

# EULLE STANN CASAQUITE

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## SENIOR RESEARCH PROJECT

### **Philippine Volcanic Hazards: Improving the Exposure Calculation for the VPI30 Component of the Philippine National Volcanic Threat Assessment Using Sentinel-2 Imagery Data and GIS Extraction Methods**

- Collaborator for the Philippine National Volcanic Threat Assessment Project (2024- 2025)
  - Processed large population dataset to assign values to individual towns surrounding Mt. Kanlaon
  - Completed analysis to isolate built area pixels from Sentinel-2 land cover data
  - Compared current and modified exposure methods to identify methodological improvements
  - Results will be verified by the Philippine Institute of Volcanology and Seismology to be replicated and used in future Philippine National Volcanic Threat Assessment report
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## EXPERIENCE

### **Cartographic Assistant | Department of Geology | Augustana College, Rock Island, IL** **Dec 2024 - May 2025**

- Developed and maintained geodatabases in ArcGIS Pro to reconstruct paleogeography settings of Trinidad and Tobago
- Generated shapefiles containing up to 1600 individual vertices from georeferenced paleogeography maps

### **Intern | Philippine Institute of Volcanology and Seismology | Quezon City, Philippines** **Jun 2024 - Jul 2024**

- Generated shapefiles and maps of current Mt. Tumatangas volcanic deposits and possible lahar extent
- Created stratigraphic interpretation of Mt. Taal volcanic deposits based on field observations
- Created ash dispersal models of Mt. Kanlaon Volcano following the June 2024 eruptions
- Completed remotely piloted aircraft training
- Prepared pumice samples from 1992 Pinatubo Eruption for X-ray Fluorescence analysis

### **Researcher | Upper Mississippi Center | Augustana College, Rock Island, IL** **Jul 2022 - May 2024**

- Modified methodology to quantify microplastics in water and sediment samples
  - Completed field and lab work to isolate, detect and quantify microplastics in water and sediment samples
  - Deployed multi-parameter probes to assess water quality of streams in Rock Island (IL) and Scott County (IA) watersheds
  - Collected fish and microorganism samples in streams to assess biodiversity health of streams
  - Operated a kayak to collect bathymetry data using ESRI FieldMaps
  - Assisted with generating GIS maps and graphics for the city of Rock Island
  - Used large dataset of field survey results to isolate and identify possible lead service lines in the city of Rock Island
  - Canvassed houses to identify service line materials for the city of Rock Island
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## RESEARCH PROJECTS

### **Philippine Volcanic Hazards: Improving the Exposure Calculation for the VPI30 Component of the Philippine National Volcanic Threat Assessment Using Sentinel-2 Imagery Data and GIS Extraction Methods (Mar 2025)**

- Presented at the Geological Society of America 2025 Joint North East – North Central Section Meeting at Erie, PA and at the Augustana College Celebration of Learning

### **Topographic Interpretation of Mt. Tumatangas, Sulu Philippines (Jul 2024)**

- Presented and proposed to the volcano section of the Geology and Geophysics Research and Development Division at the Philippine Institute of Volcanology and Seismology, Quezon City, Philippines

### **Ubiquitous Microplastics in Fluvial Sediments of Urban Streams in Davenport and Bettendorf, Iowa (Apr 2024)**

- Presented at the Geological Society of America North Central - South Central Meeting at Springfield, MO

## Stream Assessment of Microplastics in Quad City Watersheds (Apr 2023)

- Presented at the Upper Mississippi River Research Consortium at La Crosse, WI
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## FIELD COURSES AND EXPERIENCE

- **Taal Volcano, Batangas, Philippines (Jul 2024)** - 1 week fieldwork experience to identify and understand volcanic processes through main crater tephra and tuff deposits across various outcrops; conducted a house-to-house survey to assess damages of volcanically induced fissures
  - **Collinson Ecological Preserve, Milan, IL (Apr 2023)** - Geomorphology and surficial geology mapping, focused on interpreting glacial geology in the Midwest
  - **Mojave Desert/Death Valley, CA (Jan 2023)** - 3-week field mapping course, which included measuring stratigraphic sections, mapping faults, and creating a geological map of rock units in the Rainbow Basin syncline near Barstow, CA
  - **Baraboo, WI (Nov 2022)** - Weekend field trip to Baraboo, WI, to study a syncline and analyze geological structures using a Brunton Compass and stereonet
  - **South Dakota/Wyoming (Aug 2021)** - Summer field course of intro-level geologic concepts in the Badlands, Devil's Tower, Bighorn Mountains, and Wind River Canyon, with a focus on rock identification and pressure/temperature concepts
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## TECHNICAL SKILLS

- **ArcGIS Pro** - Data Engineering, Georeferencing, Charts and Reports, StoryMaps, Survey123, Cluster Analysis, Regression Analysis, Data Interpolation, Dashboards, Experience Builder, ArcPy
  - **Adobe Suite** - Illustrator, Premiere Pro, Lightroom, Acrobat
  - **Remote Sensing** - PIX4D Mapper, Image Classification, Change Analysis, Digital terrain analysis, Land use/Land cover analysis
  - **Language** - Fluent in English, Filipino, and Bisaya
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## EDUCATION

**Augustana College, Rock Island, IL**

Graduation: May 2025

**Bachelor of Arts in Geography and Geology | Minor in GIS and Technology | Cum Laude**

GPA: 3.71/4.00

Dean's List (6 Terms)

Relevant Coursework: Advanced GIS, Digital Cartography and Design, Drone Mapping, Geomorphology and Paleoclimatology, Hydrogeology, Structural Geology, Mineralogy, Natural Resource Management, Urban Planning, Computer Science: Python

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## HONORS AND AWARDS

- **Distinction in Geology | Augustana College** - Departmental distinction conferred to students for excellence in scientific coursework and completion of a superior research project
  - **Geography Senior Research Award | Augustana College** - Award conferred to students for exceptional interdisciplinary research
  - **IINSPIRE-LSAMP Grant | National Science Foundation** - National Science Foundation grant for a research project amounting to \$3500
  - **Lucken Geology Scholarship | Augustana College** - Merit-based scholarship for geoscience majors amounting up to \$2000 annually
  - **Dean's Scholarship | Augustana College** - Awarded to entering students with an excellent academic record and good character amounting up to \$29,000
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## EXTRACURRICULARS

- **Rho Nu Delta Fraternity** - Collaborated with 60+ members to organize fundraising events for the Court Appointed Special Advocates for Children