

Vishal Kennedy

Data-Driven Policy · Measurement, Causal Analysis, and External-Facing Analytics

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Knoxville, TN · Open to relocation: New York City, San Francisco, or Washington, DC

Summary

Data scientist specializing in quantitative measurement, policy evaluation, and external reporting. Six years of quantitative research experience using Python, R, and SQL across federal, administrative, and behavioral datasets, producing national-scale evidence for federal agencies and NGO partners, and briefing agency leadership directly. Works in environments where ambiguity is expected. Good policy questions rarely arrive with perfect datasets or clean experimental settings; they require judgment, careful measurement, causal reasoning, and the ability to explain uncertainty without losing clarity.

Core Competencies

Policy impact evaluation · quasi-experimental design and matching estimators · metric definition and benchmark construction · measurement frameworks for public-affairs campaigns · reporting pipelines, dashboards, and discrepancy control · environmental compliance and audit reporting standards · regulatory landscape analysis · scenario analysis under uncertainty · program and project management · executive briefing

Relevant Experience

University of Tennessee, Armsworth Lab

Knoxville, TN

Graduate Research Scientist, NSF Funded · Partners: NatureServe, U.S. Geological Survey

Aug. 2022 - Present

- Determined which metric faithfully represents national policy performance to external audiences: proved the headline statistic in widest official use systematically overstates it, and designed the proportional-parity benchmark replacing it across 210 classification categories nationwide.
- Quantified how metric definition drives externally reported results: the permissive tier supplies 70% of the headline number, and a published policy target appears met for 63% of units under the loose definition against 19% under the strict one. Exactly the discrepancy risk that surfaces when a figure is shared publicly without its definition.
- Audited a widely cited published result and proved its reported intercept and crossover point were algebraic identities rather than empirical findings, retracting an inference that had already propagated into downstream policy debate.
- Own the Python and R pipelines and partner-facing reporting tables reconciling four heterogeneous federal data sources with automated QA, so every externally reported figure traces to source; reproduced all 21 published statistics from the prior national assessment as a validation gate. Sole technical lead on federal and NGO partners.
- Measured policy impact from observational data with a matching design: 174 matched clusters across two reporting vintages, benchmarked against null-model counterfactuals, with variance decomposition isolating where the national reporting bias originated.
- Built a multi-jurisdiction burden-attribution model from scenario-based projection across 13 state jurisdictions and 270 tracked units, combining simulation and network analysis with concentration (HHI) and evenness (Pielou) indices to quantify where policy impacts cross regulatory boundaries no single authority spans.

U.S. Biosphere Network

Washington, DC / National

National Policy Board Member (Youth Seat)

2025 - Present

- Authored the national gap analysis behind the Network's policy position and briefed senior federal agency leaders, a federal climate science center, and UNESCO working groups on national target performance.
- Translate quantitative findings into policy positions agency and international stakeholders act on, for audiences with no statistical background.

National Wildlife Federation

Reston, VA / Remote

EcoLeaders Graduate Research Fellow and Platform Strategist

May 2025 - Oct. 2025

- Reconstructed several prior years of platform user-analytics records into a consistent cohort panel, then ran longitudinal behavioral analysis to isolate which onboarding and retention actions actually moved engagement, and rebuilt the funnel around them: 283% engagement increase over the prior cycle.
- Built and maintained the recurring dashboards that made engagement, onboarding, and retention legible to staff and external partners, defining the underlying metrics and instrumentation so reported figures stayed consistent across cycles.
- Specified enterprise API integrations with platform engineers and delivered an executive-adopted 6-12 month roadmap, pairing qualitative stakeholder research with platform telemetry to validate findings before they reached external reporting.

Perplexity AI

Campus Strategist and Training Program Lead

Knoxville, TN / Remote

Jan. 2025 - Oct. 2025

- Built and delivered a technical AI-literacy curriculum to 500+ researchers, faculty, and staff, covering structured prompting, literature-synthesis workflows, and source-verification methods; mentored a cross-departmental network of student AI champions.
- Built AI-assisted workflows aggregating news, literature, and public sources into verified briefs; drafted department-adopted responsible-use guidelines and ran feedback cycles between users and product engineering across fast release windows.

Baker School Audit Workshop · Environmental Law Organization

Regulatory Analysis and Disclosure Standards

Knoxville, TN

2024 - Present

- Track and analyze state and federal energy and land-use policy: EV infrastructure, utility incentives, clean energy standards, and siting compliance; co-authored a regulatory comment letter on a contested federal permitting decision.
- Apply ISO 14001 audit and U.S. EPA disclosure-reporting standards to analytical documentation, holding externally filed figures to audit-trail consistency.

Manipal Centre for Natural Sciences · University of Western Australia

Research Scientist; Summer Research Intern

India / Australia

Jun. 2021 - Aug. 2022

Selected Policy Impact

AI adoption parity index (2026). Open analysis measuring state-level AI adoption against AI-exposed employment rather than population, using the Anthropic Economic Index, BLS OES, and O*NET, with Lorenz curves and Gini coefficients on raw and exposure-adjusted distributions. github.com/vkenned2/Anthropic_ai-adoption-parity-index.

Written for external audiences. Federal regulatory analysis of statutory authority, compliance standards, and multi-party co-management - policy memorandum, National Wildlife Federation, third place, national · co-authored public comment letter on a contested federal permitting decision · open-access guides on converting analytical results into federal regulatory comment (2024-2026).

Peer reviewed. Kennedy, V., Armsworth, P. R., et al. Distributional measurement of national policy target attainment across governance tiers. In preparation, Conservation Science & Practice. Presented at IALE North America (keynote, 2026), U.S. Biosphere Network, Washington DC (2026), and a federal climate adaptation science center (2025).

Education

The University of Tennessee

Knoxville, TN

Ph.D., Ecology · Research focus: data-driven decision making and policy

Aug. 2022 - May 2027 (expected)

- Dissertation: quantitative evaluation of national policy target performance - metric design, benchmark construction, and distributional measurement across federal administrative data. Developed with the U.S. Geological Survey, funded by the National Science Foundation. Candidacy exam passed May 2026.
- Graduate policy training, Howard H. Baker Jr. School of Public Policy and Public Affairs: Administrative and Regulatory Policy, Public Policy Process, Public Management, Biometry.

Indian Institute of Science Education and Research (IISER)

Kolkata, India

Integrated B.S. and M.S., Ecology and Environmental Biology

Aug. 2016 - Aug. 2021

- Master's thesis research from 2020. Elected General Secretary, Student Affairs Council: budgets and operations for a 4,000+ member organization.

Relevant Technical Skills

Languages and tools. Python (pandas, NumPy, statsmodels, scikit-learn, PyTorch), R (tidyverse, sf, lme4), SQL, Git and GitHub, JavaScript and Node.js, STATA, advanced Excel.

Statistics and causal inference. Matching estimators on observational data, counterfactual and null-model benchmarking, variance decomposition, regression (linear, log-log, GLM, mixed-effects), concentration and inequality metrics (Gini, Lorenz, HHI, Pielou), longitudinal cohort analysis, scenario projection, power analysis, uncertainty quantification.

Data, reporting, and applied AI. Large public, federal, and administrative datasets; automated QA and consistency checks; reproducible notebooks and reporting pipelines; Tableau, Power BI, ArcGIS, QGIS. LLM APIs and elicitation design; shipped a full-stack Node/Express agent on the Gemini API; autoencoder computer-vision pipelines at ORNL.

Selected Awards and Certifications

Elected Student Representative, Executive Committee, IALE North America (2026) · William Bryne-Hartz Fellowship (2026) · Real Brown Award, Ecological Society of America (2026) · Tom Gilbert Award, Baker School (2026) · EcoLeaders Fellowship, NWF (2025) · Certifications: Project Management, Baker School · EPA regulatory training (CAA, CWA, RCRA) · ISO 14001 Lead Auditor · GIS, ISRO