

Q19.



**UNESCO CHAIR ON AI AND ENVIRONMENTAL
STEWARDSHIP FOR SUSTAINABLE FUTURES**



Q1. Projects under the UNESCO Chair on AI and Environmental Stewardship for Sustainable Futures at Utah Valley University are full-time faculty-led initiatives developed in collaboration with partners across the Global South. These projects address real-world challenges through education, research, innovation, and community engagement, while actively enriching student learning through hands-on experiences, cross-cultural collaboration, and applied problem-solving. Each project supports the Chair’s mission by fostering inclusive development, advancing sustainability, and promoting ethical applications of technology. While diverse in scope and discipline, all projects are aligned with the United Nations Sustainable Development Goals (SDGs) and share a commitment to intercultural partnership and capacity building.

Q2. Faculty Name
Last name, First name

Hungerford, Hilary

Q3. Faculty Department

Earth Science

Q4. School or College

College of Science and Integrated Studies

Q5. Faculty Email

hilarly.hungerford@uvu.edu

Q6. Other faculty involved (if applicable)

Last name, First name

n/a

Q7. Other faculty department name and contact information

n/a

Q8. Project Name

Living Landscapes: Sacred Forests, Tradition, and Environmental Change in Benin

Q9. Country

Global South ([Click on this link to see the list of Global South countries](#))

Benin

Q10. University partner abroad

still looking for this

Q11. NGO partner abroad and/or local (if applicable)

I was a Peace Corps volunteer here so have relationships with the local leaders in the villages I will be working.

Q12. Description of the project (UVU UNESCO Chair Objectives)

(maximum 500 words)

How does this project align with the UVU UNESCO Chair mission and objectives? Link:

<https://www.uvu.edu/global/unesco/unesco-uvu.html>

This initiative in Benin integrates geospatial science with environmental-cultural storytelling to advance both research and community impact. Sacred forests are small but vital ecological and cultural landscapes that remain protected by traditional beliefs and local governance systems. In a region experiencing population growth, land degradation, and climate change, these forests serve as rare biodiversity refuges. They harbor plant and animal species often absent in surrounding agricultural fields, while also providing ecological services such as soil stability, watershed protection, and micro-climate regulation. Beyond their environmental value, sacred forests embody cultural memory and identity: they are sites for lineage practices, initiation rituals, healing traditions, and intergenerational transfer of indigenous ecological knowledge. In short, they are living social-ecological systems where cultural and natural heritage are inseparably linked. The project seeks to (1) understand how sacred forests are managed and how cultural change influences conservation practices, (2) map forest extent and monitor land-use change over time through geospatial technologies, and (3) create innovative teaching materials that bring global sustainability challenges into UVU classrooms. By weaving together qualitative research with geospatial analysis, the project provides new insight into how communities manage their resources in the face of rapid environmental change. A distinctive strength of this initiative lies in the relationships and cultural knowledge built over decades. As a former Peace Corps Volunteer in central Benin (2002–2004), I lived and worked in many of the villages that now serve as project sites. This experience gave me proficiency in French and conversational ability in local language, as well as trust-based relationships with local leaders, families, and traditional authorities. When I returned in 2019 for preliminary research, these connections proved essential: village kings and religious leaders welcomed the project, invited collaboration, and confirmed the importance of documenting and preserving sacred forests for future generations. My ongoing personal and professional ties to the region ensure that this project is grounded in community priorities rather than imposed from outside. For UVU students, the project provides hands-on training in both qualitative and quantitative methods, including interviews, participatory mapping, remote sensing, and GIS analysis. Students will work alongside local community leaders in Benin to co-produce knowledge, gaining practical experience in intercultural fieldwork and applied sustainability science. Community members, in turn, will receive training in accessible geospatial tools—such as Google Earth, OpenStreetMap, and Earth Engine—that they can use for monitoring their own forests and advocating for support with government agencies or NGOs. The outcomes extend beyond research and training. By documenting cultural practices tied to sacred groves, producing 360-degree imagery for virtual reality, and developing story maps and classroom modules, the project creates innovative educational materials that bring African perspectives and global environmental issues into UVU environmental education courses. These resources will help students connect local learning with global sustainability challenges and deepen their understanding of cultural diversity in environmental stewardship. In doing so, the project strengthens Global South partnerships, empowers local communities, advances student research and education, and expands global knowledge networks—all of which support the mission and objectives of the UVU UNESCO Chair on AI & Environmental Stewardship for Sustainable Futures.

Q13. Description of the project (Sustainable Development Goals)

(maximum 500 words)

How does this project align with the 2030 Global Agenda and which SDGs? Link: <https://sdgs.un.org/goals>

This project on the conservation of sacred forests in Benin directly advances the United Nations 2030 Agenda for Sustainable Development by integrating ecological geospatial science, cultural heritage, and community empowerment. Sacred forests are critical ecological sanctuaries and cultural sites. They safeguard biodiversity in heavily cultivated landscapes while also serving as centers of spiritual and social life for local communities. By combining geospatial mapping, participatory cultural documentation, and educational innovation, this initiative supports multiple Sustainable Development Goals (SDGs), especially those focused on education, resilient communities, climate action, biodiversity conservation, and global partnerships. SDG 4 – Quality Education The project advances Target 4.7, which calls for learners to acquire knowledge and skills for sustainable development. UVU students gain hands-on training in geospatial technology, qualitative research, and intercultural collaboration. They learn to analyze environmental change using both technical and cultural perspectives, preparing them to address global sustainability challenges. Local community leaders in Benin are trained in accessible tools such as Google Earth and OpenStreetMap, ensuring that education is not one-directional but mutually empowering. This aligns with the goal of education for sustainable development by building both global and local capacity. SDG 11 – Sustainable Cities and Communities The initiative contributes to Target 11.4, which emphasizes the protection of the world's cultural and natural heritage. Sacred forests are deeply intertwined with cultural traditions, lineage practices, and religious beliefs. By documenting and mapping these sites, the project safeguards their dual role as biodiversity refuges and cultural heritage landmarks. In addition, participatory mapping ensures that local voices guide conservation strategies, reinforcing the sustainability of communities who rely on sacred forests for identity and cohesion. SDG 13 – Climate Action Sacred forests are vulnerable to climate variability and land-use pressures. By monitoring land-cover change and forest extent over time, the project addresses Target 13.1, which seeks to strengthen resilience and adaptive capacity to climate-related hazards. Mapping biodiversity hotspots and degraded areas provides baseline data for climate adaptation planning. Training local leaders in geospatial monitoring equips them with tools to track environmental changes, advocate for resources, and develop localized strategies to mitigate climate impacts. SDG 15 – Life on Land At the heart of this project is a commitment to Target 15.1 (conservation of terrestrial ecosystems) and Target 15.5 (halting biodiversity loss). Sacred forests often contain species richness and ecological diversity unmatched in surrounding agricultural zones. Documenting forest fragmentation, mapping ecological corridors, and supporting community-led monitoring contribute directly to halting degradation. By integrating traditional ecological knowledge with scientific methods, the project highlights how cultural values can reinforce global conservation priorities. SDG 17 – Partnerships for the Goals Finally, the initiative advances Target 17.16, which emphasizes global partnerships. The project is rooted in equitable collaboration between UVU, Beninese communities, and the broader UNESCO Chair network. These partnerships embody the spirit of the 2030 Agenda by fostering intercultural dialogue, mutual learning, and knowledge co-production between the Global North and South. This project advances SDGs 4, 11, 13, 15, and 17. It embodies the integrative spirit of the 2030 Agenda by linking education, cultural heritage, ecological conservation, climate resilience, and global partnerships. Sacred forests in Benin become not only sites of ecological and cultural importance but also living laboratories where students, faculty, and community leaders work together to achieve shared sustainability goals.

Q14. Estimated budget

Funds to support the project up to \$2500 (can be used for travel and lodging expenses related to a faculty site visit to establish the project). Additional funding related to per-diem or other expenses must be negotiated with the department/college. Limited additional funding may be available once the project is established. For any projects involving students, plan accordingly and seek external funding from grants or department/college sources. The UNESCO Chair on campus currently does not have funding to support students. Please work with your college development officer to request funding.

I will seek \$2,500 for this project with UVU UNESCO. I will also apply for a GEL grant and students will seek SAC funding through the College of Science.

Q15. Timeline of the project

Fall 2025 – Student recruitment and training; finalize research design and community partnerships. Spring 2026 – Preparations for fieldwork, including background research, logistics, and development of research instruments. June 2026 – Fieldwork in Benin: geospatial data collection, cultural documentation, and community training. Fall 2026 – Data analysis, student research projects, and development of teaching materials. Spring 2027 – Dissemination of results to partner communities, conference presentations, publications, and course integration at UVU.

Q16. How will students participate in this project?
(maximum 200 words)

Students are central to every stage of the project. In preparation, they will engage in background research, literature review, and training in both geospatial technologies and qualitative methods. During fieldwork in Benin, students will work directly alongside faculty and community leaders to collect data on sacred forest extent and management practices. This will include operating GPS equipment, conducting semi-structured interviews, and helping create maps that integrate ecological and cultural knowledge. Equally important, students will take part in documenting cultural practices tied to sacred groves through photography, 360-degree imagery, and audio recording. These materials will later be transformed into story maps and classroom modules that expand sustainability teaching at UVU. Students will also help train local youth and community leaders in using accessible geospatial tools, reinforcing a spirit of knowledge exchange and co-learning. Following the fieldwork, students will analyze qualitative and quantitative data, prepare professional posters, and co-author manuscripts for conferences and peer-reviewed journals. In this way, the project not only builds student research capacity but also provides career-relevant experience in intercultural collaboration, applied environmental science, and global sustainability.

Q17. As part of this project, would there be any potential Global Fieldwork experiences?
Please note that Global Fieldwork Experiences cannot be conducted in conjunction with a study abroad program.
Link: [Global Fieldwork information](#)

Yes in Benin

Q20. How does this UNESCO proposal benefit the Utah Community?
(maximum 200 words)

Although centered in Benin, this UNESCO project provides significant benefits to Utah communities by advancing education, cultural awareness, and sustainability. First, UVU students gain transformative, hands-on experiences in international fieldwork, which they bring back to Utah classrooms, professional conferences, and community events. These experiences prepare students for careers in sustainability, education, and global engagement, directly strengthening Utah's workforce. Second, the project produces innovative teaching materials—virtual reality experiences, interactive maps, and story maps—that allow Utah students who cannot travel abroad to engage with global sustainability challenges from their own classrooms. By integrating these materials into general education courses, thousands of Utah Valley students will gain exposure to global environmental and cultural issues in ways that make connections to their own communities. Third, the project reinforces Utah's role as a hub of global collaboration. By linking local students and faculty with international partners through the UNESCO Chair network, the initiative highlights Utah's contributions to the global community. Finally, lessons learned in Benin—such as community-based conservation, intercultural dialogue, and the importance of cultural heritage in environmental stewardship—offer models that can inform local sustainability efforts in Utah, from urban forestry to land conservation.

Q18. Any additional comments
Priority will be given to: Student involvement, Fulfillment of UVU UNESCO Chair Objectives, Department Financial Support.

Excited about this!

Location Data

Location: ([40.2783](#), [-111.7198](#))

Source: GeoIP Estimation

