

## **Rachael W. Herman**

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### **EDUCATION**

**M.Sc. in Oceanography and Coastal Sciences**  
***Louisiana State University, Baton Rouge, LA***

August 2016

Thesis: Investigating species- and population-level foraging variation and individual specialization in *Pygoscelis* penguins using stable isotope analysis (Advisors: Drs. Michael Polito, Kenneth Rose, and Kenchan Maiti)

**B.S. in Biology, Magna Cum Laude with Departmental Honors in Biology**  
***University of Massachusetts, Amherst, MA***

May 2009

Honors Thesis: Tail autotomy and its effects on locomotion in the Northern Dusky Salamander (*Desmognathus fuscus*) (Advisors: Drs. Duncan Irschick and Jeff Podos)

### **WORK AND RESEARCH EXPERIENCE**

**Principle Investigator**

July 2016 --- Present

***Museum of Zoology, University of Michigan; Ann Arbor, MI***

- Conducting a range-wide phylogeographic study of Wedge-tailed Shearwaters to reconstruct population history and assess population structure and divergence between breeding areas. Responsible for pursuing and acquiring funding, conducting DNA extractions on modern genetic samples and toe pads from museum specimens, and assembling and analyzing genome-wide genetic datasets.

**Research Technician**

August 2016 --- Present

***Museum of Zoology, University of Michigan; Ann Arbor, MI***

- Assisting with a long-term study on the relationship between seasonal migration and dispersal and its influence on speciation in boreal forest birds. Responsible for all lab work, including subsampling avian tissues and conducting DNA extractions (PI: B. Winger)

**Graduate Research Assistant**

August 2014 --- August 2016

***Louisiana State University; Baton Rouge, LA***

- Assessed the variation in foraging strategies in populations of *Pygoscelis* penguins throughout the Scotia Arc to detect trends due to spatial differences in oceanic productivity and trophic composition. Examined the presence and degree of individual foraging specialization using bulk stable isotope analysis.

**Research Coordinator**

January 2014 --- July 2014

***San Diego Zoo Institute for Conservation Research; Camp Pendleton, CA***

- Supervised a team of research associates monitoring the resident and breeding populations of western Snowy Plover and California Least Tern at coastal sites in Marine Corps Base Camp Pendleton. Responsible for tern and plover nest searching and productivity monitoring, behavioral observations, disturbance and predation assessment and documentation, managing and analyzing data.

**Avian Field Technician/GS-05**

April 2013 --- September 2013

***Alaska Maritime National Wildlife Refuge; Buldir, AK***

- Monitored survival, productivity and diet of auklets, puffins, kittiwakes, murrelets, storm-petrels, and gulls.

Conducted population counts of breeding kittiwakes, murres, gulls, and cormorants. Managed and analyzed data, compiled report.

**Avian Research Technician**

January 2013 --- April 2013

***Deakin University; Gabo Island, Victoria Australia***

- Monitored reproduction and foraging ecology of Short-tailed Shearwaters. Configured GLS, GPS and Accelerometer data-loggers and package/seal for deployment. Attached data-loggers to adult shearwaters; retrieved data-loggers and downloaded/compiled data. Banded and collected morphometric data on adult birds and chicks (PI: M. Berlincourt)

**Sanctuary Manager of Penikese Island**

May 2012 --- August 2012

***Massachusetts Division of Fish and Wildlife; Buzzards Bay MA***

- Managed a remote field camp monitoring breeding populations of endangered Roseate Terns and Common Terns; supervised interns and scheduled field season. Monitored nest chronology and productivity of terns. Conducted predator management in and around tern colony.

**Biological Field technician**

August 2011 --- April 2012

***US Fish and Wildlife Service; Laysan Island HI***

- Monitored reproduction and survival of Laysan Albatross and Black-footed Albatross. Conducted transect surveys and island wide censuses of breeding albatross. Surveyed and monitored the phenology of breeding seabird populations. Propagated and out-planted native and endangered plant species; controlled for invasive plant species.

**Research Technician**

May 2010 --- August 2010

***Savannah River Ecology Lab; Aiken SC***

- Assisted in PhD research on behavioral ecology of green anoles. Filmed and analyzed video footage of lizard behavior. Collected animals from wild and performed animal care and maintenance. (PI: J. Henningsen)

**Undergraduate Honors Thesis**

August 2008 --- May 2009

***University of Massachusetts Amherst, Department of Biology***

- Conducted an independent research project testing the effects of tail autotomy on locomotor performance, kinematics of movement, and stability in the Northern Dusky Salamander (*Desmognathus fuscus*). Gained experience in utilizing primary literature, conducting animal care/husbandry, data collection and organization as well as statistical analysis

**PUBLICATIONS AND TECHNICAL REPORTS**

**Herman, R.W.** F. Valls, T. Hart, V. Petry, W. Trivelpiece and M.J. Polito. (in revision). Species and population level differences in seasonal consistency and individual variation of *Pygoscelis* penguin foraging strategies. *Marine Biology*

**Herman, R.W.** T. Hart, J. Handley, J. Hinke and M.J. Polito. (In prep). Geographic variation in the degree of individual specialization in Gentoo Penguins (*Pygoscelis papua*) populations throughout the Scotia Arc.

Kohley, C.R. and **R.W. Herman**. 2013. Biological monitoring at Buldir Island, Alaska in 2013. U.S. Fish and Wildl. Serv. Rep., AMNWR 2013/09. Homer, Alaska.

**Herman, R.**, K. DeMoranville, and C.S. Mostello. 2012. Penikese Island Tern Restoration Project. Published report. Massachusetts Division of Fish and Wildlife.

**Herman, R.** J. Henningsen and D.J. Irschick. Tail autotomy and its effects on locomotion in the Northern Dusky Salamander. 2009 (Honors Thesis)

## **FIRST-AUTHORED PRESENTATIONS**

### **August 2016, North American Ornithological Conference 2016, Washington DC**

**Herman, R.,** M. Polito. *Individual specialists, population generalists and Gentoo penguin foraging ecology across the Scotia Arc* (talk)

### **February 2016, Ocean Sciences Meeting, New Orleans, Louisiana**

**Herman, R.,** M. Polito. *Individual specialists, population generalists and Gentoo penguin foraging ecology across the Scotia Arc during a time of rapid environmental change* (poster)

### **February 2016, 43<sup>rd</sup> Pacific Seabird Group Conference, Turtle Bay, Hawaii**

**Herman, R.,** M. Polito. *Individual specialists, population generalists and Gentoo penguin foraging ecology across the Scotia Arc during a time of rapid environmental change* (talk)

### **October 2015, Second World Seabird conference at Cape Town, South Africa**

**Herman, R.,** M. Polito. *Jack of all Trades or Master of Some? Individual specialists, population generalists and Gentoo penguin foraging ecology across the Scotia Arc during a time of rapid environmental change* (talk)

### **March 2015, Graduate Student Symposium at Dauphin Island Sea Lab**

**Herman, R.,** M. Polito. *Jack of all Trades or Master of Some? Individual specialists, population generalists and Gentoo penguin foraging ecology across the Scotia Arc during a time of rapid environmental change* (talk)

### **April 2009, Howard Hughes Medical Institute Life Science Symposium**

**Herman, R.,** J. Henningsen and D.J. Irschick. *Tail autotomy and its effects on locomotion in the Northern Dusky Salamander* (poster)

### **May 2009, Massachusetts Statewide Undergraduate Research Conference**

**Herman, R.** J. Henningsen and D.J. Irschick. *Tail autotomy and its effects on locomotion in the Northern Dusky Salamander* (poster)

## **ACADEMIC ACHIEVEMENTS AND AWARDS**

- American Ornithological Union Travel Award, 2016 (\$300)
- 2<sup>nd</sup> place for best student oral paper/presentation, Pacific Seabird Group, 2016
- Pacific Seabird Group Student Travel Award, 2016 (\$500)
- Department of Oceanography and Coastal Sciences Travel Award, 2015 (\$250)
- Graduate Student Travel Award, Louisiana State University, 2015 (\$300)
- Graduate Student Symposium Travel Award, 2015 (\$100)
- Undergraduate Student Travel Award, University of Massachusetts, 2009 (\$300)
- Graduate Research Assistantship, Louisiana State University, 2014 (\$20,000/year + tuition waver)
- Commonwealth College Honors Scholar with great distinction (University of Massachusetts, 2009)
- John and Abigail Adams Scholarship – awarded full undergraduate tuition waiver (2005-2009)

## **TRAINING, SERVICE, AND OUTREACH**

Oct. 2016	Training and supervising undergraduate students in museum research and genetic laboratory techniques at University of Michigan
Sep. 2016	Presented on seabird research and fieldwork opportunities to the University of Michigan Ornithology class
Apr. 2016	Presented on research and fieldwork in Antarctica to the Louisiana State University Biological Oceanography class
Dec. 2014	Conducted outreach and gave oral presentations about threats to marine ecosystems to passengers on an Antarctic commercial tour ship

## **RESEARCH SKILLS**

- Preparation and analysis of blood and feather tissues for bulk  $^{13}\text{C}$  and  $^{15}\text{N}$  stable isotope analysis
- DNA extraction and quantification for genomic library preparation and sequencing
- Statistical analysis of large datasets within the R framework
- Capture, banding, bleeding, and morphometric data collection of multiple seabird species
- Application and retrieval of GPS and GLS loggers on seabirds

## **FIELD EXPEDITIONS**

Dec.-Jan. 2015-16	<b>Penguin Population Census</b> , Danger Islands, Antarctica (PI: M Polito & S. Jenouvrier)
Dec. 2014	<b><i>Pygoscelis</i> Penguin Sampling and Research</b> , W. Antarctic Peninsula (PI: M. Polito)
May-Sep. 2013	<b>Avian Monitoring</b> , Buldir Is. US Fish & Wildlife Service, AMNWR
Jan.-Apr. 2013	<b>Avian Ecological Research</b> , Gabo Is. Australia (PI: M. Berlincourt)
May.-Aug. 2012	<b>Avian Monitoring</b> , Penikese Is., Mass. Div. of Fish & Wildlife
Sep.-Apr. 2011-12	<b>Avian Monitoring and Habitat Restoration</b> , Laysan Is. US Fish & Wildlife Service