

Caleb Quinn Alexander Hearn

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SUMMARY

Applied economist specializing in natural resource and public land economics with research interests in water resources, parks, and forest management. Graduate student in Environmental & Natural Resource Economics with a proven track record in empirical research, data science consulting, and technical instruction. Proficient in R, Stata, and reproducible workflows using LaTeX and Quarto to translate complex research data into real policy insights.

EDUCATION

Colorado State University

Est. May 2028

Master of Science in Natural Resource Economics

California State University, Chico

Bachelor of Arts in Economics, with a Minor in Applied Statistics

- Honors & Awards: 1st Place Winner – 40th Annual California State University Systemwide Research Competition; 1st Place Winner – Student Research Symposium Dennis and Jan Hefner Economics Achievement Award; Outstanding Senior in Applied Statistics; Dean's List (all semesters); Honors in the Major

Shasta College

Associate of Arts in Mathematics and Computer Science

SKILLS & METHODOLOGIES

- **Econometrics & Causal Inference:** Causal Inference, Revealed Preference Modeling, Selection Bias & Covariate Balance Diagnostics, Model Specification Testing, Functional Form & Heteroskedasticity Diagnostics
- **Data Science & Qualitative Analysis:** Qualitative Coding, Thematic Analysis, Qualitative Analysis, Fuzzy String Matching, Longitudinal Analysis, Survey Design, Data Cleaning, Disaggregated Demographic Analysis
- **Programming & Software:** R, Stata, Quarto, LaTeX, Excel, OSRM and Census API Integrations
- **Technical Communication:** Data Visualization, Academic Conference & Seminar Research Presentations, Technical Method Manuals, Executive Policy Briefs

ACADEMIC & RESEARCH EXPERIENCE

Colorado State University

August 2026 - Present

Graduate Teaching Assistant

- Facilitates academic instruction and student support for agricultural and environmental economics
- Assists faculty in curriculum delivery, grading assignments, and mentoring students

Wildcat Data Hub

May 2025 - June 2026

Intern Research & Data Science Consultant

- Conducted statistical and data science consulting for faculty, staff, and graduate researchers across academic and administrative university departments
- Developed analysis pipelines and R code for a graduate thesis on regenerative agricultural practices, quantifying soil sample microbial metrics and visualizing ecosystem results
- Advanced multi-year longitudinal research for the Louis Stokes Alliance for Minority Participation (LSAMP) by integrating novel dataset features in R
- Hosted weekly drop-in technical sessions troubleshooting R and Stata code, experimental designs, and statistical modeling errors

California State University, Chico

January 2025 - June 2026

Instructional Student Assistant

- Provided 1:1 mentorship and classroom instruction across Statistics, Finite Math, and Calculus
- Debugged student code in R and Stata, ensuring validity and reproducibility in statistical models.

RESEARCH PROJECTS

Buy Now, Pay Later and Patterns of Financial Precarity

Awarded 1st Place at the 40th Annual CSU Statewide Research Competition

- Formulated an empirical framework leveraging the Federal Reserve's Survey of Household Economics and Decisionmaking to examine whether BNPL use causes short-run household financial precarity
 - Applied Propensity Score Matching (PSM) on a linked multi-year dataset (N = 8,030) to address selection bias, matching new BNPL adopters to observationally identical non-users based on 2023 pre-treatment financial constraints and demographic attributes
 - Evaluated covariate balance using Rubin's B/R diagnostics and estimated Average Treatment Effects on the Treated (ATT) across three core liquidity outcomes: overspending, overdraft fees, and emergency savings
- Demonstrated that raw associations between BNPL and precarity reflect negative selection into BNPL by already vulnerable households (preferred ATTs: -3.3 pp for overspending, 0.9 pp for overdraft fees, 1.4 pp for emergency savings; all statistically insignificant) rather than direct causal financial deterioration

Valuation of the Sacramento National Wildlife Refuge: A Revealed Preferences Approach

Utilizing Visitor Survey Data courtesy of partners at the United States Fish & Wildlife Service

- Conducted applied public-land economics research using revealed-preference travel cost modeling to estimate recreational use value and willingness to pay for the Sacramento National Wildlife Refuge.
- Engineered an R data pipeline to clean and standardize visitor-origin data across 203 geographic zones using fuzzy Levenshtein string matching, then integrated OSRM routing data to calculate travel distances and times.
- Constructed visitor travel-cost measures using vehicle operating costs and opportunity costs derived from ACS 5-year median household income data.
- Evaluated alternative econometric specifications using Breusch-Pagan, Ramsey RESET, and VIF diagnostics and estimated \$24.2M in annual recreational value, demonstrating the social returns associated with public conservation investments.

Demographic Heterogeneity in Park Use and Accessibility

Contracted by the Chico Area Recreation & Parks District through Wildcat Data Hub

- Conducted qualitative and quantitative analysis of open-ended survey responses to evaluate park preferences and accessibility barriers across geographic sub-regions, age cohorts, and gender groups.
- Developed and applied a systematic qualitative coding framework to organize open-ended responses, identify recurring themes, and assess demographic heterogeneity in reported park access and use.
- Engineered modular R data pipelines to clean, organize, and integrate complex survey data, preserving coded qualitative responses alongside quantitative demographic measures for subgroup analysis.
- Translated qualitative themes and disaggregated statistical findings into publication-ready visualizations and actionable recommendations for CARD's municipal master plan.

Cross-Park Thematic Analysis

Contracted by the Chico Area Recreation & Parks District through Wildcat Data Hub

- Independently designed and managed an end-to-end qualitative research initiative analyzing open-ended park survey responses to inform CARD's Master Development Plan.
- Developed a systematic coding framework and conducted thematic analysis of unstructured responses to identify recurring visitation drivers, facility-specific preferences, and access barriers across park systems.
- Developed a hybrid text-analysis workflow combining qualitative coding, classical tokenization and frequency analysis, and LLM-assisted text processing to organize and synthesize large volumes of open-ended responses.
- Produced a 13-page strategic findings report translating coded themes into park-by-park recommendations, alongside a comprehensive methodology manual documenting the research and coding workflow for reproducibility by internal agency teams.