

# ALLISON SCATES

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Subject Interests: Shallow/environmental geophysics, salt tectonics, sedimentary geology, depositional systems, coastal geoscience, process geomorphology, delta & channel systems, Quaternary geology, geophysics, planetary science, land loss, computational geology, soft-sediment deformation, igneous geology, precipitation minerals/carbonate geology.

## EDUCATION

### **Master of Science in Geology**

*University of Louisiana at Lafayette, GPA: 3.81/4.0*

Spring 2020

### **Bachelor of Science in Geology, Minor in Mathematics, Cum Laude**

*Centenary College of Louisiana, Cumulative GPA – 3.66/ 4.0, Major GPA – 4.0/4.0*

Spring 2017

## SCIENTIFIC/TECHNICAL KNOWLEDGE

<b>Geologic Field Methods</b>	Identification of fossils, rock samples, sedimentary units, sequence stratigraphy, and determining the extent of formations as well as photogeologic techniques.		
<b>IHS Kingdom Suite</b>	Structure, horizon, contour, and fault mapping, CHIRP seismic processing, seismic interpretation, and well log correlation.		
<b>AutoCAD 3D</b>	Structural modeling for class assignments designing a variety of structures with consideration for 3D printing.		
<b>ArcGIS</b>	Basic analysis of environmental data. General mapping of digital cartographic data, TBDEM/DEM processing, basin delineation, wetland, and watershed analysis. Preparation of maps for publication.		
<b>Geochemistry</b>	Collection and preparation of physical samples for specialized whole-rock and trace mineral analyses for elemental, structural, and geochronologic study using ICP-MS and SEM/EDS equipment. Mineralogical point-counting for end-member analysis from hand-made thin-sections including provenance location from ternary plots.		
<b>Well Log Correlation</b>	Correlation of geologic units logged through visual inspection of gamma-ray, electrical, bulk density, and spontaneous potential and with IHS Kingdom Suite.		
<b>CPT Log Analysis</b>	Geotechnical analysis of Quaternary stratigraphy and lithostratigraphy in Golden Meadow, LA including cross-plotting of measured variables for shear strength analysis and soil classification and correlation of cone penetrometer test logs.		
<b>Mathematics</b>	Calculus 1, 2 & 3, linear algebra, differential equations, and vector analysis. Cross-plotting and calculation of geologic phenomena supported by written interpretation of the resulting data and corresponding illustrations/figures.		
<b>Microsoft Office</b>	Proficient use of Excel, Word, PowerPoint, and Outlook to produce and prepare reports and maps for publication. Creation of quality figures and maps for inclusion in journal articles, professional reports, and presentations.		
<b>Scientific Presentation &amp; Literature Synthesis</b>	Ability to digest and present technical information research and figures in a variety of forms including PowerPoints, posters, abstracts, oral presentations, and for general audiences for conference and community participation.		
<b>Graduate Courses</b>	Advanced Well-Log Analysis Exploration Geophysics/AVO Basin & Petroleum Systems Environmental Geology	Clay Mineralogy Subsurface Mapping with IHS Kingdom Suite Intro to ArcMap Advanced Sedimentary Petrology	Geotectonics

## FIELD WORK

- French Alps Field Camp – *University La Salle* 2018
  - Projects learning about the structural geology and mineralogy of the French Alps by creating cross-sections of the geotectonic and sedimentary structures, identifying extent of formations, mineral identification, stratigraphy columns, and corresponding well-logs to qualitatively describe reservoir potential at presentation quality.
- CHIRP Seismic Acquisition & Processing – *UL Lafayette* 2019
  - Thesis project where compressed high-intensity radar pulse seismic was collected in Golden Meadow, LA. The field study design and sampling methods attempted to locate normal faults in Holocene strata and were processed and interpreted in IHS Kingdom to ensure data quality of CPT analysis and fault location predictions.

## RELEVANT EXPERIENCE

**Research Assistant**, University of Louisiana at Lafayette 05/2018 – 05/2020  
*Geomorphic and Shallow Subsurface Expression of Growth Faults in Mississippi River Delta Holocene Sediment; Golden Meadow, Louisiana*

- Thesis studying fault characteristics in the Golden Meadow Fault zone using shallow seismic acquisition and processing techniques to examine land subsidence through Centers of Excellence Research Grant Program and the Water Institute of the Gulf under the RESTORE Act. The goals of the project were to improve the characterization of geologic hazards of growth faults in the Gulf of Mexico marsh environment to facilitate the planning of multimillion-dollar restoration and flood protection projects. The project participated in helping the government make informed decisions about state geology. To finish this project, I had to collect my own scientific data with seismic instruments and geospatial data had to be collected, compiled, and analyzed from various online geodatabases. I had to integrate existing literature and available data to synthesize the findings of my research.

**Graduate Teaching Assistant**, University of Louisiana at Lafayette 08/2017 – 12/2018

## INDUSTRY WORKSHOPS

- 2023 Coastal Master Plan Technical Modeling Webinar – Coastal Protection & Restoration Authority 2020
- GIS Support for Hydrologic and Hydraulic Analysis – American Water Resources 2020
- Applied Paleontology for Exploration and Production Biostratigraphy – Paleo-Data Inc. 2017
- AVO/Attributes/Inversions – Willis School of Geoscience 2018

## PUBLICATIONS

Research Gate: [https://www.researchgate.net/profile/Allison\\_Scates](https://www.researchgate.net/profile/Allison_Scates)

SCATES, A., ZHANG, R. 2019, *Locating Faults in Louisiana Gulf Coast Quaternary Stratigraphy by Combination of Cone Penetrometer Tests with Borings and Chirp Seismic Data, Golden Meadow, LA*, Extended Abstract, GeoGulf Transactions.

VETTER, S. K., BIELER, D., SCATES, A. & Others, 2016, *Mitchell Dam Amphibolites: Geochemistry and Petrology of Core Hole Samples*, Senior Class Project, Centenary College of Louisiana.

- Geochemical analysis of custom core samples cut into thin-sections, ground into powder, and fused into glass beads for SEM/EDS whole rock analysis. Samples were also prepped for ICP-Mass Spectroscopy.

## LEADERSHIP & INVOLVEMENT

**NCAA Athlete**, Co-Captain, Women's Gymnastics - Centenary College of Louisiana 2013 – 2017

- Two-Time National Championship qualifier

### **Geological Student Memberships/Campus Affiliations**

- AAPG    • AWG    • Houston Geological Society    • Shreveport Geological Society
- SEG    • AEG    • Lafayette Geological Society    • EEGS

**Vice President**, Student-Athlete Advisory Committee (SAAC) - Centenary College of Louisiana 2015 – 2017

## PREVIOUS WORK EXPERIENCE

### **Women's Artistic Gymnastics Judge**

- National Association of Women's Gymnastics Judges, Levels 1 – 8. 08/2017 – Present

### **Gymnastics Team Coach**

- Acadiana Gymnastics Training Center 02/2018 – 05/2019

### **Human Resources Representative & Headguard**

- Six Flags Hurricane Harbor Splashtown 05/2012 – 08/2016

## HONORS & AWARDS

- **1<sup>st</sup> place Three Minute Thesis™ Competitor** – University of Louisiana at Lafayette 2020
- **Regional Competitor for UL Lafayette Three Minute Thesis™ Competition** – Council of Southern Graduate Schools 2020
- **GeoGulf Student Poster Presentation Honorable Mention** 2019
- **Estwing Manufacturing Co. Award** - Most outstanding graduating senior majoring in geology 2017
- **Austin R. Sartin Award** - Outstanding work in first year of upper-level geology courses. 2016
- **Poppy K. Moon Award** - Top Junior female in the natural science department. 2016
- **Scholastic All-American - USA Gymnastics, MIC, NACGC** 2015 – 2017

## ADDITIONAL SKILLS

- Public speaking
- Information/data management
- Interpersonal communication
- Independent judgment and collaborative work
- Technical literature compilation and synthesis
- Time and personnel management skills
- Telecommunication
- Willing to participate in public awareness and education activities