# Jim Dacite

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## EDUCATION

**M.S. Degree in Geology**
New Mexico State University, Las Cruces, NM. X.XX G.P.A. Expected December 2018

**B.S. Degree in Geology**
Humboldt State University, Arcata, CA. X.XX G.P.A. May 2016

**A.A. Degree**
West Valley Community College, Saratoga. May 2012

### MASTER'S THESIS

"Magmatism and Extension in the Prehistoric Trackways National Monument" master's thesis, expected completion December 2018, New Mexico State University.
Research includes: (1) detailed mapping of the Prehistoric Trackways National Monument; (2) Precise age determination of basalts through $^{40}Ar/^{39}Ar$ age dating in accordance with geochemical and petrographic interpretations; (3) Geochemical and isotopic investigation of pyroxenite xenoliths; (4) Zircon (U-Th)/He Thermochronology.

### UNDERGRADUATE SENIOR THESIS

"Comparison of Titanium in Quartz and a Fe-Ti Two-Oxide Geothermometer" senior thesis, completed Spring 2016, Humboldt State University.
Comparison of two forms of geothermometry, TitaniQ and Fe-Ti two-oxide geothermometer. Thesis research was conducted through use of Humboldt State University's Scanning Electron Microscope and Oregon State University's Electron Microprobe.

## ACADEMIC RESEARCH PROJECTS

"$^{87}Sr/^{86}Sr$ Ratios of Goat Mountain and Doña Ana Mountain Igneous Rocks in Las Cruces, New Mexico"
Project completed for Isotope Geochemistry Class, New Mexico State University, Fall 2017.

"Interpretation of Magma Ascent Path of Mt. Lassen's 1915 Eruption through Hornblende Decompression Rim Texture" model completed for Senior Seminar Class, Humboldt State University, Spring 2015.

"Study and Interpretation of Trace Fossils Found in the Carlotta Formation (middle to upper Pliocene) at Centerville Beach, Northern California. Project completed for Paleontology Class, Humboldt State University, Spring 2015.

"Study of Hornblende Reaction Rims in Regard to Magma Ascent Rate through the Conduit in Mt. Lassen's 1915 Eruption" project completed for SEM and Sedimentary Geology Class, Humboldt State University, Fall 2014.

"Tropospheric Ozone and its Effects on the Environment", project completed for Environmental Chemistry Class, Humboldt State University, Spring 2014.

**Publication**

Dacite, J., Browne, B., 2016, Pre-eruptive temperatures of a rutile-bearing rhyolite erupted from Long Canyon Dome, southern Sierra Nevada: GSA Cordilleran Section, Abstract #274497.

Dacite, J., Amato, M.J., 2018, Rift related magmatism of the Prehistoric Trackways National Monument: GSA Cordilleran Section, Abstract #314243

**Poster Presentation**

"2015 HSU Undergraduate Scientific Research Symposium Poster Presentation"
Selected by Geology department chair to present research concerning hornblende reaction rim in regard to magma ascent rate through the conduit of California's Mt. Lassen's 1915 eruption.

"2015 Cordilleran Section – 112th Annual Meeting"
Presented research regarding the pre-eruptive temperatures of the Long Canyon Dome, southern Sierra Nevada.

"2019 GSA Join Section Meeting Rocky Mountain Cordilleran"
Presented research concerning Cenozoic geology of the Prehistoric Trackways National Monument in Las Cruces, New Mexico.

## ACADEMIC EXTRACURRICULAR ACTIVITIES

**Geology Department Liaison**
Geology Department, New Mexico State University, Las Cruces, NM Sept. 2016 – Present
Organize outreach events to local junior high schools and high schools.

**Member in Geology Club**
Geology Department, Humboldt State University, Arcata, CA Sept. 2012 – May. 2016
Student-run organization for fundraising and peer-to-peer mentorship.

**Independent Chemistry Tutor**
Arcata CA. June 2013 – May. 2016
Tutoring science and non-science majors. Focus on helping students understand quantitative concepts of General Chemistry.

**Thin Section Laboratory**
Humboldt State University, Arcata CA. Jan. 2014 – May. 2016
Instruct students how to properly prepare thin sections for use with petrographic microscope in the HSU thin section lab.

**Directed Study: Readings in Advanced Petrology**
Humboldt State University, Arcata CA. Feb. 2014 - May 2016
In weekly magma readings, a journal regarding igneous petrology is chosen where a student leads a discussion regarding the subject.

**Bi-monthly Seminar Group: Tectonics, and Climate & Landscape Evolution**
Humboldt State University, Arcata CA. Jan. 2016 - May 2016
In the bi-monthly seminar reading group in tectonics and climate articles where assigned and students would lead discussions regarding the subject.

**Death Valley Field Course**
Geology Department, Humboldt State University, Arcata CA. March 12 - 20, 2015
Students apply to participate in a Spring break field course through HSU Geology which takes students to Death Valley National Park for an immersive field experience.

## LEADERSHIP EXPERIENCE

**Instructional Teacher Assistant, Instrumental Methods in Scanning Electron Microscopy (GEOL 482)**
Humboldt State University Geology Department Arcata, CA. Fall 2015
Instructed students how to competently operate the Humboldt State University Scanning Electron Microscope and conduct sample preparation.

**Instructional Teacher Assistant, Mineralogy (GEOL 310)**
New Mexico State University Geology Department, Las Cruces, NM Fall 2016 - Fall 2017
Taught students how to competently identify minerals in hand samples in accordance with understanding mineral chemistry and crystal symmetry.

**Instructional Teacher Assistant, Optical Mineralogy (GEOL 312)**
New Mexico State University Geology Department, Las Cruces, NM Spring 2017 – Spring 2018
Instructed students how to operate petrographic microscopes and identify different minerals in thin section.

**Instructional Teacher Assistant, Survey of Geology (GEOL 111)**
New Mexico State University Geology Department, Las Cruces, NM Fall 2017
Helped teach introductory geology classes and labs.

**Instructional Teacher Assistant, Field Camp (GEOL 495)**
New Mexico State University Geology Department, Las Cruces, NM Summer 2017
Worked with students so that they could become competent at field mapping, measuring stratigraphic sections, making cross sections, and interpreting different geological features over a three-week field course.

**Duke TIP Instructional Counselor, Paleontology Field Studies Summer Program**
Duke Talent Identification Program Summer 2018
Two-week field studies course at Ghost Ranch New Mexico, which focused on the ancient life of New Mexico. Helped students understand how to operate in the field, write lithological descriptions, take competent field notes, and interpret topographic/geologic maps.

**John Hopkins CTY Teacher Assistant, Paleontology Summer Program**
John Hopkins Center for Talented Youth Summer 2018
Assist the paleontology instructor as needed by designing field activities, leading group discussions, and lecturing on various fossils.

**New Mexico State Geological Sciences Summer Recruitment Team**
New Mexico State University Geology Department, Las Cruces, NM Summer 2018
Worked with faculty, staff, and graduate students in order to recruit undergraduate geology students. During this time, I presented at high schools, colleges, and helped design a local "Teen Science Café".

**Pertinent Coursework**

- Geomorphology (Fall 2012)
- Geospatial Concepts (Fall 2012)
- Mineralogy & Petrology (Fall 2013)
- Optical Mineralogy (Spring 2014)
- Field Method I (Spring 2014)
- Environmental Chemistry (Spring 2014)
- SEM (Fall 2014)
- Field Method II (Fall 2014)
- Paleontology (Spring 2015)
- Structural Geology (Spring 2015)
- Field Method III (Spring 2015)
- Summer Camp Field Method (Summer 2015)
- Advanced Field Method (Summer 2015)
- Finding Faults in Humboldt County (Fall 2015)
- Tectonics, Climate & Landscape Evolution, Seminar (Fall 2015)
- Senior Thesis (Spring 2015)
- Petroleum Geology (Fall 2016)
- Tectonics (Fall 2016)
- Isotope Geochemistry (Fall 2016)
- GIS for Geology (Spring 2016)
- Volcanology (Spring 2016)
- Analytical Geochemistry (Spring 2017)
- Tectonics and Sedimentary Basins (Fall 2017)
- Subduction Zone and Magmatism (Spring 2018)

## ANALYTICAL EQUIPMENT AND LAB PREPARATION

- FEI Quanta 250 SEM including EDS analysis through NSS Software
- Buehler Automet 250 Autopolisher
- Petrographic and Dissection Microscope
- Diamond Rock Saw
- Lapidary Wheel
- Thin Section Prep Saw/Polisher
- Cressington 208 Carbon Coater
- Sonic Bath
- Denton Vacuum Desk II Sputter Coater
- Clean Laboratory
- Chipmunk Jaw Crusher
- Frantz Magnetic Separator
- Disk Grinder
- Shatter box
- Column Chromotography
- XRF Sample Preparation (glass beads and pressed pellets)
- Heavy Liquids

## COMPUTER SOFTWARE PROFICIENCY

- Adobe Illustrator
- Photoshop
- ArcMap
- MS Word, Excel and Power Point
- NSS Software for EDS
- Steronet Pro Software
- ImageJ Java Based Software
- Mathematica
- GPS
- GIS

## FIELD EXPERIENCE AND EQUIPMENT

- Confidently and accurately map given field area
- Complete lithology description
- Accurate note taking
- Out-crop sketching
- Jacob Staff
- Garmin GPS
- Auto Level and Survey Level
- Brunton Compass
- Tape and Distance Transects
- Digging soil pits

## REFERENCES

John Quartz
Professor of Geology
New Mexico State University
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