

TURAM PURTY

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RESEARCH AREA

I am a doctoral candidate at the University of Washington (Seattle, USA). My research examines how shared ownership of online data is established, negotiated, and communicated in public repositories; how attribution mechanisms (e.g., data licenses and embedded metadata) are implemented and maintained across the data lifecycle; and how encoding and decoding approaches can preserve privacy and support data sovereignty as datasets move through distributed information systems and GenAI pipelines. I use mixed methods and participatory design to surface tacit digital practices among diverse stakeholders and translate findings into actionable research, product design and policy recommendations.

EDUCATION

- 2021-2027 **Ph.D. Candidate (ABD)**, University of Washington, Seattle, USA
Programme: Information Science
Dissertation: Data Sovereignty in the age of GenAI: Exploring data curation, access and reuse practices in Online Indigenous Data.
Committee: Dr. Clarita Lefthand-Begay (Chair)
 Dr. Christopher B. Teuton (Member)
 Dr. Spencer Williams (Member)
 Dr. Emily M. Bender (Graduate School Representative)
- 2018-2020 **M.S. Information Management**, University of Washington, Seattle, USA
Specialization: Information Architecture, User Research
Graduation: Faculty Award for Student Excellence, Class of 2020
- 2007-2011 **Bachelor of Technology**, National Institute of Technology, Jamshedpur, India
Major: Metallurgical and Materials Science Engineering

JOURNAL PUBLICATIONS

1. Lefthand-Begay, C., **Purty, T.**, Williams, M., & Carl, S. (2024). Insights from Reflexivity on Strengthening Water Security in Tribal Communities through Collaborative Approaches. *Indigenous Public Humanities*, Cambridge University Press, (*in press*)
2. Lefthand-Begay, C., Kuhn, N., **Purty, T.**, Campbell, T. R., Sarkar, S., Brisbois, J., Ruhm, R., Lama, K. C., Rodriguez, A., Ghost Dog, C., Dennison, J. M., Chatto, S., & Guo, R. (2024). Cultivating a space for intergenerational research mentorship through Knowledge Families. *Wicazo Sa Review*, 37(1), 1–28. <https://dx.doi.org/10.1353/wic.2022.a944279>
3. P.G. Petroianu, L., Zabinsky, Z. B., Zameer, M., Chu, Y., Muteia, M. M., Resende, M. G., Coelho, A. L., Wei, J., **Purty, T.**, Draiva, A., & Lopes, A. (2021). A light-touch routing optimization tool (RoOT) for vaccine and medical supply distribution in Mozambique. *International Transactions in Operational Research*, 28(5), 2334–2358. <https://doi.org/10.1111/itor.12867>
4. Bailey, C., Farrell, A., **Purty, T.**, Taylor, A., & Disney, J. (2021). Development of privacy features on Anecdota.org, a free citizen science platform for collecting datasets for climate change and related projects. *Frontiers in Climate*, 3, 620100. <https://doi.org/10.3389/fclim.2021.620100>

5. Vogt, K.A., Schreier, A., Orloff, A., Marchand, M.E., Vogt, D.J., Fawcett, P., De Abreu, S., **Purty, T.** & Murphy-Williams, M., (2021). Building Environmental literacy through holistic storytelling. *Online Journal of Ecology & Environmental Sciences*. (ISSN: 2993-8864) <https://irispublishers.com/ojees/pdf/OJEES.MS.ID.000501.pdf>

PAPERS IN PROGRESS

1. **Purty, T.**, Carl, S., Williams, M., Polissar, N., Million, D., & Lefthand-Begay, C. (2026). A case study for tribally led research partnerships to assess water security through a community-centered household survey at Akiak Native Community (ANC). Under review (*International Water Association Publishing*).
2. **Purty, T.**, & Teuton, C. B. (2026). Archiving Indigenous data and metadata for a digital reproduction of the print book Cherokee Earth Dwellers. In preparation (*Archives 2026 Conference, Journal for Imaging Science and Technology*).

CONFERENCE PRESENTATIONS, PROCEEDINGS AND WORKSHOPS

1. Nicole K., **Purty, T.**, Lefthand-Begay, C., (2026, July 22-24). The future of Indigenous data justice and governance in the US: environment, health, social media, and AI. *Native American and Indigenous Studies Association (NAISA) Fifteenth Annual Conference*, Temuco, Wallmapu, Temuco, Chile.
2. **Purty T.** (2026, April 12-14). Operationalizing Data-Sovereign Infrastructures: The SRJ File Format as a Relational Prototype for Indigenous Governance in Digital Systems. *U.S. Indigenous Data Sovereignty & Governance Summit*, Tucson, AZ, USA.
3. Lefthand-Begay, C., **Purty, T.**, Carl, S., Foss, L., & Williams, M. (2025, July 19-21). Indigenous-led assessment of water security: A study on water perceptions in the Akiak Native Community. *2nd International Sociohydrology Conference*, Tokyo, Japan.
4. **Purty, T.**, Sun, A. S., & Snyder, J. (2025, May 27). Self-assessing the usability of digital resources for projects in participatory science. Research Workshop. *Conference for Advancing Participatory Science*, Portland, OR, USA.
5. **Purty, T.**, Yubing, T., & Snyder, J. (2024, March 20). Validation of usability heuristics for citizen and community science practitioners. Short Research Paper and Poster. *iConference 2024 Proceedings*, Changchun, China. <https://hdl.handle.net/2142/122790>
6. Sun, A., **Purty, T.**, & Teuton, C. (2024, May 17). Design research to generate high-fidelity prototypes for culturally inclusive, relational, and responsible Indigenous e-publications. *Undergraduate Research Symposium*, University of Washington, Seattle, WA, USA.
7. Sun, A. S., **Purty, T.**, Chan, C., & Teuton, C. (2024, April 12). Designing interactive, inclusive, and community-engaged e-publications. *Human-Computer Interaction International (HCII) Student Design Competition*, Washington, DC, USA.
8. Lefthand-Begay, C., **Purty, T.**, Ruhm, R., Williams, M., & Carl, S. (2023, June 28). Tribal water sovereignty & security panel. *Affiliated Tribes of Northwest Indians Changing Currents Summit*, Coos Bay, OR, USA.
9. Guo, R., **Purty, T.**, Ruhm, R., & Lefthand-Begay, C. (2023, May 19). A study to evaluate the utility of an online survey in collecting data from a remote Alaska Native community. *Undergraduate Research Symposium*, University of Washington, Seattle, WA, USA.
10. **Purty, T.**, Nettar, A., Fortin, E., & Snyder, J. (2021, July 15). Sarjom Project, a collaborative vision for a sustainable planet connecting citizen science stakeholders across four dimensions with open data. *Proceedings of the Citizen Science Association Conference*, USA.

11. **Purty, T.**, Chandra, K. K. L., Pandey, A., Misal, V., & Anand, A. (2020, October 14). Sarjom Project: Development of CitSci Manager, an open-source tool for open citizen science datasets. *Proceedings of the Citizen Science Sustainable Development Goals (SDG) Conference*, Berlin, Germany. <https://www.weobserve.eu/citscimanager/>

RESEARCH APPOINTMENTS

2022-2025 **Graduate Researcher**, Information School, Seattle, USA

- Co-designed and deployed a tablet-based household survey to assess perceptions of taste, smell, safety, overall quality, and accessibility of drinking water infrastructure in Akiak Native Community (ANC), Alaska. Funded by [Earth Lab Innovation Grant, Cohort 4](#).
- Redesigned standard informed-consent forms to accommodate both *English* and *Yup'ik* speakers; operationalized Free, Prior, and Informed Consent (FPIC) through IRB-approved protocols and community-approved consent procedures.
- Led a three-day on-site survey training and supported two months of coordination with community partners at ANC. Cleaned, anonymized, and de-identified survey responses.
- Built an R/Quarto data analysis codebook. Produced descriptive statistics, visualizations, within-household pair-wise comparisons and non-parametric/association tests.
- Conducted qualitative thematic analysis of open-ended responses in MAXQDA and integrated qualitative and quantitative findings; led manuscript preparation.

2022-2025 **Graduate Researcher**, Department of American Indian Studies, Seattle, USA

- Led end-to-end digitization and archival preparation of the complete print and multimedia materials for [Cherokee Earth Dwellers](#), encompassing drafts, annotations, illustrations, audio/video recordings, photographs, and field documentation (350+ files; ~60 GB).
- Built a *Python*-based data curation workflow to extract and structure metadata for 600+ bilingual biodiversity records in *Cherokee* and *English* from source documents.
- Processed 40+ hours of research data (audio and video), using Azure transcription APIs, and tagged instances of Cherokee–English biodiversity records.
- Sourced and validated 600+ Creative Commons images from three open biodiversity databases using scientific identifiers (e.g., Linnaean classification and conservation status).
- Linked images, audio, and text to corresponding biodiversity records and created a multimodal archive (1.2 TB; 2,000+ assets); maintained referential integrity across *Cherokee* and *English* names, images, pronunciations, and scientific identifiers.
- Developed Python scripts using OpenAI-APIs to embed web accessibility metadata into the multimodal archive files; generated *Simple Archive Format (SAF)* packages for bulk data ingestion into [D-Space repository](#) (RavenSpace Publication, UBC Press).
- Designed and implemented archival organization and metadata workflows (file inventories, naming conventions, duplicate tracking, and version control) to support long-term preservation and reuse within the [Qualitative Data Repository](#) (QDR, Syracuse University).
- Authored archival documentation informed by CARE, FAIR, and W3C standards, clearly linking data, metadata, documentation, and publication artifacts.

2020-2021 **Anecdota Research Fellow**, MDI Biological Laboratory, Maine, USA

- Conducted surveys and usability studies with citizen science researchers and volunteers to map end-to-end requirements for data curation, analysis, sharing, and project management.
- Redesigned project dashboard, data collection, analysis and attribution interface, impacting the experience of 8,000+ users and 200+ citizen science projects on Aencdata.org.
- Reviewed major data privacy frameworks (GDPR, CPRA, HIPAA, FERPA, COPPA); led revisions to the Privacy Policy and Terms & Conditions; ensuring secure archival and reuse

of sensitive geolocation (GPS), private and personal data.

- **Winner, *EU-WeObserve Open Data Challenge (2020)***: Designed and built an open-source, low-cost metadata exploration toolkit for large-scale, heterogeneous citizen-science datasets, utilized Apache Spark (Databricks) pipelines to support scalable preprocessing, geospatial analysis; implemented privacy-secured, consent-aware attribution metadata.
- Founded “*What’s in my Backyard?*”, a multilingual biodiversity citizen-science project supporting photo-based observations and species identification using common/local/scientific names; collected 1,000+ observations from 300+ contributors.

PROFESSIONAL EXPERIENCE

2020-2021 **Research Consultant**, Vashon Nature Center (VNC), Seattle, USA

- Led a cross-institutional research project through a Memorandum of Understanding (MoU) between VNC, the *Visualization Studies Research Studio*, and *Anecdata.org*.
- Designed the migration of a wildlife monitoring database and meta-data into the *Anecdata.org*, including data restructuring, workflow alignment, and integration planning.
- Supervised and mentored a team of four undergraduate students, assigning responsibilities, reviewing deliverables, and ensuring research and technical quality.
- Developed onboarding materials and technical documentation to enable citizen-science researchers and volunteers at VNC to manage research data effectively on *Anecdata.org*.

2015-2020 **IT Consultant**, Ashoka University, Sonapat, India

- Owned institution-wide ERP operations in Microsoft Dynamics 365, supporting administrative functions of Admissions, Marketing, Communications, HR, IT and Finance.
- Led quarterly software reviews of revenue-critical academic systems, supporting learning management systems, student information system, course registration, gradebooks, course and instructor evaluations, and course fee-payment and reconciliation.
- Conducted IT requirements discovery with internal stakeholders, including registrar/admissions, HR, finance, faculty/students, and academic and operations staff.
- Coordinated with external IT suppliers for development, testing, and release planning; maintained relationships and negotiated contracts, licensing, and compute provisioning.
- Implemented a unified campus portal integrated with ERP services (*my.ashoka.edu.in*) to provide role-based access to IT, library, classroom AV systems, payments (tuition, meals, and scholarships), and scheduling for shared resources (rooms, calendars and transport).
- Authored and implemented IT policies and procedures for access control, change management, and disaster recovery, and produced reports for internal and external audits.
- Delivered a five-year IT budget forecast totaling USD 8M+; analyzed current IT CapEx/OpEx expenditures across institutional software, hardware, and cloud resources.
- Advised senior leadership on strategic allocation for IT training, and infrastructure modernization; delivered annual IT orientation workshops for faculty, staff, and students.

2013-2014 **Research Assistant**, ASRA Education Trust, Chaibasa, India

- Directed a large-scale demographic study of *MGNREGA households*, coordinating a five-member field team across 73 tribal villages; reaching 10,000+ low-income households.
- Administered surveys, interviews, and focus groups; consolidated data to report socio-economic indicators at household, village, and regional (block) levels.
- Coordinated with nonprofit partners to procure desktop computers and internet connectivity in a primary school serving 100+ students from low-income tribal households.

2011-2013 **Systems Engineer**, Infosys Ltd, Bengaluru, India

- Supported and maintained cloud-based database and application services (C/C++/.NET) for a global enterprise collaboration platform serving 10,000+ corporate users.
- Diagnosed, tested, and resolved production issues in Oracle databases using SQL and Java; contributed to system stability, reliability, and improved user search experience.
- Collaborated with global teams across the US, UK, EU, and India using GitHub/Jenkins; designed CI/CD pipelines, implemented database backup/recovery/virtualization, and supported incremental feature delivery.

GRANTS

- *Dissertation Research and Travel Grant*, Center for American Indian and Indigenous Studies (CAIS), University of Washington, 2026-27, Amount: USD 3,000.
- *Research Grant*, Center for American Indian and Indigenous Studies (CAIS), University of Washington, 2023-24, Amount: USD 4,000 (*qacag^{wac}* Award).
- *Entrepreneurship Grant*, University of Washington CoMotion Incubation Lab (NSF Innovation Corps, #1450103), 2020-21, Amount: USD 2,500.
- *Innovation Grant*, WeObserve Open Data Challenge (EU Horizon Grant 2020, #776740), Amount: EUR 5,000.

SKILLS

- *Quantitative Methods*: Descriptive and inferential statistics, regression/association analysis, usability metrics, survey-based analysis, exploratory data analysis.
- *Qualitative Methods*: Co-design, interviews, experimental probes, workshops, focus groups, thematic/narrative/dialectic/reflexive analysis, systematic literature review.
- *Mixed-Methods Research*: Survey and instrument design, scenario-based workshops, usability studies, community-centered and participatory design research.
- *Programming and Data Processing*: Python (data processing, file and metadata management), R (statistical analysis and visualization), SQL; systems and application programming in Java, C/C++, .NET.
- *Web, Application, and API Development*: HTML, CSS, JavaScript, and Node.js; integration and use of Gen-AI APIs (e.g., OpenAI/ChatGPT APIs) to support research workflows (label generation) and application-level data processing (content analysis).
- *Infrastructure, Cloud, and Automation*: GitHub; web servers (Apache, Microsoft IIS); CMS (WordPress, Canvas, Moodle); AWS hosting using S3, EC2, Route 53, ECS, and ELB with backup storage and recovery; SSL/TLS; Docker; CI/CD pipelines; Unix/Linux shell scripting (Bash) for batch processing, automation, and scheduled jobs (cron).
- *Program and Project Management*: IT strategic planning, budget and forecasting; Agile (Scrum, Kanban) sprint planning; DevOps workflows using Jira/Trello; Issue tracking for intake, prioritization, release coordination, and stakeholder communication.

TEACHING EXPERIENCE

2021-2025 **Teaching Assistant**, University of Washington, Seattle, WA, USA

- INFO 200: Intellectual Foundations of Information (5 credit)
- INFO 300: Research Methods in Informatics (5 credits)
- INFO 360: Design Methods in Informatics (4 credit)
- INFO 350: Information Policy & Ethics (3 credit)

INFO 380: Systems Analysis, Design & Product Management (5 credit)
INSC 573: Design Inquiry and Methods in Information Science (5 credit)

2020-2025 **Student Mentorship**, University of Washington, Seattle, WA, USA

- **Independent Research Supervision** (12 weeks)
Designed and supervised independent research study credits in qualitative data analysis for one undergraduate and one graduate student.
- **Design Research Mentorship** (15 weeks)
Designed and supervised a design research internship for one undergraduate student. Funded by the *qacag^{wac}* award.
- **Indigenous-Directed Research Group** (12 weeks)
Designed and supervised independent research study credits in quantitative data analysis for one undergraduate student.
- **Informatics Capstone Project Supervision** (24 weeks)
Designed and supervised capstone credits in systems, design and development for four undergraduate students.
- **Research and UX Internship Lead** (12 weeks)
Designed and supervised a user experience (UX) research internship for one graduate student and three undergraduate students.

PRESENTATIONS, WORKSHOPS AND LECTURES

- *Invited Workshop*, University of Washington, Seattle, WA, USA (April 14, 2025).
Delivered a workshop on “A Beehive Personal Prioritization Matrix,” for 20 PhD students in *Design Inquiry and Methods in Information Science*, Instructor: Dr. Nassim Parvin.
- *Invited Lecture*, University of Washington, Seattle, WA, USA (March 10, 2025).
Delivered a lecture, “Quantitative Measurements in Social Science,” for 70 undergraduate students in *Research Methods in Informatics*, Instructor: Dr. Spencer Williams.
- *Invited Panelist*, University of Washington, Seattle, WA, USA (January 28, 2021).
Participated in a panel on “Interviews and Requirements Discovery,” for 70 undergraduate students in *Information Systems Analysis & Design*, Instructor: Richard Sturman.
- *Invited Speaker*, Berlin, Museum für Naturkunde, Germany (October 14, 2020).
Delivered a session talk, “Demonstrating Value and Applications of Citizen Observatory Data” (theme: Concepts and Methodologies for SDGs), for attendees of *Citizen Science Sustainable Development Goals (SDG) Conference*, Session Chair: Valantis Tsiakos.

SERVICE

- *Journal Reviewer*, Citizen Science: Theory and Practice (CSTP), USA
- *Applicant Reviewer*, Inclusion, Diversity, Equity, Accessibility and Sovereignty (IDEAS), Information School, University of Washington.

MEMBERSHIP

- Information Schools (ISchool.org)
- US Library of Congress, Reader (loc.gov)
- Native American and Indigenous Studies Association (naisa.org)
- NSF Center for Braiding Indigenous Knowledge and Science ([NSF-CBIKS](#))

PROFESSIONAL REFERENCES

Dr. Clarita Lefthand-Begay

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University of Washington, Seattle, USA.
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Dr. Christopher B. Teuton

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Dr. Jane Disney

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