# Curriculum Vitae


## Grace Smith-Vidaurre

**PhD Mentor:** Dr. Timothy Wright
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## EDUCATION

*New Mexico State University, Las Cruces, NM* — **GPA 3.94**, 2013 – present
PhD Candidate in Ecology & Evolutionary Biology

*Haverford College, Haverford, PA* — **GPA 3.71**, 2007 – 2011
B.S. in Biology and Spanish, with honors in Spanish

## 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 epigenetic processes in the broad sense, with implications for evolutionary change and human health disparities
- Bridging science between the U.S. and underrepresented countries in Latin America

## PUBLICATIONS

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. doi: http://dx.doi.org/10.1098/rspb.2019.0666.

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. doi: 10.1017/S0959270918000114.

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. doi: http://dx.doi.org/10.1080/

Hobson, E.A., **Smith-Vidaurre, G.** and A. Salinas-Melgoza. (2017). *History of nonnative Monk Parakeets in Mexico*. PLoS ONE 12(9): e0184771. doi: https://doi.org/10.1371/journal.pone.0184771

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## PUBLICATIONS continued

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. doi: https://10.1111/2041-210X.12624

## MANUSCRIPTS IN REVIEW

**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, July 2019

## 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. Under review by Dr. Stephen Pruett-Jones (editor) as a 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.

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## GRANTS, AWARDS, SCHOLARSHIPS

- NMSU Biology Department Graduate Award for Excellence in Research (2019)
- Nominated for NMSU Graduate School Merit-Based Enhancement Award (2019)
- Society for Integrative and Comparative Biology Broadening Participation Travel & Charlotte Magnum Housing Awards (2019)
  NMSU College of Arts & Sciences Graduate Assistant Tuition Scholarship (2018)
- NMSU Graduate Tuition Fellowship (2013 – present)
- American Ornithologist's Society Diversity Travel Award (2018)
- NMSU Biosymposium Presentation Award: Best Graduate Poster (Spring 2018)
- Whaley Fieldwork Award, NMSU Biology Department (2017)
- Fulbright Study/Research grant for fieldwork in Uruguay (2017)
- American Ornithologists' Union Carnes Award (2016)
- NMSU Graduate School Merit-Based Enhancement Award (2016)
- NMSU Biology Department Graduate Award for Excellence in Teaching (2016)
- NMSU Biology Department Star, College of Arts & Sciences Award (2016)
- Society for Integrative and Comparative Biology Broadening Participation Travel & Charlotte Magnum Housing Awards (2016)
- NMSU Biosymposium Presentation Award: Best Graduate Poster (Fall 2015)
- Animal Behavior Society Diversity Travel Award (2015, 2019)
- NMSU College of Arts & Sciences Travel Award (2015, 2019)
- NMSU Biosymposium Presentation Award: Best Graduate Poster (Spring 2015)
- NMSU GRAS Honorable Mention in Poster Presentation (2015)
- Private donation from Drs. Michael and Susan Achey to support PhD research (2014)
- 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 at NMSU, *Employing a Big Data approach in R for a localized landscape project on cyclical spatiotemporal occurrence of vesicular stomatitis virus in the Western U.S., and using dynamic Shiny graphics as a tool for data analysis,* with Dr. Heather Savoy and Dylan Burruss in Dr. Debra Peter's group (June 2018 - present)

## ADDITIONAL RESEARCH EXPERIENCE continued

**Visiting researcher,** *Santa Fe Institute***,** *Monk parakeet research collaborative visit,* with Drs. Liz 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,** Pacfic 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. R*esearch 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) library preparation,* Drs. Andrew Veale, Michael Russello (15 Jan – 26 Jan 2015)

**Visiting researcher**, University of British Columbia-Okanagan, Kelowna, BC, Canada. *RAD-seq bioinformatics training,* Drs. Andrew Veale, Michael Russello (7 Jul – 5 Aug 2014)

**Field research technician**, La Selva Biological Station, Sarapiquí, Costa Rica. *Social learning in long-billed hermit hummingbirds*, Dr. Tim Wright (Jan – Apr 2013)

**Avian technician**, 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)

**Undergraduate researcher**, Haverford College Biology Department. *Studying the structure and aggregation of huntingtin protein constructs, with implications for Huntington's disease,* Dr. Robert Fairman (Jun – Aug 2010)

## 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 delivered at ABS meeting, Chicago, IL, July 26th, 2019

**Smith-Vidaurre, G.**, Araya-Salas, M., and T.F. Wright*. Distinct social information in contact calls of three vocal learning species*. Delivered as a poster at the Songbird and Animal Communication 2019 meeting, Millbrook, NY, July 28th, 2019

## PRESENTATIONS AND MEETING ABSTRACTS continued

**Smith-Vidaurre, G.**, Araya-Salas, M., and T.F. Wright. *Monk parakeets exhibit low acoustic convergence across social scales in their native range*. Delivered as a talk at the Society for Integrative and Comparative Biology (SICB) meeting, Tampa FL, 04 Jan 2019, with the changed title *Monk parakeet contact calls show strong individual signatures but no vocal dialects in their native range*

**Smith-Vidaurre, G.**, and T.F. Wright. *Mapping patterns of vocal variation in the native range of an invasive parrot*. Poster, American Ornithologist's Society, Tucson AZ, Apr 2018

**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 2018

Hobson, E.A, **Smith-Vidaurre, G.**, and A. Salinas-Melgoza. *History of nonnative Monk Parakeets in Mexico*. Talk, Ornithological Congress of the Americas, Puerto Iguazú, Argentina, 11 Aug 2017

**Smith-Vidaurre, G.**, A. Veale, M. A. Russello and T.F. Wright. *Detecting genomic signatures of selection in invasive parakeet* (Myiopsitta monachus). Poster, Society for Integrative and Comparative Biology, Portland, OR, 5 Jan 2016

**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, NMSU Biosymposium abstracts, 31 Oct 2015

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

**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, NMSU Biosymposium, 11 Apr 2015

**Smith-Vidaurre, G.**, A. Veale, M. A. Russello, T.F. Wright. *Identifying genomic evidence of adaptation to novel environments in an invasive parakeet (*Myiopsitta monachus*)*. Poster, New Mexico IDeA Networks of Biomedical Research Excellence (NM-INBRE) Symposium, Santa Fe, NM, 28 Mar 2015

**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, NMSU Graduate Research and Arts Symposium5, 18 Mar 2015

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## TEACHING, SCIENCE EDUCATION & 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)

## PROFESSIONAL DEVELOPMENT

**Planning to co-deliver workshop** *Análisis de sonidos animales en R*, in Cochabamba, Bolivia with Drs. Marcelo Araya-Salas and Timothy Wright, November 2019

**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

**Attended** workshop *Information theoretic approaches to statistical inference,* NMSU College of Business*,* Dr. David Anderson, 06 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** *NSF iPlant: Bioinformatics tools and services for RNA-seq, Assembly, and other Big Data biology applications workshop,* Santa Fe, NM, 18-19 May 2015

## PROFESSIONAL DEVELOPMENT continued

**Attended** *NIMBioS Graduate Workshop on Current Issues in Statistical Ecology,* travel and housing funded by the National Institute for Mathematical and Biological Synthesis (NIMBioS), University of Tennessee – Knoxville, 15 – 17 Apr 2015

**Attended** *Deep Genomics Symposium*. NSF Integrative Graduate Education and Research, University of Arizona - Tucson, 03 - 05 Apr 2014

## PROFESSIONAL AFFILIATIONS

- Student member, Animal Behavior Society (2015, 2019)
- Student member, American Ornithologists' Union (2014, 2018)
- Student member, Society for the Study of Evolution (2018)
- Student member, American Genetic Association (2016, 2018, 2019)
- At Large member, Graduate Women in Science (2018)
- Associate member, Sigma Xi (2016)
- Student member, Society for Integrative and Comparative Biology (2016, 2018, 2019)
- 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, Las Cruces, NM, organized by Dr. Michèle Shuster at NMSU (14 Mar 2019)
- **Student panelist** at International Research Panel organized by Kayla Meyers of Aggies Go Global at the New Mexico Alliance for Minority Participation (12 Oct 2018)
- **Student panelist** at Fulbright Workshops, NMSU Honors College (02 Feb, 13 Nov 2018)
- **Making DNA bracelets to link structure and function,** Hillrise Elementary, Las Cruces, NM, organized by Dr. Michèle Shuster at NMSU (8 Jan 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)
- **Science Fair Judge,** Desert Hills Elementary, Las Cruces, NM (23 Nov 2015)
- **Science Fair judge, Desert Data Jam**, Asombro Institute for Science Education, Las Cruces, NM (30 Apr 2015)

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## SKILLS

- **Bioinformatics**: R (advanced), UNIX (intermediate), Python (beginner). R skills focused on bioacoustics, population genetics (RAD-seq, microsatellites) and geospatial analyses, as well as creating dynamic visualizations/data collection interfaces with Shiny. Experience developing R packages and vignettes. UNIX and Python skills focused on genomics and geospatial analyses. Experience with proprietary software for bioacoustics and genetics analyses (Raven, Geneious).
- **Wet Lab**: DNA extraction (blood, tissue, Whatman filters), viral RNA extraction, PCR and gel/column purification, gel eletrophoresis, Qubit and qPCR DNA quantification, Sanger sequencing, RAD-seq library preparation. Served as lab safety officer in Wright lab (responsible for safety training maintenance and supervising good safety habits).
- **Grant-writing/Funding**: Experience writing grants to fund field and wet lab work since the beginning of my PhD. Experience obtaining funding from alternative sources, including private donation and crowdfunding (Experiment.com).
- **Mentoring/Teaching**: Experience mentoring 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 that could lead to her 1st first-author paper. Experience teaching basic biology as a teaching assistant, as well as more advanced fieldwork and genetics techniques for classes of 7 – 25 students (see above). Experience designing workshops and teaching R (basic and advanced) to students and professionals in both English and Spanish.
- **Language**: Fluent in English and Spanish (speaking, reading and writing in both languages). Lived periodically in Nicaragua since 1989 with family. Lived and studied in Chile for five months. Participated in fieldwork and delivered workshops in Costa Rica and Nicaragua. Lived and carried out research in Uruguay for nine months in 2017. Delivered presentation and workshop in Argentina in 2017.