Joseph Gazing Wolf

Statement of Research Interests

Research at the scale of place

My research asks how people and landscapes recover together—how working lands and conservation lands can be co-managed to sustain biodiversity, food, and culture. Over nearly four decades as a land steward, scientist, and collaborator, I have built an applied, field-based program that braids Traditional Ecological Knowledge (TEK) with Western science. The work is relational and hands-on: students collect the evidence, make meaning from it, and see their results matter to partners. The question beneath all my projects is simple: what practices help communities and ecosystems thrive, and how do we know?

A regional agenda anchored at Deep Springs

Deep Springs Valley, the White Mountains, and the Owens Valley form a living laboratory of aridland systems—alkali meadows and salt flats, desert springs and seeps, sagebrush steppe and pinyon-juniper, snow-shadowed montane forests. This landscape is also deeply peopled: Tribal Nations, ranchers, water managers, and agency stewards shaped by a century of extraction and resilience. Here, I see three braided research themes that invite student participation from day one:

1) Water, springs, and groundwater-dependent ecosystems. We will map and monitor springs and irrigation ditches; measure discharge, water chemistry, temperature, and macroinvertebrates; track riparian vegetation change; and relate these to snowpack, monsoons, and management. Students can build low-cost sensor networks (loggers, phenocams, simple staff gauges) and maintain an open dataset that serves the ranch and regional partners.

2) Rangeland ecology and stewardship. Working with the College's ranch operations and neighbors, we will evaluate grazing systems, forage dynamics, soil health, and wildlife–livestock interactions. Students will implement rotational exclosures and photopoints, estimate biomass with quadrats and UAV-based vegetation indices, and support adaptive decisions on timing, intensity, and rest.

3) Biocultural restoration and invasive species control. With local Tribes and agencies, we will test treatments that support native grasses, shrubs, and culturally important plants; assess cheatgrass and other invasives; and measure outcomes for pollinators, birds, and small mammals. Students will compare restoration plots, track seedling survival, and evaluate cost-benefit with partners.

Ongoing projects and the Heritage Lands Collective

As Executive Director of the Heritage Lands Collective (HLC), I lead multi-partner projects that integrate TEK and science across the West and beyond. Current efforts include (a) co-stewardship agreements supporting Tribal and community priorities on conservation and working lands; (b) remote-sensing and field-validated monitoring of rangelands and riparian corridors; (c) ethical return of benefits (jobs, co-authorship, shared IP) to partner communities. We operate an undergraduate internship program that places students on active projects—with paid roles as field technicians, data analysts, communications leads, and liaisons to community partners. HLC also maintains university partnerships (e.g., with Arizona State University and

collaborating campuses) that provide lab access, mentoring networks, and pathways to co-mentored honors theses.

Deep Springs students would plug directly into this work. During the academic year, teams could maintain local monitoring (springs, rangeland plots, phenology cameras) while contributing to larger HLC datasets and comparative studies. In the summer, students could enter the HLC internship pipeline for placements on partner lands—bringing skills and questions back to the Valley the following fall. The result is a virtuous cycle: local projects feed regional science; regional partnerships bring resources and opportunity home.

Methods and tools—learning by doing

Our toolkit is mixed-methods and reproducible. Field: transects, quadrats, point-intercept, exclosures, camera traps, acoustic recorders, and UAV mapping (FAA-licensed operations) to produce orthomosaics and vegetation indices. Lab: water chemistry, soil texture and carbon, plant voucher preparation, insect curation. Quantitative analysis in R and Python, with documented workflows, tidy data, and shared repositories. Qualitative components—oral history, participatory mapping, and structured interviews—when projects involve knowledge holders and community governance. Students learn experimental design by designing experiments; they learn statistics by analyzing the data they helped collect; they learn ethics by practicing consent, attribution, and benefit-sharing.

Student roles and products

Each project is built around rotating roles (lead, data, safety, comms) so every student practices leadership and followership. Typical deliverables include: short decision memos to the ranch; data briefs to partners; public-facing field notes and photo essays; and peer-reviewed manuscripts or conference posters (with students as co-authors). I reserve time each week for writing sprints and code review, and I scaffold revision so students grow measurably—clearer writing, stronger quantitative reasoning, more careful field practice.

Community impact

I measure success not only by papers and grants but by what changes on the ground—restored springs, better grazing rotations, safer work, more equitable partnerships, students who return as collaborators. In previous roles, I have managed large ranches and preserves (up to ~200,000 acres; herds >3,000 head), secured ~$6.8M for research and stewardship, and co-authored work with community partners. Those relationships are durable because we deliver useful knowledge and share credit and resources.

Compliance, safety, and care for place

All fieldwork follows safety SOPs (heat, vehicle, livestock, water, tools) and ethical standards (IRB for human subjects when applicable; permits for collections; cultural site protection). We build projects with partners from the start, honor data sovereignty where relevant, and plan for the full lifecycle of data—from collection to archiving to community access. Students see that responsible science is as much about process as results.

Funding and sustainability

I routinely braid resources from agencies, foundations, and universities to support student stipends, field equipment, and community partner time. At Deep Springs I would align local projects with external opportunities—rangeland monitoring pilots, springs restoration grants, undergraduate research supplements—so the work is resourced and students are paid fairly. Over time, we will assemble a long-term regional dataset that underwrites student theses, informs management, and contributes to the broader literature on aridland stewardship and biocultural resilience.

Why Deep Springs

Because the Valley invites serious study and service. Because the College's pillars—academics, self-governance, and labor—fit an applied research program where learning makes a difference the same week it is learned. My goal is simple: to help students translate curiosity into competence, and competence into work that benefits this place and the people who call it home.