

Curriculum Vitae

Grace Smith-Vidaurre

PhD Mentor: Dr. Timothy Wright
New Mexico State University
Las Cruces, NM 88003

E-mail: gsmithvi@nmsu.edu
Tel: (401) 788-4644
smith-vidaurre.com

EDUCATION

New Mexico State University, Las Cruces, NM
PhD Candidate in Ecology & Evolutionary Biology

GPA 3.94, 2013 – present

Haverford College, Haverford, PA
B.S. in Biology and Spanish, with honors in Spanish

GPA 3.71, 2007 – 2011

RESEARCH INTERESTS AND GOALS

- How the social environment influences signaling of social information in vocal learners
- Epigenetic underpinnings of vocal learning (model for socially learned behavior)
- Interactions among broad-sense epigenetic processes, with implications for evolutionary change and human health disparities
- Bridging science between the U.S. and underrepresented countries in Latin America

PUBLICATIONS & MANUSCRIPTS IN REVIEW

Araya-Salas, M., **Smith-Vidaurre, G.**, González-Gómez, P., Mennill, D. and T.F. Wright. *Social group signatures provide evidence of learning in visual displays*. Proceedings of the Royal Society B, **286**: 20190666.

Wright, T. F., Lewis, T. C., Lezama-López, M., **Smith-Vidaurre, G.**, & Dahlin, C. R. (2018). *Yellow-naped Amazon (Amazona auropalliata) populations are markedly low and rapidly declining in Costa Rica and Nicaragua*. Bird Conservation International, 1-17.

Araya-Salas, M., **Smith-Vidaurre, G.** and M. Webster. (2017). *Assessing the effect of sound file compression and background noise on measures of acoustic signal structure*. Bioacoustics 1-17.

Hobson, E.A., **Smith-Vidaurre, G.** and A. Salinas-Melgoza. (2017). *History of nonnative Monk Parakeets in Mexico*. PLoS ONE 12(9): e0184771.

Araya-Salas, M. and **G. Smith-Vidaurre**. (2017). *warbleR: an R package to streamline analysis of animal acoustic signals*. Methods in Ecology and Evolution 8: 184-191.

Smith-Vidaurre, G., Araya-Salas, M., and T.F. Wright. *Strong individual signatures in contact calls of a communally nesting parrot*. **In review**, Behavioral Ecology.

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MANUSCRIPTS IN PREP

Smith-Vidaurre, G., Veale, A., Russello, M., Mudge, J., Sundararajan, A., and T.F. Wright. *Signatures of shared demographics and parallel adaptation to selection pressures in a biological invader*. In prep. Target: Molecular Ecology

Smith-Vidaurre, G., Hobson, E.A., Salinas-Melgoza, A. and T.F. Wright. *Cultural evolution post-invasion: evaluating patterns of geographic variation in learned calls between a parrot's native and invasive range*. In prep. Target: Animal Behavior.

Smith-Vidaurre, G., Hobson, E.A., and T.F. Wright. Review: *The social environment is key to rapid adaptation through epigenetic processes*. In prep. Target: TREE

Smith-Vidaurre, G., Araya-Salas, M., and T.F. Wright. *Evidence of a tradeoff in signaling social group membership in vocal learning species*. Target: To be determined.

Dahlin, C.R., Hellmich, D., **Smith-Vidaurre, G.**, Dupin, M., and T.F. Wright. *Long term monitoring of cultural evolution in parrot vocal dialects*. In prep. Target: To be determined

BOOK CHAPTERS

Russello, M.R., **Smith-Vidaurre, G.**, and T.F. Wright. Genetics of Invasive Parrot Populations. In review by editor (Dr. Stephen Pruett-Jones) as chapter of *Naturalized Parrots of the World*

SOFTWARE

Araya-Salas, M., **Smith-Vidaurre, G.**, and H. Zhong. 2015. *warbleR: an R package to streamline bioacoustic analysis*. url: <http://cran.r-project.org/package=warbleR>.

GRANTS, AWARDS, SCHOLARSHIPS

- NMSU Biology Department Graduate Award for Excellence in Research (2019)
- NMSU Whaley Fieldwork Award, Biology Department (2017)
- Fulbright Study/Research grant for fieldwork in Uruguay (2017)
- American Ornithologists' Union Carnes Award for fieldwork in Uruguay (2016)
- NMSU Graduate School Merit-Based Enhancement Award (2016, 2019)
- NMSU Biology Department Graduate Award for Excellence in Teaching (2016)
- NMSU Biology Department Star, College of Arts & Sciences (A&S) Award (2016)
- Private donation from Drs. Michael and Susan Achey to support PhD research (2014)
- NMSU College of Arts & Sciences Graduate Tuition Scholarship (2013 – present)

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GRANTS, AWARDS, SCHOLARSHIPS Continued

- Presentation Awards: NMSU Biosymposium Best Graduate Poster (2015, 2018), NMSU Graduate Research and Arts Symposium (GRAS) Honorable Mention, Poster (2015)
- Travel and Diversity Awards: Society for Integrative and Comparative Biology Travel & Housing Awards (SICB: 2016, 2019), Animal Behavior Society (ABS: 2015, 2019), NMSU A&S (2015, 2019), American Ornithologist's Society (AOS: 2018)
- Nominee for Thomas J. Watson Fellowship, Haverford College (2011)
- Manuel J. and Elisa P. Asensio Prize for best senior thesis in Spanish (2011)

ADDITIONAL RESEARCH EXPERIENCE

Graduate research assistant, Jornada Basin Long-Term Ecological Research Station, *Employing a Big Data approach in R for a localized landscape project on cyclical spatiotemporal disease occurrence, and using RShiny as a tool for data analysis*, with Dr. Heather Savoy in Dr. Debra Peter's group (June 2018 – present).

Visiting researcher, Santa Fe Institute, *Monk parakeet research collaborative visit*, with Drs. Elizabeth Hobson and Alejandro Salinas-Melgoza (01 – 07 Nov 2016).

Graduate research assistant, NMSU, *Evaluating quasispecies diversity in dengue virus strains*, Dr. Kathryn Hanley (21 May – Oct 2016).

Field research technician, Pacific coast of Nicaragua, *Assessing spatiotemporal variability in parrot vocal dialects*, Drs. Tim Wright, Christine Dahlin (22 Jun – 12 Jul 2016).

Bioinformatics intern, National Center for Genome Resources, Santa Fe, NM. *Research internship in cutting-edge genomics and bioinformatics* (16 Jun – 10 Jul 2015).

Visiting researcher, University of British Columbia-Okanagan, Kelowna, BC, Canada. *Restriction enzyme associated DNA sequencing (RAD-seq) bioinformatics, library prep*, Drs. Andrew Veale, Michael Russello (7 Jul – 5 Aug 2014, 15 Jan – 26 Jan 2015).

Avian field research technician, La Selva Biological Station, Sarapiquí, Costa Rica. *Social learning in long-billed hermit hummingbirds*, Dr. Tim Wright (Jan – Apr 2013) and RI Department of Environmental Management, Kingston, RI. *Management research with 3 native duck species* (Nov 2011 – Mar 2012).

Undergraduate senior thesis, Haverford College Biology Department. *Using acrylodan to probe oligomeric structures formed by the huntingtin N-terminus during aggregation*, Dr. Robert Fairman (Sep 2010 – Apr 2011).

Undergraduate senior thesis, Haverford College Spanish Department. *Esta criatura no es de aquí: constelaciones de transformaciones y la invasión de la barbarie en 2666*, Dr. Roberto Castillo-Sandoval (Sep 2010 – Apr 2011).

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PRESENTATIONS AND MEETING ABSTRACTS

Smith-Vidaurre, G., Araya-Salas, M., and T.F. Wright. *Social information differs among contact calls of three vocal learning species*. Talk, ABS, 26 Jul 19.

Smith-Vidaurre, G., Araya-Salas, M., and T.F. Wright. *Distinct social information in contact calls of three vocal learning species*. Poster, Songbird & Animal Communication, 28 Jul 19.

Smith-Vidaurre, G., Araya-Salas, M., and T.F. Wright. *Monk parakeets exhibit low acoustic convergence across social scales in their native range*. Talk, SICB, 04 Jan 19.

Smith-Vidaurre, G., and T.F. Wright. *Mapping patterns of vocal variation in the native range of an invasive parrot*. Poster, AOS, Apr 18.

Smith-Vidaurre, G., and T.F. Wright. *Mapping patterns of vocal variation in the native range of an invasive parrot*. Poster, NMSU Biosymposium 24 Feb 18.

Hobson, E.A, **Smith-Vidaurre, G.**, and A. Salinas-Melgoza. *History of nonnative Monk Parakeets in Mexico*. Talk, Ornithological Congress of the Americas, 11 Aug 17.

Araya-Salas, M., **Smith-Vidaurre, G.**, Mennill, D. and T.F. Wright. 2015. *Social group signatures provide evidence of learning in visual displays*. Talk, ABS, 11-14 Jun 15.

Smith-Vidaurre, G., A. Veale, M.A. Russello and T.F. Wright. *Identifying genomic evidence of adaptation to novel environments in an invasive parakeet* (*Myiopsitta monachus*). Poster presented at various conferences/symposia: SICB 05 Jan 16, NMSU Biosymposium 31 Oct 15 and 11 Apr 15, New Mexico IDeA Networks of Biomedical Research Excellence Symposium 28 Mar 15, and NMSU GRAS 18 Mar 15.

TEACHING & OTHER GRADUATE ASSISTANTSHIPS

- **Guest Lecturer for R Ecology course**, Principal Components Analysis and Mantel tests in R, BIOL 550 with Scott Ferrenberg, NMSU Biology Department (April 3rd, 2019)
- **Teaching Assistant**, NMSU Biology Department:
 - BIOL 211: Cellular and Organismal Biology Lecture* (Spring 2018)
 - BIOL 309 (HHMI): Guided Biological Research* (Fall 2016)
 - BIOL 350 (HHMI): Guided Biological Research* (Spring and Fall 2015)
 - BIOL 211: Cellular and Organismal Biology Lab* (Fall 2013, Spring 2014)
- **HHMI Graduate Assistant**, NMSU (Fall 2015, Spring 2017)
- **Sanger DNA Sequencing Graduate Assistant**, NMSU (Spring 2016)
- **Substitute Teacher**, Moses Brown School, Providence, RI (Fall 2012)
- **Teaching Assistant**, Haverford College, Spanish Department (Fall 2010)

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PROFESSIONAL DEVELOPMENT

Co-delivered workshop *Packages for streamlined bioacoustics analyses in R*, AOS annual meeting, Tucson, AZ with Dr. Marcelo Araya-Salas, 10 Apr 2018

Delivered workshop *An introduction to coding and bioacoustics analyses in R*, Wright Lab, NMSU, 01 Mar 18 – 16 May 18 (weekly sessions)

Delivered workshop *warbleR: a package for streamlined bioacoustic analyses in R*, 1st Ornithological Congress of the Americas, Puerto Iguazú, Argentina, 7 Aug 2017

Co-delivered workshop *Taller de Bioacústica: análisis de sonidos animales en R*, UCA, Managua, Nicaragua, with Dr. Marcelo Araya-Salas, 13-17 Jul 2017

Attended *UCLA/La Kretz Center for California Conservation Science Workshop in Conservation Genomics*, La Kretz Field Station, 20-24 Mar 2016

Organized & delivered 1 session of *Biology Graduate Student Organization R workshop*, NMSU Biology Department, 08 - 09 Nov 2015

Co-led workshop *Taller de Bioacústica: análisis de sonidos animales en R y la aplicación en la biología de la conservación*, Organization for Tropical Studies Palo Verde Research Station, with Dr. Marcelo Araya Salas, 14-19 Jul 2015

Attended *NIMBioS Graduate Workshop on Current Issues in Statistical Ecology*, National Institute for Mathematical and Biological Synthesis (NIMBioS), Knoxville, 15 – 17 Apr 2015

PROFESSIONAL AFFILIATIONS

- Animal Behavior Society (2015, 2019), American Ornithologists' Union (2014, 2018), Society for the Study of Evolution (2018), American Genetic Association (2016, 2018, 2019), SICB (2016, 2018, 2019), Graduate Women in Science (2018), Sigma Xi (2016)
- Biology Graduate Student Organization: Vice President (Fall 2016), Secretary (2015, 2016), President (2014)

RECENT OUTREACH ACTIVITIES

- **Making DNA bracelets to link structure and function**, Vista Middle School and Hillrise Elementary, Las Cruces, NM with Dr. Michèle Shuster (8 Jan 2018, 14 Mar 2019)
- **Student panelist** at Research Panel for New Mexico Alliance for Minority Participation (12 Oct 2018), Fulbright Workshops with NMSU Honors College (02 Feb, 13 Nov 2018)
- **Evolution and bioacoustics**, Sierra Middle School students, organized by Dr. Tim Wright, delivered by lab, NMSU Biology Dept. (29 Jan 2016, 30 Jan 2015, 31 Jan 2014)

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- **Science Fair Judge**, Desert Hills Elementary, Las Cruces, NM (23 Nov 2015), Asombro Institute for Science Education, Las Cruces, NM (30 Apr 2015)

SKILLS

- **Bioinformatics**: R skills with bioacoustics, population genetics (RAD-seq, microsatellites), geospatial analyses, dynamic data collection/analysis interfaces with RShiny, developing R packages. UNIX, Python skills with genomics, geospatial analyses.
- **Wet Lab**: DNA extraction, viral RNA extraction, PCR and gel/column purification, gel electrophoresis, Qubit and qPCR DNA quantification, Sanger sequencing, RAD-seq library preparation. Previously Wright lab safety officer.
- **Grant-writing/Funding**: Experience writing grants since the beginning of my PhD, and obtaining funding from alternative sources, including private donations and crowdfunding.
- **Mentoring/Teaching**: Mentored 4 undergraduate students (3 of whom were Latin@s). My most recent mentee is working on a temporal comparison of contact calls in part of monk parakeets' invasive range. Experience teaching basic biology, as well as advanced fieldwork and genetics techniques for classes of 7 – 25 students (see above). Designed workshops to teach R coding for bioacoustics to students and professionals.
- **Languages and International Experience**: Fluent in English and Spanish (speaking, reading and writing). Lived periodically in Nicaragua since 1989 with family. Lived, studied in Chile for five months. Carried out fieldwork and workshops in various countries.