

# MARGARIETE G. MALEND

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## EDUCATION

Colorado School of Mines, Golden, CO  
M.Sc. Geochemistry; GPA: 3.94

Summer 2019

Kutztown University of Pennsylvania, Kutztown, PA  
B.Sc. Geology; Minor: Chemistry

May 2017, *summa cum laude*

Overall GPA: 3.89

Geology GPA: 4.0

Chemistry GPA: 3.84

Total Credits: 194

Geology Credits: 50

Chemistry Credits: 25

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## RELEVANT COURSE WORK

◇ : Masters

• : Bachelors

\* : Taken in Spring 2019

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|---------------------------------|--|---------------------------------|
| ◇ Advanced Fluid Mechanics      | ◇ Princ. and App. of Surface Analysis Techniques |                                 |
| ◇ Aqueous Geochemistry          | ◇ Methods in Geochemistry                        |                                 |
| ◇ Introduction to Geochemistry  | ◇ Numerical Modeling of Geochemical Systems      |                                 |
| ◇ Fluid Mechanics for Hydrology | ◇ Advanced Transmission Electron Microscopy      |                                 |
| • Applied Geophysics*           | • Hydrogeology                                   | • Organic Chemistry I & II      |
| • General Geophysics            | • Field Geology                                  | • Analytical Chemistry          |
| • Advanced Physics Laboratory   | • Introduction to GIS Mineralogy                 | • General Chemistry I & II      |
| • Physics I & II                | • Petrology & Geochemistry                       | • Python Scientific Programming |
| • Differential Equations*       | • Economic Geology                               | • Computer Science I            |
| • Calculus I – III              | • Structural Geology                             |                                 |
|                                 | • Sedimentology & Stratigraphy                   |                                 |
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## SKILLS

### Microanalysis:

Transmission Electron Microscopy (FEI Talos F200X)  
Focused Ion Beam (FEI Helios Nanolab 600i)  
X-Ray Diffraction (Bruker D2 Phaser)  
Scanning Electron Microscope (SEM/EDS) (FEI Quanta 600i)  
Gas Chromatography Mass Spectrometry (Agilent 6890 GC/ 5973 detector)  
UV-Vis Spectrophotometer (Varian Cary 50)  
Nuclear Magnetic Resonance (Varian EM360A)

### Geophysics:

Seismic (Geometrics 24-channel Geode)  
Resistivity (DAS-1 64-electrode)  
EM Induction (Geophex GEM 2 Multifrequency EM System (EM34-3XL))  
Magnetometry (Geometric G-858 Cesium Vapor Magnetometer)  
GPR (GSSI SIR 4000 GPR, 200 MHz- 1.6 GHz antennae)  
Gravimetry (Worden Relative Gravimeter)

### Software:

MatLab R2018b  
Python  
C++  
Unix  
IDL  
ArcGIS  
Geochemist's Workbench  
Visual MINTEQ 3.1  
Supert 92  
Thermodynamics

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## PEER-REVIEWED JOURNAL PUBLICATIONS:

- Malenda, M.**, Jung, H., Squier, J., Gorman, B., & Navarre-Sitchler, A. (2018). Analysis of Anorthite Dissolution on the Submicrometer Scale. *Microscopy and Microanalysis*, 24(S1), 2058-2059. doi:10.1017/S1431927618010772
- Miller K., Simpson E. L., Sherrod L., Wizevich, M.C., **Malenda M. G.**, Morgano K., Richardson A., Livingston K., Bogner E., 2018, Gas bubble cavities in deltaic muds, Lake Powell delta, Glen Canyon National Recreation Area, Hite, Utah: *Marine and Petroleum Geology*. v. 92, p. 904-912. doi: 10.1016/j.marpetgeo.2018.03.032
- Simpson E. L., Fillmore D. L., Szajna M. J., Bogner E., **Malenda M. G.**, Livingston K. M., Hartline B., 2015, Enigmatic spheres from the Late Triassic Lockatong Formation, Newark basin of eastern Pennsylvania: Evidence for microbial activity in marginal- lacustrine strandline deposits: *Palaeobiodiversity and Palaeoenvironments*, v. 95. 521-529. doi: 10.1007/s12549-015-0207-y.
- Betts T. A., Heness, E. A., Semian Z. A., **Malenda M. G.**, Simpson E. L., Frieauf K. C., 2014, The unusual occurrence of an apicere sphere on the hypersaline lacustrine shoreline, Salton Sea, California: *Palaios*. v. 29, p. 553-559. doi: 10.2110/palo.2014.028

**CONFERENCE POSTER PRESENTATIONS**

<b><u>Authorship, Title: Conference and Location</u></b>	<b><u>Date</u></b>	<b><u>Record Number</u></b>
<b>Malenda M. G.</b> , Jung, H., Squier, J., Gorman, B., Navarre-Sitchler, A., <i>Analysis of Anorthite Dissolution on the Submicrometer Scale: <b>Microscopy &amp; Microanalysis, Baltimore, MD</b></i>	5-9 August, 2018	Poster No# 448
<b>Malenda M. G.</b> , Betts T. A., Simpsons E. L., Simpson W. S., Wizevich M. C., Miller K., Richardson A. M., <i>Microbial-generated Methane Outgassing from Lake Powell Sediments, Glen Canyon National Recreation Area, Utah: Geological Society of America (GSA) <b>Annual Meeting, Seattle, WA</b></i>	22-25 October, 2017	Ref. No. 298413
<b>Malenda, M. G.</b> , Pyrak-Nolte L. J., <i>Particle Swarm Transport across the Fracture-Matrix Interface: American Geophysical Union (AGU) <b>Fall Meeting, San Francisco, CA</b></i>	12-16 December, 2016	Paper No. H53D-1740
Miller K., Simpson E. L., Betts T. A., Sherrod L. A., Wizevich M. C., Morgano K., Richardson A., <b>Malenda M. G.</b> , Simpson W. S., Livingston K. M., Bogner E., <i>Voids: small-scale, gas-generated soft sediment deformation structures found in in deltaic muds of the Lake Powell delta, Glen Canyon National Recreation Area, Hite, Utah: <b>GSA Annual Meeting, Denver, CO</b></i>	25-28 September, 2016	Ref. No. 280538
<b>Malenda M. G.</b> , Frash L., Carey, J., <i>Uniaxial Compression Analysis and Microdeformation Characterization of Kevin Dome Anhydrite Caprock: <b>AGU Fall Meeting, San Francisco, CA</b></i>	14 -18 December, 2015	Paper No. H53H -1763
Livingston K. M., Bogner E., Simpson E. L., <b>Malenda M. G.</b> , Sherrod L. A., Betts T. A., Laub E., <i>The proposed evolution of shallow-sourced methane mud volcano geomorphology: Lake Powell, Hite, Utah: <b>GSA Annual Meeting, Baltimore, MD</b></i>	1-4 November, 2015	Paper No. 229-26
Miller K., Sherrod L. A., Bogner E., Higgins R., Livingston K., <b>Malenda M. G.</b> , Morgano K., Simpson E. L., Simpson W. S., Snyder E., Vales D., <i>Geometry of Small-scale Fluid/Gas Conduits: <b>GSA Annual Meeting, Baltimore, MD</b></i>	1-4 November, 2015	Paper No. 229- 25
<b>Malenda M. G.</b> , Friehauf K. C., Mathur R., <i>Re-Os isotopic dating of the Mesoproterozoic Haib porphyry copper deposit, southern Namibia: <b>GSA Annual Meeting, Vancouver, British Columbia, Canada</b></i>	19-23 October, 2014	Paper No. 293-5
Betts T. A., Heness, E. A., Semian Z. A., <b>Malenda M. G.</b> , Simpson E. L., Friehauf K. C., <i>The unusual occurrence of adipocere sphere on the hypersaline lacustrine shoreline, Salton Sea, California: <b>GSA Annual Meeting, Denver, CO</b></i>	27-30 October 2013	Paper No. 127-29

**RELATED WORK EXPERIENCE**

<b>Colorado School of Mines Geology and Geological Engineering Dept.</b>	<b>Fall 2017 - Present</b>
Research Assistant:	<b>Summer 2018</b>
Working in optical physics laboratory creating microfluidics analysis techniques for pore-scale chemical kinetics studies; conducting microanalyses of laser-mineral interactions	
Teaching Assistant:	<b>Spring 2018</b>
GEGN 432 “Geological Data Management Lab”: (MatLab and Statistics)	<b>Fall 2017, 2018</b>
GEGN 205 “Advanced Geology Lab”: (General Geology, Field Techniques)	<b>Fall 2017, 2018</b>
GEGN 101 “Earth and Environmental Systems Lab”: (Geomorphology, Field Techniques)	<b>Summer 2016</b>
<b>Purdue University Rock Physics Group</b>	
NSF funded Research Experience for Undergraduates (REU) in Purdue’s Department of Physics	
Conducted particle swarm transport experiments at the synthesized fracture-matrix interface	
<b>Los Alamos National Laboratory</b>	<b>Summer &amp; Winter 2015</b>
NSF funded Science Undergraduate Laboratory Internship (SULI) Student Employee	
Conducted experimental geomechanics and microfluidics regarding hydraulic fracturing and CO2 sequestration	

**HONORS AND AWARDS**

Microscopy and Microanalysis Place Poster Award (Session P06.P1)	Summer 2018
Sister-to-Sister 2018-2019 Scholarship (\$3500)	Spring 2018
Mann Foundation Student Research Grant (\$2100)	Spring 2018
Chambliss Student Academic Achievement Award (Gold Medal)	Spring 2017
Simpson Award to Graduating Geology/Marine Science Senior with Highest GPA	Spring 2017
Kutztown University Foundation Endowment Recipient for Conference Travel	Fall 2016
Dean's Star Scholar	Spring 2017, 2016
Kutztown University STEM Open House Speaker	Fall 2016
Pennsylvania State Employees Credit Union Scholarship (\$1250)	Spring 2015
Pennsylvania Committee of Professional Geologist 1 <sup>st</sup> Place Essay Winner (\$1000)	Spring 2015
Kutztown Undergraduate Research Grant (\$700, and \$900)	Fall 2013, Fall 2014
Neag Undergraduate Research Award Grant (\$1500)	Spring 2014
Dean's List	Ea. semester at Kutztown

**VOLUNTEER EXPERIENCE**

<b>Girls in STEM Club at Deer Creek Middle School</b>	Sp/Fll 2018
I help lecture and conduct experiments with the 6-8th grade girls at Deer Creek Middle School in Littleton, CO approximately four times a semester.	
<b>Geophysical Society of Kutztown (GSKU) Visitation to Local High Schools</b>	Spring 2017
I brought club members to local high-schools where we discussed geophysics careers with students.	
<b>YWCA TechGYRLS Program Speaker</b>	
I spoke with girls of Bethlehem's Fountain Hill Elementary school about geology, engineering, and the benefits of a higher education.	
<b>GSKU Girl Scout Merit Badge Visitation</b>	Fall 2016
I organized and led the first GSKU Girl Scout Merit Badge Visitation for a troop of local girl scouts to visit Kutztown University and learn about geology and geophysics. As the Girl Scouts of Eastern PA do not offer STEM badges, these girls earned their first STEM badge through this visitation.	
<b>GSKU Seminar Series</b>	
I was the primary contact for speakers from surrounding colleges, principal organizer of the lectures and luncheons with students, and I gave tours of the campus to the speakers.	