.M. Burke**. 2021. Creating an Instrument to Measure Social and Cultural Self-efficacy Indicators for Persistence of HBCU Undergraduates in STEM. *Research in STEM Education*. <https://doi.org/10.1007/s11165-021-09992-8>
- Koenemann, D.M. and **J.M. Burke**. 2020. A molecular phylogeny for the genus *Coccoloba* (Polygonaceae) with an assessment of biogeographic patterns. *Systematic Botany* 45(3). <https://doi.org/10.1600/036364420X15935294613536>
- Burke, J.M.** and Michelangeli, F.A. 2018. Six new species of *Miconia* (Miconieae, Melastomataceae) from the Andes. *Phytotaxa* 361(2): 131-150. <https://doi.org/10.11646/phytotaxa.361.2.1>
- Burke, J.M.**, Michelangeli, F.A. and Fernandez, D. 2017. *Miconia complanata* (Miconieae: Melastomataceae), a new species from the border between Ecuador and Peru. *Brittonia* 69(3): 370-375. <https://doi.org/10.1007/s12228-017-9470-8>
- Cardenas, L.A., **Burke, J.M.** and F.A. Michelangeli. 2014. Five new species of *Miconia* (Melastomataceae) from the Central Peruvian Andes. *Phytotaxa* 188(3):121-134. <https://doi.org/10.11646/phytotaxa.188.3.1>
- Burke, J.M.** and Michelangeli, F.A. 2013. Lectotypification of Peruvian Melastomataceae described by Cogniaux from Weberbauer collections. *Phytotaxa* 125: 10-16.
- Burke, J.M.** and Michelangeli, F.A. 2013. *Miconia galeiformis* and *Miconia neei* (Miconieae: Melastomataceae), two new species from Bolivia. *Brittonia* 65: 171-180.
- Burke, J.M.** and A. Sanchez. 2011. Revised subfamily classification for Polygonaceae, with a tribal classification for Eriogonoideae. *Brittonia* 63(4): 510-520.
- Burke, J.M.** and A. DiTommaso. 2011. Corallita (*Antigonon leptopus*): Intentional introduction of a plant with documented invasive capability. *Invasive Plant Science and Management* 4(3): 265-273.
- Sanchez, A., T.M. Schuster, **J.M. Burke** and K.A. Kron. 2011. Taxonomy of Polygonoideae (Polygonaceae): a new tribal classification. *Taxon* 60(1): 151-160.
- Burke, J.M.**, A. Sanchez, K. Kron and M. Luckow. 2010. Placing the woody tropical genera of

Polygonaceae: A hypothesis of character evolution and phylogeny. *American Journal of Botany* 97(8): 1377-1390.

Sapkota, A., A.R. Sapkota, M. Kucharski, **J.M. Burke**, S. McKenzie, P. Walker, and R. Lawrence. 2008. Aquaculture practices and potential human health risks: Current Knowledge and Future Priorities. *Environment International* 34(8): 1215-1226.

## BOOK CHAPTERS

Michelangeli, F.A., A.N. Nicolas, G. Ocampo, R. Goldenberg, F. Almeda, W.S. Judd, E.R. Bécquer, J.D. Skean Jr, K. Sosa, M.K. Caddah, G.M. Ionta, D.S. Penneys, M. Alvear, M. Gavrutenko, **J.M. Burke**, L.C. Majure and M. Reginato. 2022. Historical Biogeography of the Neotropical Miconieae (Melastomataceae) reveals a pattern of progressive colonization out of lowland South America. In R. Goldenberg, F.A. Michelangeli and F. Almeda (Eds.), *Systematics, Evolution and Ecology of Melastomataceae*. Springer.

## OTHER PUBLICATIONS

**Burke, J.M.** and J.J. Ortiz. *In Press. Antigonon*. In, Polygonaceae. Flora Mesoamericana. (C. Ulloa, Ed.). Missouri Botanical Garden Press.

Michelangeli, F.A., F. Almeda, M. Alvear, E.R. Becquer, **J. Burke**, M. Caddah, R. Goldenberg, G.N. Ionta, W.S. Judd, L.C. Majure, J. Meirelles, A.N. Nicolas, G. Ocampo, D.S. Penneys, J.D. Skean, and C. Ulloa-Ulloa. 2016. Proposal to conserve *Miconia* (nom. Cons.) against *Maieta* and *Tococa* (Melastomataceae: Miconieae). *Taxon* 65(4): 892-893.

## GRANTS AWARDED

- Co-PI- NSF: *Excellence in Research: Developing a Model System for Studying the Determinants of Flower Morphology in Tropical Dioecious Trees*. IOS-# 2401525, 2024-2027, \$391,446.
- Co-PI: *Howard University Educational Equity and College in High School Program*. National Education Equity Lab. \$40,00. 2021-2022.
- PI- NSF: *Excellence in Research: The evolutionary origins of sex chromosomes in docks and sorrels (Rumex)*. DEB-#2101101, 2021-2023, \$378,678.
- PI- Dept. of Interior Cooperative Agreement: *National Climate Adaptation Science Center Fellowship Program*, 2021-2022, \$29,062.
- Co-PI, NSF: Targeted Infusion Project, *Promoting Environmental Education in Urban Social-Ecological Resilience*, HRD-# 1719520, 2017-2022, \$424,127.
- PI- NSF: Research Initiation Award, Research Initiation Award: *A model plant group to study the evolution of diverse reproductive systems*. HRD-# 1601031, 2016-2020, \$270,897.
- Co-PI, PI- Howard University, Office of Graduate Studies, Small equipment award, 2017-2018, \$8,329.
- PI- NSF: Digitization TCN, *The Mid-Atlantic Megalopolis: Achieving a greater scientific*

*understanding of our urban world*, DBI # 1600976, 2016-2019, \$13,757.

- PI- Howard University, HU-ADVANCE IT Mini-grant, 2016, \$10,000.
- PI- Howard University, Office of Graduate Studies, Small equipment award, 2015, \$11,500.
- PI- Washington Biologists Field Club, Research grant, 2014-2015, \$2,694.

## PUBLISHED ABSTRACTS AND PRESENTATIONS

\*denotes undergraduate researcher

**Burke, J.M.**, D. Koenemann, and D. Pittman-Kidd\*. 2023. Prolific Plant Collectors and the HBCU legacy: Charles Parker as a case study. Botany 2023 conference. Oral Presentation.

Aadia Moseley-McCloud\*. 2023. *Analysis of the Effects of Mycorrhizae on Growth and Primary Sex Ratios of Sorrel. (Rumex acetosa)*. Howard University Research Symposium 2023. Howard University. Role: **J.M. Burke, Faculty Advisor**

Julianna J. Harden\*, Aadia Moseley-McCloud\*, Dominique Pittman-Kidd\*, Sydney Sauls\*, Hawa Dansoko\*, Jazmine Harry\*, Briana McClendon\*. 2023. *Identification of Yellow Dock Herbal Supplement Contents using DNA Barcoding Technology*. Howard University Research Symposium 2023. Howard University. Role: **J.M. Burke, Faculty Advisor**

**Burke, J.M.**, D. Koenemann, and D. Pittman-Kidd. 2023. Prolific Plant Collectors and the HBCU legacy: Charles Parker as a case study. Association for Southeastern Biologists. Oral Presentation.

Koenemann, D.M., L. Kistler, and **J.M. Burke**. 2022. A first plastome phylogeny for *Rumex* L. (Polygonaceae) with fossil-aided date calibration. Botany 2022 conference. Oral Presentation.

Angulo, J., **J.M. Burke**, F. Michelangeli. 2022. Characterizing a wide morphological spectrum of dioecy in neotropical *Miconia* (Melastomataceae). Botany 2022 conference. Oral Presentation.

**Burke, J.M.** 2022. Using WikiEdu platform as a class project in Botany courses. Botany 2022 conference. Oral Presentation.

Wade, J., M.\* , Quest, N. Lazarus, **J.M. Burke**, B. Hanrahan. 2021. Biomimetic 4D Printed *Erodium* Cicutarium thermo-responsive actuator. Botany Conference 2021. Poster Presentation.

Koenemann, D.M., A. Durand\*, **J.M. Burke**. 2021. Updates on the Flora of Wheaton Regional Park, Montgomery County, Maryland. Botany Conference 2021. Poster Presentation.

**J.M. Burke**, P. Hodges\* and E.J. Wilkin\*. 2020. Model for Sustained research experiences in Botany from Howard University. Botany Conference 2020. Oral Presentation.

Koenemann, D, A. Durand\* and **J.M. Burke**. 2019. Digital Flora for Wheaton Regional Park, Montgomery County, Maryland. Botany Conference 2019. Oral Presentation.

Koenemann, D, and **J.M. Burke**. 2019. A New Phylogeny and Biogeographic History Reconstruction for *Coccoloba* (Polygonaceae). Botany Conference 2019. Poster Presentation.

**Burke, J.M.**, A. Durand\*, T.S. Colon\*, and D. Koenemann. Digitization of the Howard University Herbarium. Botany Conference 2019. Poster Presentation.

\*Wilkin, E.J. and **J.M. Burke**. 2019. Shifts in Flowering of Willows (*Salix spp.*) Over Time and by

- Plant Sex. Howard University Research Symposium 2019. Poster Presentation.
- \*Wells, M., C. Edwards\* and **J.M. Burke**. 2019. An Examination of Urban Air Pollution from Traffic and Construction around Howard University Campus. Howard University Research Symposium 2019. Poster Presentation.
- \*Hodges, P. and **J.M. Burke**. 2019. Bringing Clarity to *Artemisia L.* by Categorizing Moroccan Species. Howard University Research Symposium 2019. Poster Presentation. **Winner of best undergraduate presentation in Environmental Studies.**
- \*Durand, A., D. Koenemann and **J.M. Burke**. A Digital Flora Checklist of Wheaton Regional Park in Wheaton, MD. Howard University Research Symposium 2019. Oral Presentation.
- Grant, K.D. and **J.M. Burke**. 2019. Characterization, Quantification, and Comparison of Phytochemical Oxalic Acid found in male and female individuals of *Rumex acetosa*. 2019 Emerging Researchers National (ERN) Conference in STEM. Oral Presentation.
- \*Hodges, P. and **J.M. Burke**. Bringing Clarity to *Artemisia L.* by Categorizing Moroccan Species Into the Genus' Subgenera. 2019 Emerging Researchers National (ERN) Conference in STEM. Poster Presentation. **2<sup>nd</sup> Place Winner- Ecology, Environmental and Earth Sciences.**
- Grant, K.D. and **J.M. Burke**. 2018. A proposed phylogenetic & taxonomic reclassification of the collective *Rumex* genus. Botany Conference 2018. Poster Presentation.
- \*Utley, D. and **J.M. Burke**. 2018. Sex Determination and Resource Allocation in Dioecious *Rumex acetosa* and Related Species. Botany Conference 2018. Oral Presentation.
- \*Durand, A., **J.M. Burke** and P. Hodges\*. 2018. Videos as Outreach Tools to Build Community in Natural History Collections Research: Examples from Howard University. Botany 2018. Oral Presentation.
- \*Durand, A. and **J.M. Burke**. 2018. The Howard University Mid-Atlantic Megalopolis Education Module. HU Research week 2018. Oral Presentation.
- \*Harvey, M. and **J.M. Burke**. 2018. Authentication of *Uncaria tomentosa* in Herbal Supplements. HU Research week. Oral Presentation.
- \*Mpi, Nwerebuaku and **J.M. Burke**. 2018. The Verification of Hawaiian *Rumex* Reproductive System. HU Research week 2018. Poster Presentation.
- \*Osborne, M. and J.M. Burke. 2018. The Authenticity of the World's Most Expensive Spice, *Crocus sativus* (Saffron). HU research week 2018. Oral Presentation.
- J.M. Burke**, K.D. Grant and J. Mansaray\*. 2017. Rechinger's *Rumex*: taxonomy and plant sex revisited. Botany Meeting 2016. Oral Presentation
- \*Utley, D. and J.M. Burke. 2018. (*Honors Thesis*). Sex Determination and Resource Allocation in Dioecious *Rumex acetosa* and Related Species. HU research week 2018. Poster presentation.
- \*Utley, D. and **J.M. Burke**. Sex determination in dioecious *Rumex acetosa*. Botany Conference Meeting 2017. Poster.
- \*Harvey, M. and **J.M. Burke**. 2017. The Life and Legacy of Dr. Charles S. Parker. Botany Meeting 2017. Oral Presentation.
- Grant, K.D. and **J.M. Burke**. 2017. Investigation of sexual systems associated with species of the genus

- Rumex* using compared reconstructed molecular phylogenies. Botany Meeting 2017. Poster.
- \*Ahmed, A., **J.M. Burke**, W. Anderson and J. Mansaray\*. 2017. A species distribution model of Ethiopianphlebotomine sandflies. HU Research week 2017. Poster.
- \*Durand, A. and **J.M. Burke**. 2017. The digitization of mid-Atlantic specimens in the Howard Universityherbarium. HU Research week 2017. Poster.
- Grant, K.D. and **J.M. Burke**. 2017. Investigation of sexual systems associated with species of the genus *Rumex* using compared reconstructed molecular phylogeny. HU Research week 2017. Poster.
- \*Mansaray, J., K.D. Grant and **J.M. Burke**. 2017. Molecular phylogeny of *Rumex* based on *psbA-trnH* intergenic spacer. HU research week 2017. Oral presentation.
- \*Osborne, M. and **J.M. Burke**. 2017. A century-long study of the phenology of Poison Ivy. HU research week2017. Poster.
- \*Utley, D. and **J.M. Burke**. 2017. Sex determination in dioecious *Rumex acetosa*. HU research week 2017. Poster.
- Burke, J.M.\***, K.D. Grant and F.A. Michelangeli. 2016. Seven new species of Miconia (Melastomataceae) fromthe Andes. Botany Meeting 2016. Poster.
- \*Mansaray, J. and **J.M. Burke**. 2016. Secondary characteristics indicating sexual dimorphism in the plant, *Rumex acetosella* (Polygonaceae). Botany Meeting 2016. Poster.
- \*Mansaray, J. and **J.M. Burke**. 2016. The ecology of phlebotomine sand flies, vectors for cutaneous leishmaniasis in Ethiopia. HU research week 2016. Poster.
- Grant, K.D. and **J.M. Burke**. 2016. *Miconia dulcis*: A new species of Melastomataceae found in Bolivia. HUresearch week 2016. Poster.
- \*Ademuwagun, C. and **J.M. Burke**. 2015. Collection, identification and analysis of plant species found in theforest of Wheaton Regional Park, Montgomery County, MD. HU research week 2015. Poster.
- \*Mansaray, J. and **J.M. Burke**. Historical investigation of *Rumex* plant species in the DC metropolitan area. HU research week 2015. Poster.
- Burke, J.M.** Towards a global checklist of *Rumex*. Caryophyllales 2015, Berlin, Germany. Poster.

#### **GRADUATE STUDENTS- Major Professor**

1. Kirstie Grant, Ph.D., 2015-2020. Docks and Sorrels (*Rumex*; Polygonaceae): Impact of Highly DiverseReproductive System Evolution on Oxalic Acid Allocation (Polygonaceae)
2. Daniel Koenemann, Ph.D., 2017-2021. Systematic Studies in the Tropical Woody Polygonaceae(Polygonaceae).

#### **STUDENT MENTEES AND LAB ALUMNI**

- **Janet Mansaray**- B.S. 2017, currently Ph.D. student in Plant Systematics at Louisiana State University
- **Morinne Osborne**- B.S. 2018, assistant coordinator for XII Congreso Latinoamericano de

botanico, Quito, Ecuador

- **Delecia Utley**- B.S. 2018 with Honors. Ph.D. student, North Carolina State University.
- **Monique Harvey**- B.S. 2018, Teach for America intern at Prince George's County Public Schools
- **Aisha Ahmed**- B.S/M.D. 2019, medical resident at Howard University Hospital
- **Amber Durand**- B.S. 2019, dental student at Augusta University
- **Paige Hodges**- B.S. 2020, with Honors. Dental student at Temple University
- **Emma Jeanne Wilkin**- B.S. 2020, with Honors. Veterinary student at LSU.
- **Tyler Colon**- B.S. 2021. Science lab technician
- **Mya Wells**- B.S. 2021. Global Sustainability Scholar.
- **Jayla Wade**- B.S. 2023. Environmental Science student.
- **Aadia Moseley-McCloud**- B.S. 2023. Honors student; Frontier Masters Program in EEB University of Michigan, Summer 2023
- **Dominique Pittman-Kidd**- current senior Biology major
- **Julianna Harden**- B.S. 2023. Joining Plant Science lab at Cornell University as research technician.
- **Sydney Sauls**- current sophomore Karsh STEM scholar
- **Jazmine Harry**- current sophomore Karsh STEM scholar
- **Kierra Hale**- current freshmen Karsh STEM scholar
- **Inaya Samad**- current senior Environmental Science student

## INTERNATIONAL FIELD EXPERIENCE

### Research Plant Collection Trips

- Morocco: July 2018 (2.5 weeks)
- Northern Ethiopia: July 2015 (3 weeks)
- Southern Peru: June 2012 (4 weeks)
- Northern Peru: March 2012 (3 weeks)
- Panama: September 2011 (1 week)
- Netherlands Antilles: June 2009 (1 week)
- Michoacán and Guerrero, Mexico: August 2008 (3 weeks)
- Yucatán Peninsula, Mexico: April 2008 (4 weeks)
- Veracruz and Oaxaca, Mexico: August 2007 (2 weeks)
- Venezuela: January 2007 (3 weeks)

## INVITED TALKS

- February 2020. Rancho Santa Ana Botanic Garden, Claremont, CA.
- October 2018. XII Latin-American Botanical Congress. Melastomataceae Symposium, Quito, Ecuador.
- May 2018. Ecology and Evolution seminar series. UC-Davis. Davis, CA.
- September 2017. Ohio State University Ecology and Evolutionary Biology Mini-Symposium.

Howard University, Washington, DC.

- August 2014. Evolution of Andean *Miconia*. Botany Department, National Museum of Natural History. Washington, DC.
- June 2014. Evolution of Andean *Miconia*. Blandy Experimental Farm REU research seminar series. Boyce, VA.
- November 2013. Ascent of divergent breeding systems in *Miconia*. Howard University Dept. of Biology seminar series.

## TEACHING EXPERIENCE

Lead Professor. National Education Equity Lab/ Dept. of Interdisciplinary Studies, Howard University  
**Environmental Studies & Justice.** Spring 2021, Fall 2022

Instructor. Department of Biology, Howard  
University

**General Biology 102 (4 cr).** Spring 2014-2020

**Global Climate Change Biology (4 cr).** Fall 2014, Spring 2017, Spring 2018, Spring 2020

**Honors Orientation (1cr).** Fall 2016, Fall 2017, Fall 2021

**Introduction to Environmental Studies (3 cr).** Fall 2018, Fall 2019, Fall 2021

**Plant Diversity (4 cr).** Fall 2013, Spring 2015, Spring 2016, Fall 2016-2019, Fall 2021

**Sophomore Directed Readings (1 cr).** Spring 2018.

**Junior Directed Readings (1cr).** Fall 2018, Spring

2019. **Honors Research (2 cr).** Fall 2019.

**Honors Thesis (1 cr).** Spring 2020

**Topics in Anatomy & Physiology (1 cr).** Fall 2013.

**Topics in Cellular & Molecular Biology (1 cr)** Fall 2013.

## PROFESSIONAL SOCIETIES

Member: American Society of Plant Taxonomists, Botanical Society of America, International Association for Plant Taxonomy

## EDITORIAL SERVICES

Reviewer: *Biological Invasions*, *Brittonia*, *Ecosphere*, *International Journal of Plant Sciences*, *Journal of the Botanical Research Institute of Texas*, *Journal of Systematics and Evolution*, *Molecular Phylogenetics and Evolution*, *Phytotaxa*, *Systematic Botany*.

## LEADERSHIP

Interim and Inaugural Chair, Dept. of Earth, Environment and Equity (E3), May 2023-present

Board Member, Sharing the Power Foundation. 2022- present

Advisory Board Member, Belonging in Botany initiative, 2022- present

Founding Member, DC Coalition of Higher Education for the Environment, Resilience, and Sustainability, 2021- present



Member, DEI Committee, Botanical Society of America, 2019- present  
Elected Council Member-at-Large, American Society for Plant Taxonomy, 2020-present  
Director, Interdisciplinary Environmental Studies Program, College of Arts and Sciences, Howard University, 2018- present  
Chair, Environmental Studies Curriculum Committee. 2016-present.  
Chair, Biology Curriculum Committee. 2015-2017 Department of Biology, Howard University.  
Officer, Representative from ASPT to AIBS. 2014-present. Officer, Representative from ASPT to AAAS, 2018-present. Mentor: Oxon Hill High school science projects. 2014-2016.

### **LANGUAGE SKILLS**

Proficient in written and spoken Spanish.

Competency in written Modern Standard Arabic and spoken Levantine Arabic.