

# Catherine H. Ross

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## Education

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### University of Texas at Austin

**Jackson School of Geosciences & Institute for Geophysics** (Austin, TX) **2017-2021 (Expected)**

- **PhD Candidate**, advisors: Daniel Stockli & Sean Gulick, GPA: 3.97
- Dissertation topic: Peak ring geochronology and K-Pg boundary deposit provenance of the Chicxulub impact crater
- Teaching Assistant: GEO 428 Structural Geology

### McGill University (Montreal, Quebec, Canada)

- **MSc**, advisor: Christie Rowe, GPA: 3.7 **2016-2017**
- Thesis: The effects of seismic stress changes on off-fault deformation in Norumbega Fault System, southern Maine
- Teaching Assistant: EPSC 185 Natural Disasters, EPSC 203 Structural Geology
- **BSc**, Major: Earth and Planetary Science **2012-2016**
- Cumulative GPA: 3.5 Major GPA: 3.75 – Top of Geology Class
- Thesis: Multi-surface Earthquake Rupture Recorded in Pseudotachylyte Vein Geometries, Norumbega Shear Zone, southern Maine

## Publications

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- Rowe, C. D., Ross, C., Swanson, M. T., Pollock, S., Backeberg, N. R., Barshi, N. A., ... & Harrichhausen, N., 2018. Geometric complexity of earthquake rupture surfaces preserved in pseudotachylyte networks. *Journal of Geophysical Research: Solid Earth*.
- Rasmussen, C., Stockli, D.F., Ross, C.H., Pickersgill, A., Gulick, S.P., Schmieder, M., Christeson, G.L., Wittmann, A., Kring, D.A., Morgan, J.V. and IODP 364 Science Party, 2019. U-Pb memory behavior in Chicxulub's peak ring—Applying U-Pb depth profiling to shocked zircon. *Chemical Geology*.
- Jiang, H., Lee, C. T. A., Morgan, J. K., & Ross, C. H., 2015. Geochemistry and thermodynamics of an earthquake: A case study of pseudotachylites within mylonitic granitoid: *Earth and Planetary Science Letters*, v. 430, 235-248.

### In preparation:

- Ross, C., Rasmussen, C. Stockli, D., Gulick, S.P... & IODP 364 Science Party (2019). Geochronologic Constraints on Carboniferous Arc Magmatism in the Chicxulub Impact Crater. In prep for *EPSL*.

## Experiential Learning

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- Arctic Tectonics and Volcanism Field Course **6/2019-8/2019**
  - Studied the interplay of plate tectonics & volcanism at the University Center of Svalbard
  - Completed first order interpretation of geophysical, geochemical and geological data connected to magmatic provinces & created plate tectonic reconstructions
- Inversion Tectonics Fieldtrip to Atlas and Anti-Atlas Mountains **5/2019**
  - Focused on both extensional & collisional features
- Meteor Crater Field Camp **10/2018**
  - 1-week field camp mapping ejecta blanket – results presented at LPSC 2019
- Marine Geology & Geophysics Field Course **5/2018**
  - Geophysical acquisition, processing, & interpretation of the paleo-Trinity River
  - Provided leadership for my team of undergraduate students & guided team presentation to audience of peers & industry professionals
- Student Industry Field Trip (SIFT), University of Calgary **5/2016**
  - Premiere Canadian oil & gas student program run by the Canadian Society for Petroleum Geologists

- Participated in an extensive lecture series, core workshops, fieldtrip to Southern Canadian Rockies, & petroleum exploration game
- Lecture topics included well-logging/interpretation, carbonate/clastic reservoirs, geophysics, & operations

"From Sediments to Sequences" field course in Southern Spain **3/2016**  
 Two 2-week Field Schools (Sutton, QC & Arizona, California, Nevada) **Summer 2014, Summer 2015**  
 3 cumulative weeks of fieldwork Maine **2014-2016**

## Honors and Awards

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- Geological Society of America ExxonMobil Student Grant (\$5000) **2019**
- Geological Society of America Outstanding Mentions **2019**
- Reinhardt C Fellowship (\$1,757) **2016**
- Differential Fee Waiver-waives the international fee, merit-based (\$14,400) **2016**
- SIFT Larry Strong Financial Award - Most financially successful team in game emulating the energy industry (\$200) **2016**
- "Introduction to Research" GEOTOP Scholarship (\$2,000) **2015**
- Osisko Scholarship in Earth & Planetary Science (\$2000) **2015**
- SEG Canada Foundation (\$1000) **2015**
- Osisko Scholarship in Earth & Planetary Science (\$2000) **2014**

## Select Presentations

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- Oral Presentation at *Large Meteorite Impacts*
- Zircon U-Pb Geochronology and Trace Elements of the Chicxulub Impact Structure Basement **2019**
- Oral Presentation at *AGU Fall Meeting*
- Helium Diffusion Kinetics of Shocked Zircon from the Chicxulub Impact Crater **2018**
- Oral Presentation at *UTIG Brown Bag Seminar* **2018**
- Chicxulub Geochronology and K-Pg Deposits
- Oral Presentation at *Structural Geology and Tectonics Forum* at Sonoma State University **2016**
- Comparison Between Modeling & Field Observations of Off-Fault Strain of Pseudotachylyte Fault Veins

## Other Research Experience

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- Rice University Research Technician **Summer 2015**
- Tested a new, innovative way to quantify source rock maturity through palynomorphs analysis
  - Assisted in Dr. Richard Gordon's Global Tectonics research group **Summer 2015**
  - Assisted Dr. Cin-Ty Lee's PhD student, Dr. Hehe Jiang, with research of pseudotachylytes in the Santa Rosa mylonite zone using LA-ICPMS to analyze composition of pseudotachylyte **Summer 2014**
  - Assisted Dr. John Anderson's PhD student, Dr. Rebecca Minzoni, with research on the West Antarctic Peninsula Shelf & prepared & examined diatom slides **6/2011-12/2011, Summer 2012**

## Co-Curricular & Outreach

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- Geoscience Empowerment Network **2018-present**
- GeoFORCE Mentor - Mentor UT students once after completion of the K-12 outreach program **2017-present**
- Graduate Student Executive Committee, Philanthropy Chair **2018-2019**
- Geoscience Ambassador Program **2018-2019**
- North American Workshop on Laser Ablation Planning Committee (UTAustin) **5/2019**
- Mars Geochronology Workshop Convener (UTAustin) **3/2019**
- Graduate Student Geology Club Social Representative **2016-2017**
- Earth & Planetary Science Monteregian Society Vice President Internal **2014-2015**

**Skills:** LA-ICPMS, Solution HR-ICPMS, SEM & microprobe, LaTeX, GPlates, QGIS, Matlab, LabView, Petrel