Beth E. Gerstner, M.S.

Curriculum vitae

Department of Fisheries and Wildlife
Michigan State University
Natural Resources Building
480 Wilson Rd, East Lansing, MI 48824
Cell Phone: 347-490-5328
bgerstner90@gmail.com

CAREER OBJECTIVES: Research and education in ecology and conservation science, especially regarding the impacts of global change. I aim to apply the knowledge gained through my studies and professional experience to help protect biodiversity through the establishment of conservation actions.

EDUCATION:

Michigan State University, East Lansing, MI — **Ph.D. Fisheries &Widlife**
Advisor: Phoebe Zarnetske — Anticipated graduation: 2022

City College of New York: New York, NY — **M.S. in Biology**
Cumulative GPA: 3.86 — Graduation: September 2016
Advisor: Robert P. Anderson
Thesis: Revised distributional estimates for the recently discovered olinguito (*Bassaricyon neblina*), using museum and citizen science records

Stony Brook University: Stony Brook, NY — **B.S. in Biology**
Cumulative GPA: 3.38 — Graduation: May 2012

AWARDS & GRANTS:

MSU Enrichment Fellowship (April 2017)– 2 years of full funding without teaching obligations

CCNY Professor Martin Sacks/Sylvia F. Rubin Award (May 2016) – greatest proficiency in environmental research

CCNY Women in Science Grant (March 2016) – to attend Student Conference on Conservation Sciences at the American Museum of Natural History- $200

RESEARCH EXPERIENCE:

Michigan State University, East Lansing, MI
Graduate Assistant: Dr. Phoebe Zarnetske (May 2017 - Present)

- Conducting research that aims to understand the effects of global change on biodiversity by combining insights from citizen science, environmental policy, and species distribution modeling.

The City College of New York, New York, NY
Ongoing Research Projects, Supervisor: Dr. Robert P. Anderson (September 2016 – May 2017)

- Performing a conservation assessment for a new species of mammal, *Bassaricyon neblina* (Olinguito), found in the Northern Andes, taking into account both deforestation and climate change.
- Assisting on two projects led by post-doc Lázaro Guevara:
    - Testing niche conservatism in small-eared shrews (Mammalia, genus *Cryptotis*) in the Mesoamerican highlands.
    - Evaluating the effect of the past climate change on the evolution and biogeography of shrews in montane humid forests from northern Mesoamerica.

The City College of New York, New York, NY
Master's Researcher, Advisor: Dr. Robert P. Anderson (February 2014-August 2016)

- Generating distributional estimates a new species of mammal, *Bassaricyon neblina* (Olinguito), using both citizen science and museum data.
- Visiting relevant museums to collect verbatim locality information for *Bassaricyon neblina* specimens.
- Close mentoring of undergraduate student on her own research project.
    - Mentee - Maria Gavrutenko (graduated 2015)
- Leading and organizing weekly lab meetings (four consecutive semesters).
- Building and designing lab website on Wix (andersonlab.ccny.cuny.edu).

American Museum of Natural History, New York, NY
Mammalogy Research Volunteer, Supervisor: Dr. Paúl Velazco (September 2012-November 2012, September 2013-January 2014)

- Handled and photographed phyllostomid bat skull specimens and uploaded them onto an online database.
- Depicted morphological characteristics of teeth and mapped these onto their corresponding images on the online database.
- Took measurements of bat skulls and teeth for an analysis of their dietary origins (Yohe et al. 2015, Biology Letters; see **Publications**).
- Sorted and identified bat fossils from Oleg's Bat Cave of the Dominican Republic.

Stony Brook University, Stony Brook, NY
Research Assistant: Phyllostomid Bat Project, Supervisor: Dr. Liliana Dávalos (September 2011-May 2012)

- Used the statistical program 'R' to evaluate 1000 phyllostomid bat phylogenies and prepare each tree for a comprehensive analysis of the bat's dietary origins and respective rates of species divergence.

PEER-REVIEWED PUBLICATIONS:

Published:

Yohe, L. R., Velazco, P. M., Rojas, D., **Gerstner, B. E.**, Simmons, N. B., & Dávalos, L. M. (2015). Bayesian hierarchical models suggest oldest known plant-visiting bat was omnivorous. *Biology Letters*, 11(11), 20150501.

In Review:

Gerstner, B.E.., Kass, J.M., Kays, R.W., Anderson, R.P.. Revised distributional estimates for the recently discovered olinguito (*Bassaricyon neblina*), using museum and citizen science records. Submitted to *Journal of Mammalogy*.

In preparation:

Guevara, L., **Gerstner, B.E**., Kass, J.M., Anderson, R.P. Toward ecologically realistic distributional predictions: a cross-time example from tropical montane cloud forests. For submission to *Ecology Letters*.

Gerstner, B.E., Gavrutenko, M., Goodman, S.M., Jansa, S.A., Anderon, R.P., Conservation assessment for an endemic malagasy rodent, *Gymnuromys roberti* (Rodentia: Nesomyidae), using ecological niche models and forest cover data. For submission to *Methods in Ecology and Evolution.*

ORAL PRESENTATIONS:

Scientific Meetings:

Museum and citizen science records change distributional estimates for the olinguito. Student Conference on Conservation Science, 20-22 October 2016, American Museum of Natural History, Center for Biodiversity and Conservation, New York, New York. **B.E. Gerstner**, J.M. Kass, K.M. Helgen, R.W. Kays, R.P. Anderson.

Museum and citizen science records change distributional estimates for the olinguito (*Bassaricyon neblina*). 96th Annual Meeting, American Society of Mammalogists, 24-28 June 2016, University of Minnesota, Minneapolis, Minnesota. **B.E. Gerstner**, K.M. Helgen, R.W. Kays, J.M. Kass, R.P. Anderson.

Distributional estimates for *Bassaricyon neblina* (Olinguito) in the Northern Andes. Student Conference on Conservation Science, 7-9 October 2015, American Museum of Natural History, Center for Biodiversity and Conservation, New York, New York. **B.E. Gerstner**, M. Gavrutenko, K.M. Helgen, R.W. Kays, R.P. Anderson.

Using niche models, forest-cover data, and future climatic forecasts in conservation assessments: an example for an endemic Malagasy rodent (*Gymnuromys roberti*). M. Gavrutenko, **B. E. Gerstner**, S. M. Goodman, and R. P. Anderson. Natural History of Madagascar Symposium, September 20th 2015, Bruce Museum, Greenwich, Connecticut. Presented by R. P. Anderson

Distributional estimates for a new mammal species, the Olinguito (*Bassaricyon neblina*), using new localities, ecological niche models and forest cover data. 100th Annual Meeting, Ecological Society of America, 9–14 August 2015, Baltimore, Maryland. **B.E. Gerstner**,

M. Gavrutenko, K.M. Helgen, R.W. Kays, R.P. Anderson.

Conservation assessment for an endemic Malagasy rodent, *Gymnuromys roberti* (Family Nesomyidae), using ecological niche models and forest cover data. 100th Annual Meeting, Ecological Society of America, 9–14 August 2015, Baltimore, Maryland. M. Gavrutenko, **B.E. Gerstner**, S.M Goodman, R.P. Anderson. Presented by Maria Gavrutenko.

Other:

Revised distributional estimates for the recently discovered olinguito (*Bassaricyon neblina*), using museum and citizen science records. Department of Biology, The City College of New York, City University of New York, July 25th 2016. **B.E. Gerstner** (Master's Defense)

Museum and citizen science records change distributional estimates for the olinguito (*Bassaricyon neblina*). The City College of New York, City University of New York. April 5th, 2016. **B.E. Gerstner**, Guest Lecturer for Zoogeography Class (BIO V/79012).

Ecological niche models in conservation biology. The City College of New York, City University of New York. October 27th, 2015. **B.E. Gerstner**, Guest Lecturer for Biogeography Class (BIO 45800/A4580)

Using forest cover data to make more realistic estimates of suitability for highland forest mammals. New York Regional Species Distribution Modeling Discussion Group, The American Museum of Natural History, NY, NY, September 18th 2015. **B.E. Gerstner**, M. Gavrutenko, S.M. Goodman, K.M. Helgen, R.W. Kays, R.P. Anderson. Presented by B.E. Gerstner and M. Gavrutenko.

POSTER PRESENTATIONS:

Conservation assessment for an endemic Malagasy rodent (*Gymnuromys roberti*) and recommendation of new niche modeling software to facilitate such studies. International Biogeography Society Conference, 9-13 January 2017, Tucson, Arizona. **B.E. Gerstner**, M. Gavrutenko, J.M. Kass, S.M. Goodman, R.P. Anderson.

Conservation assessment for an endemic Malagasy rodent, *Gymnuromys roberti* (Family Nesomyidae), using ecological niche models and forest cover data. CCNY Biology Department Honors Research Presentations, March 26, 2015. New York, New York. M. Gavrutenko, **B.E. Gerstner**, S.M. Goodman, and R.P. Anderson. Presented by Maria Gavrutenko.

Preliminary conservation assessment for an endemic Malagasy rodent *Gymnuromys roberti* using ecological niche models and forest cover data. City College Academy for Professional Preparation 2014 Annual Poster Presentation, November 20th 2014, New York, NY. M. Gavrutenko, **B.E. Gerstner**, and R.P. Anderson. Presented by Maria Gavrutenko.

TEACHING EXPERIENCE:

The City College of New York, New York, NY
Adjunct Lecturer, Foundations of Biology II Lab (February 2014-May 2014, February 2015-May 2015, February 2016- May 2016, February 2017-May 2017)

- Guided students through each lab, explaining core concepts fundamental to biology.
- Instructed students in how to use relevant equipment (i.e. microscopes, probes, etc.).
- Coached students on the best practices in writing for science.
- Prepared and graded quizzes, exams and lab reports.

The City College of New York, New York, NY
*Adjunct Lecturer, Organismal Biology Lab (*June 2014-July 2014, August 2014-December 2014, June 2015-August 2015, August 2015-December 2015, June 2016-August 2016, August 2016-December 2016)

- Facilitated each lab, explaining physiological adaptations that terrestrial, aquatic and marine organisms have to their different environments.
- Instructed students in how to use relevant equipment (i.e. transducers, interfaces, etc.).
- Coached students on the best practices in writing for science.
- Prepared and graded exams and quizzes and graded tutorials and lab reports.

Smarten Up Learning, New York, NY
Tutor (January 2015-October 2015)

- Instruct non-traditional learners in techniques to develop better organizational and executive functioning skills.
- Generate weekly lesson plans.
- Track long-term progress, strengths and weaknesses through weekly session reports.
- Act as liaison for parents, teachers, and students.

American Museum of Natural History, New York, NY
Instructor, CTY Poison Workshop, (March 8th, 2014)

- Guided students (ages 8-12) and parents participating in the Johns Hopkins Center for Talented Youth program, through a famous case of cyanide poisoning in an hour-long workshop.
- Facilitated a mock experiment known as the 'Prussian Blue' test to test for cyanide.
- Answered targeted questions on the mechanisms of poisoning from both students and parents.

Stony Brook University, Stony Brook, NY
Chordate Zoology Lab Teaching Assistant, (January 2012-May 2012)

- Aided the instructors in labs and prepared specimens.

- Guided students through the lab and assisted with mink dissections.

University of the Sciences in Philadelphia, Philadelphia, PA
Introductory Biology Lab 1 & 2 Teaching Assistant, (September 2009-May 2010)
- Prepared experiments before each lab.
- Aided the instructors in labs and answered questions from students, guiding students through each lab. Assisted in grading of term project.

University of the Sciences in Philadelphia, Philadelphia, PA
Introductory Biology Tutor, (September 2009-June 2010)
- Explained course material to students, demystifying subjects that the students found difficult.
- Held two tutoring sessions of six students per week.
- Coached students in helpful testing techniques for the class.

OTHER PROFESSIONAL EXPERIENCE:

The City College of New York, New York, NY
Laboratory Technician, Supervisor: Ana Carnaval (August 2015-May 2017)
- Provide help with databasing, web-site maintenance and network assistance for the lab
- Aid in specimen curation and the ordering of materials.

American Museum of Natural History, New York, NY
Poison Lab Presenter, The Power of Poison Exhibit (October 2013-June 2014)
- Engaged museum visitors in a 15-minute interactive presentation on the history of toxicology, 20 hrs a week.
- Demystified questions on the history of poisons, as well as their effects on human biology.
- Presentations were given every half hour and each was tailored to the specific audience.

American Museum of Natural History, New York, NY
Invertebrate Paleontology Intern, (June 2013-August 2013)
- Participated in an NSF-funded project to upgrade the microfossil collections in the Invertebrate Paleontology Department.
- Rehoused, conserved, databased (using Panorama) and in some cases identified microfossils from the classes Foraminifera and Ostrocoda.
- Used microscope camera to photograph holotype specimens and edit the images in Photoshop.

American Museum of Natural History, New York, NY
Sackler Human Evolution Lab Volunteer, (August 2012-Feb 2013)
- Maintained the Sackler lab classroom and prepared tables for the day's activities.
- Educated museum visitors, child and adult, in the different aspects of human evolution.

American Museum of Natural History, New York, NY

MEEP Intern: Department of Youth Initiatives, (June 2012-August 2012)

- Developed a comprehensive tour of the museum based on animal adaptations to be administered to camp groups, 20 hrs a week, throughout the summer.
- Facilitated hands-on learning while working on education carts within each of the different museum halls.
- Practiced inquiry-based education while giving tours and working on carts.

Stony Brook University, Stony Brook, NY

Resident Assistant, (September 2011-June 2012)

- Provided administrative support for the residential community.
- Planned and executed educational/social programming both on my own and with the help of other RAs.
- Educated residents on campus about community resources and promoted a safe & healthy living environment.

Staten Island Zoo, Staten Island, NY

Animal Care Intern, (June 2011-August 2011)

- Assisted the Zoo's Animal Department with the aspects of daily husbandry and routine care of its entire collection.
- Maintained species life history journal for every animal interacted with at the Staten Island Zoo for review of the Supervisor of Menagerie, Cathy Eser.

SERVICES AND ACTIVITIES

Memberships in Professional Societies

American Society of Mammalogists
Society for Conservation Biology
International Biogeography Society

Leadership

Graduate Panel, Graduate Student Open House, City College of New York (October 20th, 2016)

- Division of Sciences Panelist
  - Chosen as the graduate student to represent the Division of Sciences for the Graduate Student Panel at the admissions open house.
  - One student was chosen from each of the 8 divisions of study within City College's Graduate Program.
  - Discuss experience as a Master's student within the sciences with a large audience of potential graduate students to inspire their application.

City College of New York's Women in Science (WinS) Group (August 2014- May 2017)

- Executive Board Member: Director of Mentoring
  - Pair students and faculty at all levels of higher education for our mentoring program to help foster relationships between women in science

and help support those struggling with issues particular to women scientists.
    - Mentoring female undergraduate students in support of their future scientific careers.
    - Assist in planning and implementing of WinS events.
    - Liaison to AMNH Women in Science group.

Macaulay Honors BioBlitz (August 2014, August 2015, September 2016)

- Taxon Leader (Insects)
    - Guide students through insect sampling techniques, lead group expeditions, and manage those specimens collected at the New York Botanical Garden (2014), Freshkills Park (2015), Brooklyn Bridge Park (2016).
    - Part of a larger sampling effort with the goal of assessing the biodiversity of NYC parks.

GBIF Symposium and Panel Discussion, Center for Biodiversity and Conservation, AMNH

- Question Presenter
    - Worked on a team of two other ecologists to choose, field and present questions to panelists on GBIF data (from people tuning in via the web) for the GBIF Symposium at the American Museum of Natural History.
- "Symposium and Panel Discussion: Frontiers of biodiversity informatics and modeling species distributions" (M. E. Blair, R. P. Anderson, and D. Schigel, organizers). Global Biodiversity Information Facility and American Museum of Natural History, November 4th 2015, New York, New York.

PROFESSIONAL SKILLS

- *Computer software*: ArcGIS Suite, R, Microsoft Office Suite, Panorama Database Software
- *Website design and maintenance.*
- *Experience using museum collections, databases, and archives.*
- *Experience handling and measuring fragile museum specimens.*
- *Nature illustration.*

PROFESSIONAL REFERENCES

Robert P. Anderson, Ph.D., Professor
Department of Biology
City College of New York, City University of New York
Marshak Science Building, Room J-526
160 Convent Ave, New York, NY 10031
Tel: (212) 650- 8504
randerson@sci.ccny.cuny.edu
Relationship: Master's Advisor

Ana Carnaval, Ph.D., Professor
Department of Biology
City College of New York, City University of New York
Marshak Science Building, Room J-526
160 Convent Ave, New York, NY 10031
carolinacarnaval@gmail.com
Relationship: Master's Thesis Committee Member

Mary Blair, Ph.D., Director, Biodiversity Informatics Research
Center for Biodiversity and Conservation (CBC)
And Affiliated Professor, Richard Gilder Graduate School
American Museum of Natural History
Tel: (212) 313-7077
mblair1@amnh.org
Relationship: Master's Thesis Committee Member