

## Kathryn P. Mercier

City College of New York  
 Department of Biology  
 Marshak Science Building  
 New York, NY 10031

kmercier@gradcenter.cuny.edu  
 Website: www.kpmercier.com

### EDUCATION

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Ph.D.	City University of New York Advisor: Ana Carolina Carnaval Dissertation: Linking environmental change with species distributions and diversity; from past to future and theory to practice	In progress
M.S.	University of Central Florida - Biology Advisor: Christopher L. Parkinson Thesis: Phylogeographic patterns of divergence within <i>Plestiodon egregius</i>	2018
B.S.	University of Central Florida - Psychology Minor: Mathematics	2012
A.A.	Seminole State College of Florida	2009

### RESEARCH AND PROFESSIONAL EXPERIENCE

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2019-20	Graduate Levine Fellow, City College of New York
2018-19	Graduate Assistant, Graduate Center at the City University of New York
2017-18	Graduate Research Assistant, University of Central Florida Evaluating Mole Skink and Salt Marsh Snake sub-specific taxonomy in Florida using genomics, USFWS
2017	Technical Team Advisory Member, United States Fish and Wildlife Service Cedar Keys Mole Skink species status assessment
2016	Technical Team Advisory Member, United States Fish and Wildlife Service Florida Keys Mole Skink species status assessment
2015-16	Graduate Teaching Assistant, University of Central Florida
2015	Graduate Research Assistant, University of Central Florida Population structure and genetic diversity of <i>Crassostrea virginica</i> in Apalachicola Bay, FL.
2014	Undergraduate Research Assistant, University of Central Florida Evaluation of high-resolution aerial images for sea turtle nest monitoring.
2011	Undergraduate NSF CSUMS Researcher, University of Central Florida An efficient algorithm to extract the sparse and low rank components of a matrix.

### PUBLICATIONS

\*undergraduate under my supervision ~co-first author

**Mercier KP**, Baylac M\*, Dillon S\*, Medina S\*, Parkinson CL. The utility of traits, genes, and genomes in delimiting conservation units: A case study in Mole Skinks (*Plestiodon egregius*). In Prep.

Rautsaw RM, Acuña R, Arick LN, DiMeo M, Hickson J, Mason AJ, **Mercier KP**, Schrum M, Strickland JL, Territo GP, Parkinson CL. Systematic assessment of the Florida *Nerodia fasciata-clarkii* complex to inform the future management of Atlantic Salt Marsh Snakes (*N. c. taeniata*). Submitted to Molecular Ecology.

Lawrance M, **Mercier KP**, Solomon J, Walters LJ, Parkinson CL. 2017. Genetic diversity and population structure of oysters in Apalachicola Bay, FL. *Florida Scientist*. 80(4): 145-150.

Boas T, Dutta A, Li X, **Mercier KP**, Niederman E. 2017. Shrinkage function and its application in matrix theory. *Electronic Journal of Linear Algebra*. 37:163-171.

**GRANTS**

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2020	Graduate Center - City University of New York, <i>New York, NY</i> <i>Doctoral Student Research Grant, Systematics and niche evolution in Asimina, insights for conservation</i>	\$1500
2019	Advanced Science Research Center of the City University of New York <i>ASRC Seed grant program, Harnessing ecophysiology and evolutionary theory to improve models of biodiversity and ecosystem function</i>	\$15,000
2019	New York Botanical Garden, <i>Bronx, NY</i> <i>Cullman Program in Botanical Systematics, Harnessing big data and evolutionary theory to predict species ranges and enhance conservation</i>	\$1970^A
2018	City College of New York, <i>New York City, NY</i> <i>Biodiversity Under Environmental Change Seed Grant, Can trait-based hypotheses shed light on phylogeographic discordance?</i>	\$2500

**FELLOWSHIPS**

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2020	Provosts Office – City University of New York, <i>New York, NY</i> <i>Provosts Pre-Dissertation Science Research Fellowship, Harnessing evolutionary theory to improve models of biodiversity: a case study in Asimina (Pawpaw)</i>	\$5000
2018	City College of New York, Division of Science, <i>New York City, NY</i> <i>Levine Fellowship</i>	\$32,000
2015	University of Central Florida College of Graduate Studies, <i>Orlando, FL</i> <i>Graduate Dean’s Fellowship</i>	\$12,000
2011	University of Central Florida Department of Mathematics, <i>Orlando, FL</i> <i>GAUSS Fellow – A National Science Foundation CSUMS Program</i>	\$10,000

**TRAVEL AWARDS**

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2019	Summer Institute in Statistical Genetics, University of Washington, <i>Seattle, WA</i> <i>Department of Biostatistics Scholarship to attend three modules: Conservation Genetics, Population Genetics, and Statistical Genetics</i>	\$1725
2017	University of Central Florida College of Graduate Studies, <i>Orlando, FL</i> <i>Graduate Presentation Fellowship</i>	\$500
2017	University of Central Florida Department of Biology, <i>Orlando, FL</i> <i>Student Travel Award</i>	\$800
2016	University of Central Florida Department of Biology, <i>Orlando, FL</i> <i>Student Travel Award</i>	\$400
2016	American Society of Ichthyologists and Herpetologists <i>Graduate Student Travel Award</i>	\$600

**INVITED PRESENTATIONS**

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- 2020 **Mercier KP.** How to predict species distributions in the near future (using Pawpaw). Class Lecture, City College Undergrad Ecology and Evolution (BIO228). *New York, NY*
- 2019 **Mercier KP,** Vasconcellos MM, Michelangeli FA, Carnaval AC. Impact of climate stability on the population dynamics of two Brazilian palm species. New York Species Distribution Modelling Group, *New York, NY.*

**PRESENTATIONS**

\*undergraduate under my supervision

- 2020 **Mercier KP,** Vasconcellos MM, Martins EGA, Pirani JR, Michelangeli FA, Carnaval AC. Historical stability impacts population dynamics of two Brazilian palm tree species. CUNY Graduate Center Sciences Virtual Student Orientation, *New York, NY.*
- 2020 Perez CI\*, **Mercier KP,** and Carnaval AC. Understanding the impact of climate and land-use change on the distribution of *Anolis punctatus* in the near future. CCNY Remote STEM Internships Symposium, *New York, NY.*
- 2020 Jacome K\*, **Mercier KP,** and Carnaval AC. Analyzing the effect of environmental factors in the tree frog sister species pair *Hypsiboas semilineatus* and *H. geographicus*. Collegiate of Science and Technology Entry Program Research Expo, Poster, *New York, NY.*
- 2019 Perez CI\*, **Mercier KP,** and Carnaval AC. Determining the spatial distribution of *Anolis punctatus* in the Atlantic Forest during the Pleistocene (21 kya) and in the present. CCNY CCAPP Poster Presentation, *New York, NY.*
- 2019 Jacome K\*, **Mercier KP,** and Carnaval AC. Analyzing the effect of environmental factors in the tree frog sister species pair *Hypsiboas semilineatus* and *H. geographicus*. CCNY CCAPP Poster Presentation, *New York, NY.*
- 2019 **Mercier KP,** Vasconcellos MM, Martins EGA, Pirani JR, Michelangeli FA, Carnaval AC. Historical stability impacts population dynamics of two Brazilian palm tree species. Evolution Meeting, *Providence, RI.*
- 2019 **Mercier KP,** Vasconcellos MM, Michelangeli FA, Carnaval AC. Climate variability impacts on Brazilian palm tree population dynamics. CUNY Biology EEB Research Symposium, *New York, NY.*
- 2018 **Mercier KP,** Parkinson CL. Digging up the phylogenetics and population structure of a fossorial skink, *Plestiodon egregius*. Society of Systematic Biology Meeting, *Columbus, OH.*
- 2017 Baylac M\*, **Mercier KP,** Parkinson CL. Investigating the evolutionary relationships of Mole Skinks in Florida. Showcase of Undergraduate Research, University of Central Florida, *Orlando, FL.* Judges choice in life sciences
- 2017 **Mercier KP,** Baylac M\*, Parkinson CL. Using hypothesis testing to unearth phylogeographic patterns within Mole Skinks. Evolution Meeting, *Portland, OR.*
- 2017 DiMeo MA, Arick LN, Hickson JB, Mason AJ, **Mercier KP,** Rautsaw RM, Strickland JL, Territo GP, Parkinson CL. Turbulent waters: Resolving the evolutionary history of the Atlantic Salt Marsh Snake *Nerodia clarkii taeniata*. Florida Chapter of the Wildlife Society Annual Meeting, *Orlando, FL.* Best student poster
- 2017 Jenkins DG, Smith N, Grace MK, Arnaldi K, Bunner C, Guilfoyle K, Klein CM, **Mercier KP,** Napier J, Perry D, Phillips K, Rautsaw R, Stahelin G, Volk D. Toward a macroecology of roadkill. Conference of the International Biogeography Society, *Tucson, TX.*

- 2016 **Mercier KP**, Baylac M\*, Parkinson CL. Unearthing the evolutionary history of Mole Skinks. Joint Meeting of Ichthyologists and Herpetologists, *New Orleans, LA*. SSAR Victor Hutchinson Student Poster Award in Evolution, Genetics, and Systematics (see Awards, above)
- 2016 **Mercier KP**, Parkinson CL. Unearthing the evolutionary history of Mole Skinks. Southeastern Ecology and Evolution Conference, *Tallahassee, FL*.
- 2016 Baylac M\*, **Mercier KP**, Parkinson CL. Investigating the evolutionary relationships of mole skinks. Summer Undergraduate Research Fellowship Symposium, University of Central Florida, *Orlando, FL*.
- 2014 Crawford L, **Mercier KP**, Burgess M, Castro J, Percival F, Schwoerer M, Tappen M, Von Holle B, Weishampel J. Evaluation of high-resolution aerial images for Sea Turtle nest monitoring. Showcase of Undergraduate Research Excellence, *Orlando, FL*.
- 2011 **Mercier KP**, Boas T, Niederman E, Li X. An efficient algorithm to extract the sparse and low rank components of a matrix. Conference for Computational Science Training for Undergraduates in the Mathematical Sciences, *St. Paul, MN*.

#### **WORKSHOPS ATTENDED**

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- 2020 Posterior Predictive Simulation with P2C2M, Society for Systematic Biology Meeting, University of Florida, Gainesville, FL
- 2020 Open Tree of Life, Society for Systematic Biology Meeting, University of Florida, Gainesville, FL
- 2019 SLiM Workshop, City College of New York, *New York, NY*
- 2019 RADcamp, Columbia University, *New York, NY*
- 2019 Summer Institute in Statistical Genetics, Department of Biostatistics, University of Washington, *Seattle, WA*
- 2019 New developments in phylogenetics and evolution, Society for Systematic Biology, Evolution Meeting, *Providence, RI*
- 2018 RADCamp, AFBiota Meeting (NSF Dimensions Grant: 1343578), *Sao Paulo, Brazil*
- 2018 Random Forests and Predictive Phylogeography, Society for Systematic Biology Annual Meeting, *Columbus, OH*
- 2016 Using R for Comparative Phylogenetics and Niche Modeling, Joint Meeting of Ichthyologists and Herpetologists, *New Orleans, LA*
- 2015 Preparing Tomorrow's Faculty, University of Central Florida, *Orlando, FL*

#### **TEACHING**

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- 2020 Ecology and Evolution Lab (BIO228), Graduate Teaching Assistant  
*City College of New York, New York, NY*
- 2016 Evolutionary Biology (PCB4683), Laboratory Instructor of Record  
*University of Central Florida, Orlando, FL*
- 2015-16 Biology II Lab (BSC2011), Graduate Teaching Assistant  
*University of Central Florida, Orlando, FL*
- 2009-11 Math Tutor  
*Seminole State College, Sanford, FL*

#### **MENTORING**

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Carolina I. Perez (2019- )

B.S. Student, CCNY

- Working on building Ecological Niche Models as part of a project on Atlantic Forest landuse change.*
- Karla Jacome (2019-) B.S. Student, CCNY  
*Working on building Ecological Niche Models as part of a project on Atlantic Forest landscape change. Building a workshop on ENMs for K-12 students*
- Milagros Baylac (2016-2017) B.S. Student, UCF  
*Helped with field collection, genetic data collection, and organization on a project examining Plestiodon egregius conservation genetics. Currently applying for PhD programs.*
- Samantha Dillion (2016-2017) B.S. Student, UCF  
*Helped with field collection, genetic data collection, and organization on a project examining Plestiodon egregius conservation genetics. Currently a field technician for Virginia Department of Game and Inland Fisheries*
- Steffany Medina (2016-2017) B.S. Student, UCF  
*Collected morphological data from museum specimens on a project examining Plestiodon egregius conservation genetics.*

#### **OUTREACH AND LEADERSHIP**

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- 2020 Presenter, Biogeography at CCNY: the world meets in the city that never sleeps.  
<https://www.youtube.com/watch?v=pSVvwZ5qdBI>  
*Humboldt Day 2020, International Biogeography Society*
- 2020 Lead Organizer, Graduate School Information Session for EEB Programs  
*City College of New York, New York, NY*
- 2019-21 Student Representative, EEB Subprogram Advisory Committee  
*City University of New York, New York, NY*
- 2018-19 Volunteer, Discovery Room  
*American Museum of Natural History, New York, NY*
- 2017 Judge, Undergraduate research lightning talks  
*Eureka Research Society, University of Central Florida, Orlando, FL*
- 2016-17 President, Biology Graduate Student Association  
*University of Central Florida, Orlando, FL*
- 2016-17 BIOTEC camp instructor in evolution and genetics (Biology Integrated Orlando Training and Enrichment)  
*Weeklong camp to prepare high school students to excel in biology, Orlando, FL*
- 2016 Herpetology/science education outreach  
*Orange County Youth Shelter, Orlando, FL*
- 2015 Science fair judge  
*Rock Lake Middle School Science Fair, Longwood, FL*
- 2014 Volunteer Animal Care Technician  
*Back to Nature Wildlife Refuge, Orlando, FL*

#### **PROFESSIONAL MEMBERSHIPS**

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- 2020 The Botanical Society of America
- 2017-20 Society for the Study of Evolution
- 2017-20 Society of Systematic Biologists
- 2016-17 Society for the Study of Amphibians and Reptiles

## **SKILLS**

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### **Laboratory**

Dissection/tissue collection  
DNA & RNA extraction  
Gel electrophoresis  
Polymerase chain reaction  
Double digest RADseq

### **Field**

Cover board collection for herps  
Drift fence/pitfall collection for herps  
Radio telemetry  
Transect surveys

### **Analytical**

Microsatellite scoring & analysis  
Phylogenetic reconstruction  
Ecological niche modeling  
General statistics  
GIS  
R

### **Administrative**

IACUC preparation  
Grant Management

## **REFERENCES**

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Dr. Ana Carolina Carnaval – PhD Advisor  
Associate Professor, Department of Biology  
City College of New York, CUNY, New York, NY 10031  
acarnaval@ccny.cuny.edu, 212-650-5099

Dr. Fabian Michelangeli – PhD Committee Member  
Curator, Institute of Systematic Botany  
New York Botanical Gardens, Bronx, NY 10458  
fabian@nybg.com, 718-817-8199

Dr. Christopher L. Parkinson – MS Advisor  
Professor, Department of Biological Sciences &  
Wildlife and Fisheries Biology  
Clemson University, Clemson, SC 32816  
Viper@clemson.edu, 864-656-3058