**Sophie Preckler-Quisquater**

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|  | squisquater@ucdavis.edu |  |  | https://github.com/squisquater |
|  | https://squisquater.github.io |  |  | 0000-0001-8885-5297 |

**RESEARCH INTERESTS**

Integrating traditional ecological field methods with genetic and genomic tools to investigate the natural and anthropogenic drivers of local adaptation and shifting range dynamics in mammalian wildlife.

**EDUCATION**

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| 2016 – 2022 | **Ph.D. in Ecology with an Emphasis in Ecological Genetics and Genomics**  University of California at Davis. Davis, CA  Supervisor: Dr. Ben Sacks. |
| 2008 – 2012 | **B.S. in Evolution, Ecology, and Biodiversity**  College of Biological Sciences  University of California at Davis. Davis, CA |

**RESEARCH EXPERIENCE**

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| 2022 – Present | **Postdoctoral Research,** Mammalian Conservation and Ecology Unit, Veterinary Genetics Laboratory, University of California, Davis. Exploring the effects of disease outbreaks on metapopulation connectivity, genetic diversity, and inbreeding-load in the San Joaquin kit fox (Vulpes macrotis mutica). |
| 2016 – 2022 | **Graduate Research,** Ecology Graduate Group, University of California, Davis, Davis, CA.  Dissertation:Genomic Analysis of Divergence and Secondary Contact in Red Foxes (*Vulpes vulpes*)and Gray Foxes(*Urocyon cinereoargenteus*)*.* |

**RESEARCH PUBLICATIONS**

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| Oct 2022 | Kierepka E, **Preckler-Quisquater S**, Reding D, Piaggio A, Riley S, Sacks BN. (2022) *Genomic analyses of gray fox lineages suggest ancient divergence and secondary contact in the southern Great Plains*. Journal of Heredity. |
| Jan  2021 | Quinn CB, **Preckler-Quisquater S**, Akins JA, Cross P, Alden PB, Vanderzwan SL, Stephenson JA, Figura P, Green GA, Hiller T, Sacks BN. 2022. *Contrasting genetic trajectories of endangered and expanding red fox populations in the western U.S*. Heredity. |
| Dec  2020 | Sacks BN, Mitchell KJ, Quinn CB, Hennelly LM, Sinding MHS, Statham MJ, **Preckler-Quisquater S**, Fain SR, Kistler L, Vanderzwan SL, Meachen JA, Ostrander EA, Frantz LAF. 2021. *Historical mitochondrial genomes reveal Pleistocene origin of the red wolf and insights for North American Canis phylogeography.* Molecular Ecology. 30:4292–4304. |
| Nov 2018 | Agha M, Batter T, Bolas EC, Collins AC, Gomes da Rocha D, Monteza-Moreno CM, **Preckler-Quisquater S**, Sollman R. 2018. *A review of wildlife camera trapping trends across Africa*. African Journal of Ecology*.* 56(4):694-701. Authors ordered alphabetically with equal contribution. |
| Aug 2018 | Black KM, **Preckler-Quisquater S**, Batter TJ, Anderson S, Sacks, BN. 2018. *Occupancy Modeling to Characterize Habitat Use and Population Size of the Sacramento Valley Red Fox*.Journal of Wildlife Management. 83:158-156. |
| *Submitted* | **Preckler-Quisquater S**, Kierepka E, Reding D, Piaggio A, Sacks BN. (In Prep). *Population genomics reveals distinct demographic histories among extant gray fox (Urocyon) lineages in North America.* Molecular Ecology. |
| *Submitted* | **Preckler-Quisquater S**, Kierepka E, Reding D, Piaggio A, Sacks BN. (In Prep). *Evidence for multiple pulses of asymmetric admixture and selective introgression between highly divergent gray fox (Urocyon cinereoargenteus) lineages.* Molecular Ecology. |
| *In Prep* | **Preckler-Quisquater S**, Quinn CB, S. Sacks, BN. (In Prep). *Maintenance of a narrow hybrid zone between native and introduced red foxes despite conspecificity and high dispersal capabilities* |
| *In Prep* | **Preckler-Quisquater S**, Oleksy SP, Quinn CB, Sacks, BN (In Prep). *Morphological signatures of elevational adaptation between closely related red fox lineages in the western United States*. |
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**TECHNICAL REPORTS**

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| April 2022 | Sacks BN, Quinn CB, **Preckler-Quisquater S**. 2022. *Genomic markers for the Sierra Nevada red fox.* Report to the U.S. Fish and Wildlife Service, 30 April 2022. |
| May 2019 | Bellido F, Broad A, Gaffney S, Hernandez D, Holmes A, Lo V, Moore-O’Leary K, Peckney J, **Preckler-Quisquater S**, Schwartz M, Wiener J, Williamson M. *Climate Threats Assessment for the Kern and Pixley National Wildlife Refuges.*Report generated for USFWS. \*Authors listed in alphabetical order |
| Sep 2017 | **Preckler-Quisquater, S.**,Anderson, S., Nguyen, C., Sacks, B.N. 2017. *Range-wide Occupancy Survey for the Sacramento Valley red fox*. Final Report to the California Department of Fish and Wildlife. September 30, 2017. pp.1-18. |

**AWARDS & FELLOWSHIPS**

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| Aug 2022 | The Wildlife Society, Molecular Ecology Working Group Travel Grant |
| Feb 2022 | Best Poster Presentation – Graduate Student Symposium in Ecology |
| 2020-2021 | Kit Rice Ecology Fellowship ($4,000) |
| 2020-2021 | UC Davis Graduate Group in Ecology Fellowship ($13,000) |
| Feb 2020 | Best Oral Presentation – The Wildlife Society Western Section |
| 2019-2020 | UC Davis Graduate Group in Ecology Fellowship ($12,000) |
| 2018-2019 | William and Linda Sullivan Environmental Sciences Scholarship ($2,000) |
| 2017-2018 | UC Davis Graduate Group in Ecology Fellowship ($12,000) |
| 2017-2018 | UC Davis Ecology Student Endowment Award ($1,500) |

**PROFESSIONAL PRESENTATIONS**

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| Nov 2022 | **Preckler-Quisquater S**, Kierepka E, Reding D, Piaggio A, Riley S, Sacks BN. (2022). *Whole-genome sequencing uncovers recent admixture pulses and selective introgression between highly divergent gray fox lineages*. Oral Presentation. The Wildlife Society National Conference. Spokane, WA. |
| Feb 2022 | **Preckler-Quisquater S**, Kierepka E, Reding D, Piaggio A, Riley S, Sacks BN. (2022) *Genomic sequencing across a zone of secondary contact uncovers complex demographic history and admixture between cryptic gray fox lineages*. Poster Presentation. The Western Section of The Wildlife Society Conference. Reno, NV |
| Feb 2022 | Quinn CB, **Preckler-Quisquater S**, Carlson J, Figura P, Akins J, Hiller T, Sacks BN. (2022) *Genomic consequences of population declines in the Sierra Nevada and Cascade red fox subspecies.* Poster Presentation. The Western Section of The Wildlife Society Conference. Reno, NV |
| Feb 2022 | **Preckler-Quisquater**, Kierepka E, Reding D, Piaggio A, Riley S, Sacks BN. (2022) *Genomic sequencing across a zone of secondary contact uncovers complex demographic history and admixture between cryptic gray fox lineages*. Poster Presentation. UC Davis Graduate Student Symposium in Ecology. Awarded Best Poster Presentation. |
| Jan 2022 | **Preckler-Quisquater S**, Kierepka E, Reding D, Piaggio A, Riley S, Sacks BN. (2022) *Genomic sequencing across a zone of secondary contact uncovers complex demographic history and admixture between cryptic gray fox lineages*. Poster Presentation. International Plant and Animal Genomics Conference. Virtual. |
| Feb 2020 | **Preckler-Quisquater S**, Sacks BN. (2020) *Do Reproductive Barrier Genes Contribute to the Maintenance of Distinct Red Fox (Vulpes vulpes) Populations across a Zone of Secondary Contact?* Oral Presentation. The Wildlife Society Western Section Conference. Redding, CA. Awarded Best Oral Presentation. |
| Feb 2020 | Davis, TM, **Preckler-Quisquater S**, Sacks BN. (2020) *Optimizing tissue sampling and extraction protocols for next-generation genomic sequencing.* Poster Presentation. The Wildlife Society Western Section Conference. Redding, CA. Awarded Best Poster Presentation. |
| Feb 2020 | Serrano M, Owen JD, **Preckler-Quisquater S**, Vanderzwan S, Sacks BN. (2020) *San Francisco Urban Coyote Repopulation: A Noninvasive Genetic Perspective.* Poster Presentation. The Wildlife Society Western Section Conference. Redding, CA. |
| Jan 2020 | **Preckler-Quisquater S**, Sacks BN. (2020) *Do Reproductive Barrier Genes Contribute to the Maintenance of Distinct Red Fox (Vulpes vulpes) Populations across a Zone of Secondary Contact?* Poster Presentation. International Plant and Animal Genomics Conference. San Diego, CA. |
| Sep 2019 | **Preckler-Quisquater S**, Sacks BN. (2019) *Does Natural Selection Affect Gene Flow Between Nonnative and Native Red Fox Populations?* Oral Presentation. The Wildlife Society National Conference. Reno, NV. |
| Feb 2018 | **Preckler-Quisquater S**,Anderson S, Buchalski M, Sacks BN. (2018) *Assessing selective introgression of nonnative red fox genes into the genomic background of the native Sacramento Valley red fox.* Poster Presentation. The Wildlife Society Conference Western Section Conference. Santa Rosa, CA. |
| Nov 2017 | **Preckler-Quisquater S**,Anderson S, Buchalski M, Sacks BN. (2017) *Assessing selective introgression of nonnative red fox genes into the genomic background of the native Sacramento Valley red fox.* Poster Presentation. CA Dept. of Fish & Wildlife Science Symposium. |
| Nov 2017 | **Preckler-Quisquater S**,Anderson S, Miles K, Batter TJ, Sacks BN. (2017) *Occupancy estimation as a tool to test and refine a predictive species distribution model for the Sacramento Valley red fox (Vulpes vulpes patwin).* Poster Presentation. CA Dept. of Fish & Wildlife Science Symposium. |
| Jun 2017 | **Preckler-Quisquater S**,Anderson S, Miles K, Batter TJ, Sacks BN. (2017) *California Native Species Presentation: Sacramento Valley red fox (Vulpes vulpes patwin).* Oral Presentation. California Natural Diversity Database Branch. Sacramento, CA. |
| Mar 2017 | **Preckler-Quisquater S**,Anderson S, Miles K, Batter TJ, Sacks BN. (2017) *Summary of Results on a three-year State Wildlife Grant funded study on the Sacramento Valley red fox (Vulpes vulpes patwin).* Oral Presentation. California Dept. of Fish & Wildlife. Rancho Cordova, CA. |
| Nov 2017 | **Preckler-Quisquater S**,Anderson S, Miles K, Batter TJ, Sacks BN. (2017) *Occupancy estimation as a tool to test and refine a predictive species distribution model for the Sacramento Valley red fox.* Poster Presentation. CA Dept. of Fish & Wildlife Science Symposium. |
| Feb 2017 | **Preckler-Quisquater S**, Miles K, Batter TJ, Anderson S, Sacks BN. (2017) *Occupancy estimation as a tool to test and refine a predictive species distribution model for the Sacramento Valley red fox.* Oral Presentation. The Wildlife Society Western Section Conference. Reno, NV. |
| Feb 2017 | **Preckler-Quisquater S**, Miles K, Batter TJ, Anderson S, Sacks BN (2017) *Occupancy estimation as a tool to test and refine a predictive species distribution model for the Sacramento Valley red fox.* Oral Presentation. UC Davis Graduate Student Symposium in Ecology, UC Davis. Davis, CA |
| Feb 2016 | **Preckler-Quisquater S**, Batter TJ, Anderson S, Sacks BN. (2016) *Increasing distribution of nonnative red fox haplotypes within the range of the native Sacramento Valley red fox.* Poster Presentation. The Wildlife Society Western Section Conference. Pomona, CA. |

**TEACHING**

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| 1 semester | **Invited Guest Lecturer**. Conservation Biology. American River College. Sacramento, CA. Fall 2020 |
| 2 semesters | **Invited Guest Lecturer**. Ecology. American River College. Sacramento, CA. Fall 2020-2021 |
| 1 semester | **Invited Guest Lecturer**. Wildlife Biology. American River College. Sacramento, CA. Spring 2020 |
| 3 semesters | **Invited Guest Lecturer**. Mammalogy. Sacramento State University. Sacramento, CA. Fall 2017-2019. |
| 1 quarter | **Teaching Assistant.** Field Methods in Wildlife, Fish, & Conservation Biology. UC Davis, CA. |
| 4 quarters | **Teaching Assistant.** Introduction to Evolution. Biological Sciences Department. UC Davis, CA. |
| 5 quarters | **Teaching Assistant.** Introductory Biology: Principles of Ecology and Evolution. Biological Sciences Department. UC Davis. Davis, CA. |
| March 2019 | **Software Carpentry Instructor Training.** Trained in evidence-based pedagogy for teaching foundational computational and data science skills to diverse groups of researchers. |
| Fall 2020 | **Teaching Methods in Science and Society.** Received training in mentorship, teaching methods, and course design |

**MENTORSHIP**

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| Summer 2022 | **NSF REU Mentor** to Katelyn Sanchez. Ecological and Evolutionary Response to Rapid Environmental Change (EERREC) Research Experience for Undergraduates (REU). National Science Foundation. Hosted at UC Davis. Independent research project: *Genetic Diversity of the San Joaquin Kit Fox*. |
| 2020 – 2021 | **Career Discovery Group Mentor** to 21 first-year, UC Davis undergraduate students. Working to guide them throughout the 2020-2021 school year as they assess their skills, interests, and values, and the role in which these play in successfully choosing a major and building a career. |
| 2019 – 2021 | **Graduate Student Mentor** to Stephanie Oleksy. Undergraduate Animal Biology Research Practicum: *Museum skull specimens offer insight into ecologically relevant body size differences between closely related montane and lowland red fox subspecies.* |
| 2018 – 2019 | **Graduate Student Mentor** to Taylor Davis. Independent research project: *Optimizing tissue sampling and extraction protocol for next-generation genomic sequencing.* |
| 2017 – 2018 | **Graduate Student Mentor** to Emma Sutphin. Undergraduate Animal Biology Research Practicum: *Comparison of photographic and genetic determination of abundance*  *of Sacramento Valley Red Foxes (Vulpes vulpes patwin) at den sites.* |
| 2016 – 2017 | **Graduate Student Mentor** to Nicole Gonzalez. Undergraduate Animal Biology Research Practicum: *Contrasting Relative Abundance Indices between Designated and Non-Designated Wildlife Areas.* |

**PROFESSIONAL AFFILIATIONS**

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| The Wildlife Society – member  Society of Conservation Biology – member  Molecular Ecology Working Group (TWS) – member  Western Section of The Wildlife Society – member |

**PROFESSIONAL SERVICE**

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| 2022 | **Board Member** – Molecular Ecology Working Group of The Wildlife Society |
| 2019, 2020 | **Co-Chair** – Graduate Student Symposium in Ecology |
| 2017, 2019 | **Committee Member** – UC Davis Graduate Group in Ecology Admissions |
| 2017, 2018 | **Committee Member** – Graduate Student Symposium in Ecology |
| 2016, 2017 | **Meeting Representative** – Graduate Student Association |

**PUBLIC SERVICE & OUTREACH**

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| Fall 2021 | **Preckler-Quisquater S.** (2021) *Trappers help fill the knowledge gap in North American red fox history*. Saskatchewan Trappers Association Magazine. Fall 2021. Popular science publication written as part of a broader coordinated effort to obtain genetic samples from trappers throughout Canadian provinces. |
| Dec 2020 | **Preckler-Quisquater S.** (2020) ***Peaks, Valleys, and Farms: Insights into the complex heritage of western red foxes.*** Yolo Basin Foundation Flyway Nights Speaker Series, **Invited Speaker**. |
| 2017 – 2022 | UC Davis Girls Outdoor Adventure in Leadership and Science (GOALS). **Founding member**. Developed a free, immersive summer science program for high school girls and gender-expansive youth. |
| Apr 2016 | **Preckler-Quisquater S.** (2021) *Current status of the Sacramento Valley red fox in light of a proposed RV Campsite development at a sensitive denning site.* CA State Parks Commission. **Invited Speaker**. |

**PRIOR FIELD & LAB EXPERIENCE**

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| Jun 2015 – Aug 2016 | **Field Technician.** Sacramento Valley red fox project. UC Davis – California Department of Fish and Wildlife. P.I Sacks BN. Davis, CA. |
| Nov 2013 – May 2015 | **Biological Science Technician.** Fisher Research Project, Pacific Southwest Research Station, US Forest Service. P.I. Thompson C. Oakhurst, CA. |
| Apr 2013 – Nov 2013 | **Biological Science Technician.** Sierra Nevada Adaptive Management Project – Pacific Fisher Monitoring, UC Berkeley. P.I. Roller G. Oakhurst, CA. |
| Jan 2012 – Mar 2013 | **Field Technician.** Mendocino Deer and Mountain Lion Project. UC Davis – California Department of Fish and Wildlife. P.I. Forrester T. Mendocino National Forest, CA. |
| Sep 2010 – Aug 2011 | **Research Intern.** Giraffe Research Project. UC Davis – Kenya Wildlife Service. P.I. Vanderwaal K. Davis, CA – Ol’ Pejeta Nature Conservancy, Nanyuki, Kenya. |
| Dec 2010 – Jun 2011 | **Research Intern.** Chimpanzee Research Project. UC Davis. P.I. Sharpe N. Oakland Zoo, Oakland, CA – Ol’ Pejeta Nature Conservancy, Nanyuki, Kenya. |
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