Kathryn P. Mercier

City College of New York   kmercier@gradcenter.cuny.edu
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EDUCATION

City University of New York (CUNY) Graduate Center
      PhD in Biology, Advisor: Ana Carolina Carnaval   Expected 2024
        Dissertation: Linking species distributions and diversity with
        environmental change; from past to future and theory to practice
University of Central Florida (UCF)
      M.Sc. in Biology, Advisor: Christopher L. Parkinson   2018
        Thesis: Phylogeographic patterns of divergence within *Plestiodon egregius*
      B.S in Psychology with Minor in Mathematics   2012
Seminole State College of Florida (SSC)
      A.A. in General Education   2009

RESEARCH AND PROFESSIONAL EXPERIENCE

Graduate Research Assistant, City College of New York   2021-22
Graduate Levine Fellow, City College of New York   2019-20
Graduate Assistant, Graduate Center at the City University of New York   2018-19
Graduate Research Assistant, University of Central Florida   2017-18
      Evaluating Mole Skink and Salt Marsh Snake sub-specific taxonomy in Florida using
      genomics, USFWS
Technical Team Advisory Member, United States Fish and Wildlife Service   2017
      Cedar Keys Mole Skink species status assessment
Technical Team Advisory Member, United States Fish and Wildlife Service   2016
      Florida Keys Mole Skink species status assessment
Graduate Teaching Assistant, University of Central Florida   2015-16
Graduate Research Assistant, University of Central Florida   2015
      Population structure and genetic diversity of *Crassostrea virginica* in
      Apalachicola Bay, FL.
Undergraduate Research Assistant, University of Central Florida   2014
      Evaluation of high-resolution aerial images for sea turtle nest monitoring.
Undergraduate NSF CSUMS Researcher, University of Central Florida   2011
      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.
Mercier KP, Vasconcellos MM, Martins EGA, Pirani JR, Michelangeli FA, Carnaval AC. 2022.
      Linking environmental stability with genetic diversity and population structure in two
      Atlantic Forest palm trees. Journal of Biogeography. https://doi.org/10.1111/jbi.14523

Jenkins DG, Ohyama L, López-Borghesi F, Hart JD, Bogotá-Gregory JD, Rautsaw RM, Correa Roldán V, Guilfoyle K, Jarvis A, Loch J, **Mercier KP**, Myers O, Shaw R, Volk D, Bard AM. 2021. Biogeography and predictors of wildlife killed on roads at peninsular Florida State Parks. Ecology and Evolution. https://doi.org/10.1002/ece3.7743

Rautsaw RM, Schramer TD, Acuña R, Arick LN, DiMeo M, **Mercier KP**, Schrum M, Mason AJ, Margres MJ, Strickland JL, Parkinson CL. 2021. Genomic adaptations to salinity resist gene flow in the evolution of Floridian watersnakes. Molecular Biology and Evolution. 38(3): 745–760 https://doi.org/10.1093/molbev/msaa266

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. https://www.jstor.org/stable/26361328

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. https://doi.org/10.13001/1081-3810.3218

GRANTS

New York Botanical Garden - $1826   2021
> *Maxwell/Hanrahan Awards in Field Biology,* Harnessing evolutionary theory to improve models of biodiversity: A case study in *Asimina*

Graduate Center - City University of New York, *New York, NY* - $2000   2021
> *Early Research Initiative Catalyst Grant*, Harnessing evolutionary theory to improve models of biodiversity: a case study in *Asimina* (pawpaw).

Society for the Study of Evolution   Not Awarded 2020
> *RC Lewontin Early Award*, Harnessing evolutionary theory to improve models of biodiversity: a case study in *Asimina*

Graduate Center - City University of New York, *New York, NY* - $1500   2020
> *Doctoral Student Research Grant,* Systematics and niche evolution in *Asimina*, insights for conservation

Advanced Science Research Center of the City University of New York - $15,000   2019
> *ASRC Seed grant program*, Harnessing ecophysiology and evolutionary theory to improve models of biodiversity and ecosystem function

New York Botanical Garden, *Bronx, NY* - $1970^   2019
> *Cullman Program in Botanical Systematics*, Harnessing big data and evolutionary theory to predict species ranges and enhance conservation

City College of New York, *New York City, NY* - $2500   2018
> *Biodiversity Under Environmental Change Seed Grant,* Can trait-based hypotheses shed light on phylogeographic discordance?

Sigma Xi   Not awarded 2016
> *Grant-in-aid of research,* Unearthing the Evolutionary History of Mole Skinks

FELLOWSHIPS

CUNY Graduate Center, New York, NY   Not awarded 2021
> *GC Science Communications Fellowship Program*

NOAA Sea Grant   Not awarded 2021
> *John A. Knauss Marine Policy Fellowship Program*

Google Research   Not awarded 2020

PhD Fellowship, Improving biodiversity prediction algorithms and enhancing
        conservation by harnessing big data and evolutionary theory
Provosts Office – City University of New York, *New York, NY* - $5000   2020
        Provosts Pre-Dissertation Science Research Fellowship, Harnessing evolutionary theory
        to improve models of biodiversity: a case study in *Asimina* (Pawpaw)
Microsoft Research   Not awarded 2019
        Ada Lovelace Fellowship, Harnessing big data and evolutionary theory to improve
        models of biodiversity and enhance conservation
City College of New York, Division of Science, *New York City, NY* - $32,000   2018
        Levine Fellowship
University of Central Florida College of Graduate Studies, *Orlando, FL* - $12,000   2015
        Graduate Dean's Fellowship
National Science Foundation   Not awarded 2015
        Graduate Research Fellowship, Where the wild skinks roam: Modeling evolutionary
        trajectories using paleoclimate data and phylogeography
University of Central Florida Department of Mathematics, *Orlando, FL* - $10,000   2011
        GAUSS Fellow – A National Science Foundation CSUMS Program

TRAVEL AWARDS
City University of New York, *New York, NY*   Not Awarded 2019
        Amie James Travel Award
Summer Institute in Statistical Genetics, University of Washington, *Seattle, WA* - $1725   2019
        Department of Biostatistics Scholarship to attend three modules: Conservation Genetics,
        Population Genetics, and Statistical Genetics
University of Central Florida College of Graduate Studies, *Orlando, FL* - $500   2017
        Graduate Presentation Fellowship
University of Central Florida Department of Biology, *Orlando, FL* - $800   2017
        Student Travel Award
University of Central Florida Department of Biology, *Orlando, FL* - $400   2016
        Student Travel Award
American Society of Ichthyologists and Herpetologists - $600   2016
        Graduate Student Travel Award

INVITED PRESENTATIONS
Mercier KP. Predicting the future with Pawpaw. 2021. Torrey Botanical Society Lecture.
        Virtual
Mercier KP. How to predict species distributions in the near future (using Pawpaw). 2020.
        Class Lecture, City College Undergrad Ecology and Evolution (BIO228). *New York, NY*
Mercier KP, Vasconcellos MM, Michelangeli FA, Carnaval AC. 2019. 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
Mercier KP, Michelangeli FA, Carnaval AC. 2022. Predicting the future with Pawpaw, *Asimina
        reticulata*. Botany Meeting. Anchorage, Alaska.

Mercier KP, Vasconcellos MM, Martins EGA, Pirani JR, Michelangeli FA, Carnaval AC. 2020. Historical stability impacts population dynamics of two Brazilian palm tree species. CUNY Graduate Center Sciences Virtual Student Orientation, *New York, NY.*

Perez CI*, **Mercier KP**, and Carnaval AC. 2020. 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*. Presentation Award in Biology, Biotech, Chemistry and Applications

Jacome K*, **Mercier KP**, and Carnaval AC. 2020. 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.*

Perez CI*, **Mercier KP**, and Carnaval AC. 2019. 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*.

Jacome K*, **Mercier KP**, and Carnaval AC. 2019. 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*.

Mercier KP, Vasconcellos MM, Martins EGA, Pirani JR, Michelangeli FA, Carnaval AC. 2019. Historical stability impacts population dynamics of two Brazilian palm tree species. Evolution Meeting, *Providence, RI.*

Mercier KP, Vasconcellos MM, Michelangeli FA, Carnaval AC. 2019. Climate variability impacts on Brazilian palm tree population dynamics. CUNY Biology EEB Research Symposium, *New York, NY.*

Mercier KP, Parkinson CL. 2018. Digging up the phylogenetics and population structure of a fossorial skink, *Plestiodon egregius.* Society of Systematic Biology Meeting, *Columbus, OH*.

Baylac M*, **Mercier KP**, Parkinson CL. 2017. Investigating the evolutionary relationships of Mole Skinks in Florida. Showcase of Undergraduate Research, University of Central Florida, *Orlando, FL*. Judges choice in life sciences

Mercier KP, Baylac M*, Parkinson CL. 2017. Using hypothesis testing to unearth phylogeographic patterns within Mole Skinks. Evolution Meeting, *Portland, OR*.

DiMeo MA, Arick LN, Hickson JB, Mason AJ, **Mercier KP**, Rautsaw RM, Strickland JL, Territo GP, Parkinson CL. 2017. 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

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. 2017. Toward a macroecology of roadkill. Conference of the International Biogeography Society, *Tucson, TX*.

Mercier KP, Baylac M*, Parkinson CL. 2016. 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

Mercier KP, Parkinson CL. 2016. Unearthing the evolutionary history of Mole Skinks. Southeastern Ecology and Evolution Conference, *Tallahassee, FL*.

Baylac M*, **Mercier KP**, Parkinson CL. 2016. Investigating the evolutionary relationships of mole skinks. Summer Undergraduate Research Fellowship Symposium, University of Central Florida, *Orlando, FL*.

Crawford L, **Mercier KP**, Burgess M, Castro J, Percival F, Schwoerer M, Tappen M, Von Holle B, Weishampel J. 2014. Evaluation of high-resolution aerial images for Sea Turtle nest monitoring. Showcase of Undergraduate Research Excellence, *Orlando, FL.*

Mercier KP, Boas T, Niederman E, Li X. 2011. 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

Science, Art, and You: Harnessing Creativity from Process to Project (4 hours). Botany Meeting, *Anchorage, AK.* July 24, 2022.

Early Career Workshop (7 hours), Ecological Forecasting Initiative, https://ecoforecast.org/ecological-forecasting-early-career-annual-meeting, *Virtual.* June 14-15, 2021.

Reproducibility for Everyone (2 hours), ECR^2 Presented by Society for the Study of Evolution (SSE), the American Society of Naturalists (ASN), and the Society of Systematic Biologists (SSB), *Virtual.* Aug 26, 2020.

Strategies for Responding to Harassment and Bullying: Improving Workplace Climate (2 hours), ECR^2 Presented by Society for the Study of Evolution (SSE), the American Society of Naturalists (ASN), and the Society of Systematic Biologists (SSB), *Virtual.* July 24, 2020.

Posterior Predictive Simulation with P2C2M (3 hours), Society for Systematic Biology Meeting, University of Florida, *Gainesville, FL.* Jan 3, 2020.

Open Tree of Life, Society for Systematic Biology Meeting (3 hours) , University of Florida, *Gainesville, FL.* Jan 3, 2020.

SLiM Workshop (40 hours), City College of New York, *New York, NY.* Nov 4-8, 2019.

RADcamp (28 hours), Columbia University, *New York, NY.* Sept 14-15 & Oct 12-13, 2019

Summer Institute in Statistical Genetics, Department of Biostatistics, University of Washington, *Seattle, WA.* July 8-12 & July 17-19, 2019.

New developments in phylogenetics and evolution (8 hours), Society for Systematic Biology, Evolution Meeting, *Providence, RI.* June 21, 2019.

RADCamp (19.5 hours), AFBiota Meeting, *Sao Paulo, Brazil.* July 16-18, 2018

Random Forests and Predictive Phylogeography (4 hours), Society for Systematic Biology Annual Meeting, *Columbus, OH.* June 1, 2018.

Using R for Comparative Phylogenetics and Niche Modeling (8 hours), Joint Meeting of Ichthyologists and Herpetologists, *New Orleans, LA.* July 6, 2016.

Preparing Tomorrow's Faculty (18 hours), University of Central Florida, *Orlando, FL.* May 29 – Aug 7, 2015 (Meetings twice monthly)

TEACHING

Ecology and Evolution Lab (BIO228), Graduate Teaching Assistant	Spring 2022
City College of New York, New York, NY	
Ecology and Evolution Lab (BIO228), Graduate Teaching Assistant	Fall 2020
City College of New York, New York, NY	
Evolutionary Biology (PCB4683), Laboratory Instructor of Record	Fall 2016
University of Central Florida, Orlando, FL	
Biology II Lab (BSC2011), Graduate Teaching Assistant	Fall 2015 & Spring 2016

University of Central Florida, Orlando, FL
Math Tutor   2009-2011
Seminole State College, Sanford, FL

MENTORING

Carolina I. Perez (B.S. Student, CCNY)   2019-2020
Building Ecological Niche Models as part of a project on Atlantic Forest land use change.
Karla Jacome (B.S. Student, CCNY)   2019-2020
Building a workshop on Ecological Niche Models for K-12 students
Milagros Baylac (B.S. Student, UCF)   2016-2017
Helped with field collection, genetic data collection, and organization on a project examining Plestiodon egregius *conservation genetics.*
Samantha Dillion (B.S. Student, UCF)   2016-2017
Helped with field collection, genetic data collection, and organization on a project examining Plestiodon egregius *conservation genetics.*
Steffany Medina (B.S. Student, UCF)   2016-2017
Collected morphological data from museum specimens on a project examining Plestiodon egregius *conservation genetics.*

OUTREACH, SERVICE, AND LEADERSHIP

Student Representative, Program Executive Committee   2022
City University of New York, New York, NY
CUNY Research Scholars Program Presentation Judge   2021
City University of New York, Virtual
Student Representative, Subprogram Advisory Committee   2019-21
City University of New York, New York, NY
Presenter, Biogeography at CCNY: the world meets in the city that never sleeps.   2020
https://www.youtube.com/watch?v=pSVvwZ5qdBI
Humboldt Day 2020, International Biogeography Society, Virtual
Organizer, Beat the Burnout   2020
City College of New York, Virtual
Lead Organizer, Graduate School Information Session for EEB Programs   2020
City College of New York, Virtual
Committee Member, Biology Department Nominations Committee   2019-20
CUNY Graduate Center, New York, NY
Volunteer, Discovery Room   2018-19
American Museum of Natural History, New York, NY
Judge, Undergraduate research lightning talks   2017
Eureka Research Society, University of Central Florida, Orlando, FL
President, Biology Graduate Student Association   2016-17
University of Central Florida, Orlando, FL
BIOTEC instructor in evolution and genetics   2016-17
Weeklong camp to prepare high school students to excel in biology, Orlando, FL
(Biology Integrated Orlando Training and Enrichment Camp)
Herpetology/science education outreach   2016
Orange County Youth Shelter, Orlando, FL
Science fair judge 2015

Rock Lake Middle School Science Fair, Longwood, FL
Volunteer Animal Care Technician   2014
Back to Nature Wildlife Refuge, Orlando, FL

PROFESSIONAL MEMBERSHIPS

The Botanical Society of America   2020-22
Society for the Study of Evolution   2017-20
Society of Systematic Biologists   2017-20
Society for the Study of Amphibians and Reptiles   2016-17

SKILLS

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
Microsoft Word, Excel, and PowerPoint
GIS in qGIS and ArcMap
R Statistical Computing
Ecological niche modeling
Microsatellite scoring & analysis
Phylogenetic reconstruction

Administrative
IACUC preparation
Grant Management

REFERENCES

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