HOLLY MILTON BROWN

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PROFESSIONAL INTERESTS

Behavioral and sensory ecology. Formal and informal science education, including citizen science. Promoting diversity in STEM.

EDUCATION

Ph.D. candidate, University of Connecticut (Storrs, CT)
Aug 2011-present
Area of Specialization: Ecology and Evolutionary Biology
Advisor: Margaret Rubega
Committee: Margaret Rubega, Eric Schultz, Eldridge Adams, Heidi Dierssen, Andrew Moiseff

M.A. in Teaching, State University of New York at Stony Brook (Stony Brook, NY)
Jan 2004-May 2005

B.A. in Biology, St. Olaf College (Northfield, MN)
Sep 1999-May 2003

Stuyvesant High School (New York, NY)
Sep 1995-Jun 1999

RESEARCH EXPERIENCE

PhD Candidate, University of Connecticut (Storrs, CT)
May 2013-present
Use behavioral observations, high-speed digital video, and 3D reconstruction of foraging postures investigate foraging behavior of herons, and how they hunt successfully in spite of visual challenges at the air-water interface. High-speed digital video also allows me to investigate prey response, and how prey behavior might drive some heron foraging behaviors.

Research Assistant, University of Connecticut (Storrs, CT)
Apr 2012-Aug 2012
Conducted fixed-position point counts, and behavioral observations of Chimney Swifts at roosting and nesting sites, under my advisor, Dr. Margaret Rubega. Engaged in informal public

education during several surveys per week, as this field work was done in densely populated towns. Developed a curriculum for a web-based conservation science program for high school students using Chimney Swifts as a case study.

Student, Organization for Tropical Studies (Costa Rica)
Feb 2012-Apr 2012
Participated in an intensive field biology course, completing 8 projects in 8 weeks, from start to finish (i.e., from posing a question, to designing and implementing methods, to analyzing the data with statistics in R, to writing papers and presenting results in front of peers). Project categories included: methodological studies (e.g., comparing detection of birds by walking line transects vs. mist netting); foraging ecology and behavioral studies (e.g., investigating faithfulness of long-billed hummingbirds to specific flowers by using a dissecting microscope to examine morphologies of pollen grains found on their facial feathers); conservation studies (e.g., investigated average *Nerita* snail sizes and densities along adjacent protected vs. unprotected shorelines); and forensic ecology (e.g., using shapes and sizes of leaf damage to detect different types of insects feeding on native vs introduced *Zingiberales* plants).

Volunteer Research Assistant, Bronx Zoo (Bronx, NY)
Jun 2010-Aug 2011
Conducted a comprehensive literature search and compiled information about all breeding bird surveys ever done at the Bronx Zoo, since the early 1900s, under head ornithologist, Dr. Nancy Clum. Assisted in the choice of Bayesian statistical methods to analyze the data.

Undergraduate Student, St. Olaf College (Northfield, MN)
Feb 2012-Apr 2012
Participated in a semester-long field course in Australia. Projects included several successional and zonation-related studies. Used transects (in conjunction with quadrats, small mammal traps, or mist-nets) to investigate zonation of animal and plant life on rocky shores, sand dunes, scrublands with different controlled burning intervals, and forests along altitudinal gradients.

Research Assistant, Cornell University (Ithaca, NY)
Jun 1998-Aug 1998
Studied motivation of horses to escape enclosures, under animal behavior specialist, Dr. Katherine Houpt.

PROFESSIONAL AWARDS, GRANTS AND FELLOWSHIPS

Career Total: $91,482
2011-2017 / $12,000 annually for 6 years / *Crandall-Cordero Fellowship*, University of CT
2016 / $2000 / *Dissertation Fellowship* / University of CT Graduate School
2016 / $753 / *Zoology Research Award* / Ecology & Evolutionary Biol. Dept., University of CT
2016 / *Ford Foundation Dissertation Fellowship Alternate*, Ford Foundation
2015 / $630 / *Museum of Natural History Award*, University of CT
2015 / $1000 / *Graduate Student Travel Award*, University of CT
2014 / $6500 / *Link Foundation Graduate Research Fellowship*, Smithsonian Institution

2014 / $999 / *Grant-in-aid of Research Award*, Sigma Xi
2014 / $500 / *Broadening Participation Award*, Society for Integrative and Comparative Biol.
2014 / $3,500 / *Summer Fellowship*, Ecology & Evolutionary Biol. Dept., University of CT
2013 / $900 / *Summer Fellowship*, Ecology & Evolutionary Biol. Dept., University of CT
2013 / *Ford Foundation Diversity Fellowship Alternate*, Ford Foundation
2012 / $2700 / *Grant to participate in Organization for Tropical Studies course in Costa Rica* / Ecology & Evolutionary Biol. Dept., University of CT

TEACHING AND OTHER PROFESSIONAL EXPERIENCE

Teaching Assistant, University of Connecticut (Storrs, CT)
Aug 2011-present, Introductory Biology Laboratory for non-science majors, General Ecology Discussion, and Conservation Biology.
I modify lessons to meet the needs of my students.

Guest Lecturer, University of Connecticut (Storrs, CT)
Jun 2016, Animal Behavior Field Course.
Was invited to lead a class trip to my field site, where I spoke about experimental design and overcoming obstacles during fieldwork.

Collections Project Leader, University of Connecticut (Storrs, CT)
Nov-Dec 2013, Jun-Aug 2014, Jun-Aug 2015, April 2016
I was originally placed on a project that entailed tracking down some mammal specimens. During my search, I discovered some fascinating stories in old field journals. In Aug 2014, after tracking down all of the specimens, I pitched an idea to design a new museum-style display case, highlighting some of the stories from the old field journals that showcased both the underappreciated difficulty and the importance of collecting. I completed the display in 2015, and helped to organize a reception in 2016, for the individuals whose stories were highlighted.

Urban Park Ranger, NYC Parks Dept. (New York, NY)
Apr 2006-Feb 2010, January 2011-August 2011
Taught natural science courses to students of all ages. Wrote lesson plans. Subjects taught include general ecology, forest ecology, coastal ecology, conservation, botany, geology, ichthyology, ornithology, entomology, and natural history. Designed and organized new public programs. Revised the official lesson booklet for our most requested program, the ecology course for school groups. Led educational and recreational programs for the general public such as bird-watching, hiking, camping, canoeing, kayaking, fishing, etc. Monitored local wildlife and performed animal rescues. Patrolled city parks, and enforced park rules. Collaborated with other governmental agencies such as FDNY, NYPD, the NYS Department of Environmental Conservation and the Department of Health, in order to best serve the public and protect wildlife. Led long term, volunteer-based projects, including monitoring owl nests, starting a recycling program, creating a composting site, and removing invasive plants. Wrote articles for the Urban Park Rangers and the Pelham Bay Park newsletters. Was promoted to Seasonal Sergeant in 2008. As a Sergeant, I interviewed, hired, trained, and supervised 13 officers who served 4,480 people

over the course of 213 educational programs. Censused endangered flora and fauna while acting as a temporary supervisor at a Piping Plover nesting site.

Education Director, Dyckman Farmhouse Museum, NYC Parks Dept. (New York, NY)
February 2010-December 2010
Coordinated and taught school programs and family workshops, using inquiry and sensory-based teaching techniques. Developed modified lesson plans to meet special needs. Planned and organized special events and cooperative programs with other local organizations. Promoted programs and events in the community. Wrote articles for our blog. Kept track of contacts, invoices and payments through creation and management of digital records.

Residential Counselor, Boys Hope Girls Hope (Brentwood, NY)
June 2005-March 2006
Was responsible for daily operation of house activities in a group home that partnered with a local private high school; the goal of the program was to provide a stable home environment and a stimulating academic setting for troubled but highly intelligent teenage girls. Tutored in high school-level science, including biology, chemistry and physics. Was responsible for budgeting and took initiative to raise extra funds for recreational purposes. Generated reports to keep track of daily activities, as well as monthly and quarterly progress reports.

Student Teacher, SUNY Stony Brook (Stony Brook, NY)
September 2005-June 2005
Student teaching was completed at local middle and high schools. Taught 7th grade Physical Science, 9th grade Honors Biology and 10th grade Living Environment. Used differentiated instruction to teach to students of varying abilities.

Volunteer, Aquatic Pets (Northfield, MN)
January 2000-May 2003
Educated customers about animal care and maintenance. Conducted regular water quality testing.

LICENSES

NYS initial certificates in teaching 7th-12th grade general science and biology

MENTORING

University of CT, 2013-present
Coordinate meetings with 2 Crandall-Cordero Fellows (younger graduate students) and 1 McNair scholar (an undergraduate student), in order to discuss their goals, progress, and general feelings about their academic experiences. I also mentor and train 2 undergraduate research assistants in various techniques for behavioral ecology and digital video analyses.

St. Olaf College, 1999-2003

Through Upward Bound, I mentored and tutored aspiring first generation college students. I worked closely with about 4 or 5 students in particular, tutoring in math, science and French; talking to them about my own college experience, and encouraging them to pursue their biggest goals.

Stuyvesant High School, 1996-1999
Through Black Students League, and the Mentor-Leadership Program, I mentored incoming students from underrepresented backgrounds. This was especially important at a school where for many minorities, it was our first experience in a New York City public school where we made up only 2-3% of the student body.

PROFESSIONAL HONORS

Outstanding Teaching Assistant Award, University of Connecticut, 2016

OTHER HONORS AND AWARDS

Honorable Service Award, NYC Parks Department, 2009
Group Citation Award, NYC Parks Department, 2009
Best of Parks Award (for an educational program), NYC Parks Department, 2008
Beyond the Call [of duty] Award, NYC Parks Department, 2008
Community Service Scholarship, St. Olaf College, 1999-2003
Martin Luther King, Jr. Scholarship, St. Olaf College, 1999-2003

MANUSCRIPTS

Brown, H., A. Kamath, and M. Rubega. The importance of discussing privilege with future conservation practitioners. Submitted to Conservation Biology.

Brown, H., M. Rubega and H. Dierssen. Herons do not mitigate glare by adjusting body orientation during cross-media foraging. In prep, draft available.

Brown, H., M. Rubega, and S. Kearney-McGee. Fun with Forensics in Conservation Science: a conservation science curriculum for high school students using Chimney Swifts as a case study. Complete, awaiting funding for online implementation, draft available.

PRESENTATIONS

Brown, H., M. Rubega and H. Dierssen. Do herons mitigate glare by adjusting body orientation during cross-media foraging? Presented at Society for Integrative and Comparative Biology Conference. Jan. 6, 2016, Portland, OR.

Brown, H., M. Rubega and H. Dierssen. Herons do not mitigate glare by adjusting body orientation during cross-media foraging. Presenting at North American Ornithological Conference. Aug. 16-20, 2016. Washington, DC.

POSTERS

Kearney-McGee, S., N. Hall, M. Rubega, and **H. Brown**. 2012. Poster Session: Swift conservation through schools: capitalizing on the combination of the amazing migratory congregations of Chimney Swifts and their propensity for public buildings to promote conservation. Poster, presented at: NE Bird Conservation/NYSOE Conference. Oct. 16-19, 2012, Plymouth, MA.

PUBLIC OUTREACH

Chimney Swift Conservation Education Night, Willimantic, CT, 2014, 2015, and 2016
Presented information about behavior and conservation of Chimney Swifts at the Willimantic Brewing Company, which has been hosting an annual fundraiser for Chimney Swift conservation. This is a joint effort between the brewery, the University of CT, and the CT state Dept. of Energy and Environmental Protection. The program involves a fundraiser, via sale of a specially brewed beer, and a walking tour where we lead people to two of the largest Chimney Swift roosting sites in town, where we could safely watch hundreds of these little birds engage in their characteristic tornado-like roosting behavior.

CT BioBlitz/Environmental Sciences Magnet School at Mary Hooker, Hartford, CT, 2016
Trained several students from an inner-city middle school to identify common bird and tree species, in order that they could participate more fully in the Connecticut BioBlitz.

Windham High School, Willimantic, CT, 2016.
Took initiative to organize "ask-a-scientist" day in a struggling school. Recruited 13 current and recent graduate students to answer questions from students in 19 science classrooms, about everything from overcoming adversity to get into college, to applying to graduate school, to conducting science.

Smithsonian Marine Station, Open House, Fort Pierce, FL, 2015
Presented my dissertation research to about 200 members of the general public.

Coastal Studies for Girls, Guest Seminar, 2014
Presented my dissertation research to high school-aged girls, at a STEM-immersion semester-long school program.

Franklin Elementary School, 2014
Worked with a local elementary school science teacher to design a supplemental, hands-on ecology program for her 3rd and 4th graders. Recruited volunteers to teach lessons in their areas of expertise.

Wildlife Society Northeast Student Conclave, 2013
Taught bird survey techniques; led a point count survey activity.

Franklin Elementary School, 2012
Designed and taught a lesson on adaptations in birds to 3rd and 4th graders.

Cub Scouts of America, Nescopeck, PA, 2012
Designed and taught a general ecology lesson to Cub Scouts.

MEMBERSHIPS

National Science Teachers Association, 2004-present
American Ornithological Union, 2013-present
Association of Field Ornithologists, 2013-present
Society for Integrative and Comparative Biology, 2013-present
Waterbird Society, 2013-present
Citizen Science Association, 2016-present

REFERENCES

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