

Edward Turk

GIS & Data Analyst | Environmental Science

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Summary of Qualifications

- Environmental scientist moving into geospatial and analytical roles, pairing five years of laboratory and field research with a completed M.S. in Environmental Management and an Advanced GIS Certificate.
- Build reproducible remote-sensing and GIS pipelines in Google Earth Engine, Python, and R — Sentinel-2 phenology, soil-moisture modeling, and spatial analysis and map production in ArcGIS Pro.
- Combine hands-on field and lab data collection (methane and CO₂ flux, groundwater monitoring, porewater and soil sampling) with the analysis and mapping that turn it into decisions.
- Communicate technical results across scientific, industry, and public audiences; first-author on two manuscripts in preparation and a first-author poster presenter at AGU 2025.

Core Skills

GIS & Map Production: ArcGIS Pro, map production, cartography, digitizing, geodatabases, spatial analysis, QGIS, Google Earth Engine

Programming & Analysis: Python, ArcPy, R, JavaScript, basic SQL, Excel, statistical modeling, data visualization

Field & Environmental: soil sampling, groundwater monitoring, porewater sampling, water/soil quality, handheld GPS, QA/QC, CH₄/CO₂ flux

Communication & Collaboration: technical writing, cross-functional collaboration, stakeholder presentations, SOP authoring, first-author manuscripts

Professional Experience

Graduate Research Assistant, *University of San Francisco* **Apr 2025 – Jul 2026**

- Prepared publication-quality maps, figures, and written summaries in ArcGIS Pro and R for interdisciplinary collaborators on a DOE-funded floodplain hydrology project (East River, Crested Butte, Colorado).
- Built an operational Sentinel-2 processing pipeline in Python and Google Earth Engine, processing 400+ GB of imagery into per-pixel vegetation phenology and 10 m annual soil-moisture rasters across a ~6,000 km² watershed.
- Modeled soil moisture in R and derived terrain and hydrologic indices, including HAND (Height Above Nearest Drainage), from LiDAR DEMs; kriged field sediment-depth surveys.
- Collected field data during soil, porewater, and groundwater-monitoring campaigns; quantified CH₄/CO₂ flux and coordinated data exchange with collaborators at Stanford SLAC; presented a first-author poster at AGU 2025.

Quality Associate II, *ZymoChem* **Jan 2024 – Nov 2024**

- Implemented and maintained ISO-aligned test methods for biopolymer (superabsorbent polymer) performance evaluation; organized, cleaned, and analyzed the test data into summaries and visualizations for stakeholders.
- Led a workplace-safety investigation from hazard identification through contractor coordination and remediation; authored and refined the SOPs behind the methods.

Research Associate II, *Pivot Bio* **Aug 2020 – Oct 2023**

- Served as technical lead for cross-functional development of biological seed-treatment formulations; designed and ran laboratory studies and translated findings into reports and presentations for R&D, pilot-plant, and commercial teams.

- Core team member on Pivot Bio's on-seed formulation, named to TIME's Best Inventions 2023; supported pilot-scale validation, contributed to invention disclosures with patent counsel, and presented formulation results at an agricultural conference.

Junior Specialist, *University of California, Davis*

Jan 2019 – Aug 2020

- Collected and analyzed soil and plant samples across California cropping systems and managed thousands of data points; helped set up randomized block designs and field sampling campaigns.
- Measured nitrogen content in California commodity crops to support statewide nutrient-management guidance; acknowledged by name in a CDFA-FREP report whose nitrogen-removal values inform the Central Valley Irrigated Lands Regulatory Program.

Laboratory Technician, *University of California, Santa Cruz*

May 2017 – Aug 2018

- Ran soil incubation experiments and analyzed soil nitrogen mineralization rates under varied carbon-to-nitrogen amendments through UCSC cooperative extension.
- Tested sustainable methods to counter soil-borne pathogens in California strawberry systems; visualized data trends through graphing.

Selected Projects

Master's Thesis: Complementing Topographic Wetness with Sentinel-2 Phenological Indices to Map Soil Moisture Gradients in a Snowmelt-Driven Mountain Floodplain, *University of San Francisco*

- Built a Google Earth Engine, Python/Jupyter, and R pipeline using Sentinel-2 land-surface phenology and spectral indices with LiDAR-derived terrain analysis to model soil water content at 10 m across a ~6,000 km² watershed.
- Produced annual soil-moisture rasters and wetness-class maps for 2018–2025; first-author manuscript in preparation for the *Journal of Remote Sensing*.

Central Valley Winter Cover-Crop Classification, *Google Earth Engine / Sentinel-2 / Python*

- Built a Google Earth Engine pipeline measuring winter cover-crop adoption and density in California almond orchards across six winters, using SAVI and BSI spectral indices from Sentinel-2 imagery.
- Classified 16,365 orchards across 9 counties and published the results in a self-built serverless deck.gl / MapLibre / PMTiles web map.

Education

M.S. Environmental Management, *University of San Francisco*

August 2026

Joseph Petulla Award, Outstanding Environmental Management Graduate Student; Advanced GIS Certificate.

B.S. Ecology and Evolutionary Biology, *University of California, Santa Cruz*

June 2018