

## Sean P. Regan

### Curriculum Vitae

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#### Education

- PhD** Geosciences 2016 University of Massachusetts Amherst  
**Thesis Title:** *Neoarchean arc magmatism, subsequent collisional orogenesis, and Paleoproterozoic disruption within the eastern Rae domain, western Churchill Province: implications for the growth and modification of lower continental crust.* Advisor: M.L. Williams
- MSc** Geosciences 2012 University of Massachusetts Amherst  
**Thesis Title:** *Evolution and timing of the deep crustal Cora Lake shear zone, western Canadian Shield.* Advisor: M.L. Williams
- BSc** Geology 2010 St. Lawrence University, *cum laude*  
**Thesis Title:** *Magmatic evolution beneath Laurentia during Shawinigan Orogenesis, southern Grenville Province.* Advisor: J.R. Chiarenzelli

#### Main Research Interests:

Igneous and Metamorphic Petrology, Mineralogy, Field Geology, EPMA, Tectonics, Ore Geology, Geochronology, Precambrian tectonics, Structural Geology, Precambrian Geology, Geochemistry, and Metasomatic processes.

#### Post-graduate & Professional Appointments

- Mapping Consultant** (July 2019- Aug 2019) Alaska Dept of Geologic and Geophysical Surveys
- Assistant Professor** (July 2018- present) University of Alaska-Fairbanks
- Invited Lecturer** (Aug 2017 – May 2018) SUNY Plattsburgh
- Research Geologist** (Feb 2016-June 2018) U.S. Geological Survey (Montpelier, VT)
- Career Pathway intern** (May 2014) U.S. Geological Survey **Supervisor:** G.J. Walsh

#### Courses Taught (\*Courses to be taught fall 2019)

##### Petrochronology Seminar (492/692 – Spring 2020 – 3 credits)

Petrochronology is a rapidly expanding discipline of geochronology aimed at developing analytical protocols and philosophies to better link petrologic and microtextural processes within a rock to geochronometers. This seminar is aimed at diving into the wide array of chronometers available to geoscientists, their utility and limitations, and how to treat each chronometer in a way that preserves the microstructural and petrologic significance. Each week we will dive into another chronometer, start with discussing instrumentation, sensitivity, etc., and then move to petrologic significance, and what kind of information we can expect to attain from each chronometer phase. Theoretical lessons will be supported through the reduction of real datasets each week.

##### Field Camp (Denali Section)

The Geology Field Camp in Alaska is a truly unique experience. The instructors are UAF faculty members that are among the most field-oriented earth scientists in the nation, and have research projects in many remote areas of Alaska. The field course takes advantage of the great variety of different geologic settings

offered by Alaska's complex geology. Students are given the opportunity to develop field mapping skills in regions with volcanic, metamorphic and igneous rocks, clastic and carbonate sedimentary rocks, and complex structural relations. Different members of the faculty will join the students in each area to share their knowledge and experience.

### **Advanced Petrology (Igneous) 621a (3 credits)\***

An in-depth look at isotopic techniques applied to petrologic systems. This course is focused on providing a theoretical and experiential basis of intrusive systems and their erupted equivalents. Divided into two sections, first students dive into the physical and thermodynamic properties of magma, the processes that govern their generation, and build on empirical relationships to quantify various aspects of magmatic systems. The second portion of the course is focused on more practical aspects of igneous petrology, and involves a detailed discussion of how we characterize and interpret igneous systems from observational and geochemical methods. These lessons involve an introduction to python (or computer language of choice), and the require students to develop their own geochem program. Towards the end of class, we hone in on the potential, limitations, and future trajectories of stable and radiogenic isotopic systems. Programs introduced: MELTS, IGPET, ipython

### **Advanced Petrology 621C (3 credits)**

An in-depth look at modern issues and techniques in igneous and metamorphic processes. Specifically designed to bridge the gap between igneous and metamorphic processes, and to link the two through a dynamic understanding of how igneous rocks form via metamorphism. The class will utilize cutting-edge petrologic techniques to discuss some of the classic issues in petrology, and toward the end dive into some structural aspects of this work. Programs introduced: Theriak-Domino, simultaneous equilibria, MELTS.

### **Igneous and Metamorphic Petrology 323 (4 credits)**

An in-depth study of igneous and metamorphic rocks including petrographic examination of characteristic rock textures and mineralogy. Discussion of each rock group includes their mineralogy, chemistry, and processes of formation as related to plate tectonics. Laboratory exercises emphasize identification of rock types in hand specimen, in thin section, and in the field.

### **Evolution of the Earth 102 (Spring 2018 – 4 credits)**

The study of geologic history of the Earth and its life. Included is an in depth discussion of the growth and modification of continental land masses, early-life, and modern tectonic processes.

### **Mineralogy 213/310 (4 credits):**

Introduction to the major concepts of mineralogy and optical mineralogy. Topics include mineral systems, hand specimen and optical identification of minerals, crystallography, crystal chemistry, x-ray diffraction and EPMA analysis. Laboratory exercises include identification of major minerals in hand specimen and with the petrographic and binocular microscopes

### **Senior Seminar 440 (Fall 2017 – 3 credits)**

Seminar discussion on selected topics or contemporary issues in geology. Emphasis on techniques for effective communication through reports, research papers, abstracts, scientific proposals and written and oral presentation for professional and lay audiences. Also introduces students to modern field and analytical approaches to Geological and environmental sciences.

## **External Research Funding**

### *Past Research Grants*

[3] **NSF-Tectonics EAR-1419843**: Building the Precambrian Laurentian Core of the North American craton: Resolving the Age and Tectonic Setting of the Snowbird Tectonic Zone of Canada, 6/14 – 6/17, Lead PI: M. Williams, [\$240,244] \*S.P. Regan took lead in proposal writing, research idea.

[2] **GSA Student Research Grant:** In-situ micro zircon geochronology of the Chipman dike swarm, Snowbird Tectonic Zone: implications for syn-tectonic magmatism across the entire western Churchill Province, 04/2015 to S.P. Regan [\$2,306]

[1] **GSA Student Research Grant:** Timing the development of the Cora Lake shear zone: A potential Archean deep crustal terrane boundary, 04/2011 to S.P. Regan [\$2,240]

#### Peer-Reviewed Publications (\*Student supervised by S. Regan)

- [22] **Regan, S.P.**, Benowitz, J.A., and Holland, M.E., *accepted pending minor revisions*, A plutonic brother from another magma mother: disproving the Eocene Foraker-McGonagall pluton piercing point and implications for long-term slip on the Denali Fault: submitted to *Terra Nova*
- [21] Williams, M.L., Grover, T., Jercinovic, M.J., **Regan, S.P.**, Pless, C., and Suarez, K., *in press*, Constraining the timing and character of extreme crustal melting in the Adirondack mountains using multiscale compositional mapping and in-situ geochronology: submitted to *American Mineralogist*
- [20] **Regan, S.P.**, Walsh, G., Williams, M.L., Chiarenzelli, J.R., Toft, M., and McAleer, R., 2019, Syn-collisional exhumation of hot middle crust in the Adirondack Mountains: implications for extensional orogenesis in the southern Grenville Province: *Geosphere*, v. 19., p. 1240-1260.
- [19] **Regan, S.P.**, Lupulescu, M., Jercinovic, M.J., Chiarenzelli, J.R., Williams, M.L., Singer, J., and Bailey, D. 2019, Age and origin of monazite symplectite, eastern Adirondack Mountains: implications for tracking fluid conditions: *Minerals special issue: Application of Electron Microprobe Methods in Trace Element Analysis and Geochronology*, M.J. Jercinovic (ed).
- [18] Chiarenzelli, J.R., Lupulescu, M., **Regan, S.P.**, and Singer, J., 2018, Age and origin of the Mesoproterozoic Cheever iron oxide-apatite deposit, eastern Adirondacks, NY: *Geosciences*, v. 8, 23 p.
- [17] Lupulescu, M.V., Chiarenzelli, J.R., Pecha, M.E., Singer, J.W., and **Regan, S.P.**, 2018, Columbite-Group minerals from New York pegmatites: insights from isotopic and geochemical analyses: *Geosciences*, v. 8, 15 p.
- [16] Peck, W.H., Selleck, B.W., **Regan, S.P.**, Howard, G.E., and Kozel, O.O., *in press*, In-situ dating of metamorphism in the Adirondack anorthosite: *American Mineralogist*, v. 103, p. 1523-1529.
- [15] Valentino, D., Chiarenzelli, J.R., and **Regan, S.P.**, 2018, Spatial and temporal links between Shawinigan accretionary orogenesis and massif anorthosite intrusion, southern Grenville Province, New York, U.S.A.: *Journal of Geodynamics*, v. 129, p. 80-97.
- [14] Orlandini, O.F.\*, Mahan, K.H., Williams, M.L., and **Regan, S.P.**, 2018, Evidence for deep crustal rupture preserved in a granulite-facies intraplate strike-slip shear zone, northern Saskatchewan, Canada: *GSA Bulletin*, v. 131, p. 403-425.
- [13] Dumond, G., Williams, M.L., and **Regan, S.**, 2018, The Athabasca granulite terrane and evidence for dynamic behavior of lower continental crust: *Annual Review of Earth and Planetary Sciences*, v. 46, p. 353-386.
- [12] **Regan, S.P.**, Williams, M.L., Chiarenzelli, J.R., Grohn, L.\*, Mahan, K.H., and Gallagher, M.\*, 2017b, Isotopic evidence for Neoproterozoic continuity across the Snowbird Tectonic zone, western Churchill Province, Canada: *Precambrian Research*, v. 300, p. 201-222.
- [11] Chiarenzelli, J.R., Selleck, B., Lupulescu, M., **Regan, S.P.**, Bickford, M.E., Valley, P., and McLelland, J., 2017, Lyon Mountain ferroan leucogranite suite: response to collision, thickened crust, and extension in the core of the Grenville Orogen: *GSA Bulletin*, DOI: <https://doi.org/10.1130/B31697.1>
- [10] **Regan, S.P.**, Williams, M.L., Mahan, K.H., Dumond, G., Jercinovic, M.J., and Orlandini, O.F.\*, 2017a, Neoproterozoic arc magmatism and subsequent collisional orogenesis along the eastern Rae domain: implications for the early growth of the western Churchill Province: *Precambrian Research*, v. 294, p. 151-174.
- [9] Williams, M.L., Mahan, K.H., Dumond, G., **Regan, S.P.**, and Holland, M.\*, 2014, Garnet-forming reactions in felsic orthogneiss: implications for the strengthening and densification of the lower continental crust, *Earth and Planetary Science Letters*, v. 405, p. 207-219.
- [8] Leslie, S.R., Mahan, K.H., **Regan, S.P.**, Williams, M.L., and Dumond, G., 2015, Contrasts in sillimanite deformation in felsic tectonites from anhydrous granulite- and hydrous amphibolite-facies shear zones, western Canadian shield, *Journal of Structural Geology*, v. 71, p. 112-124.

- [7] **Regan, S.P.**, Williams, M.L., Leslie, S., Mahan, K.H., Jercinovic, M.J., and Holland, M.E. \*, **2014**, (2014 Editor's Choice), The Cora Lake shear zone, Athabasca granulite terrane, an intraplate response to far-field orogenic processes during amalgamation of Laurentia, *Canadian Journal of Earth Science*, v. 51, p. 877-901, doi: 10.1139/cjes-2014-0015.
- [6] Brown, L.L., Webber, J., Williams, M.L., **Regan, S.**, and Seaman, S., 2014, Magnetism of the Lower Crust: observations from the Chipman Domain, Athabasca Granulite Terrain, northern Canada, *Tectonophysics*, v. 624-625, p. 66-74.
- [5] Peck, W.H., Selleck, B., Wong, M., Chiarenzelli, J.R., Harpp, K., Hollocher, K., Lackey, J.S., Catalano, J., **Regan, S.P.**, and Stocker, A., 2013, Orogenic to post-orogenic (1.20-1.15 Ga) magmatism in the Adirondack Lowlands and Frontenac terrane, southern Grenville Province, *Geosphere*, v. 9, p. 1637-1663.
- [4] Husinec, A., Harmon, C.A., **Regan, S.P.**, Mosher, D.A., Sweeney, R.J., and Read, J.F., 2012, Sequence development influenced by intermittent cooling events in Cretaceous Aptian Greenhouse, Adriatic Platform, Croatia, *AAPG Bulletin*, v. 96, p. 2215-2244.
- [3] **Regan, S.P.**, Chiarenzelli, J.R., McLelland, J., and Cousens, B., 2011, Evidence for an enriched asthenospheric source for coronitic metagabbros, Adirondack Highlands, *Geosphere*, v. 7, p. 694-709.
- [2] Chiarenzelli, J.R., **Regan, S.P.**, Peck, W.H., Selleck, B.W., Cousens, B.L., Baird, G.B., and Shradly, C.H., 2010, Shawinigan Magmatism in the Adirondack Lowlands as a result of closure of the Trans-Adirondack back-arc basin, *Geosphere*, v. 6, p. 900-916.
- [1] Chiarenzelli, J.R., Lupulescu, M., Thern, E., Cofflin, L., and **Regan, S.P.**, 2010, Enriched Grenvillian Lithospheric mantle as a consequence of long-lived subduction beneath Laurentia, *Geology*, v. 38, p. 151-154.

#### Published Geologic Maps (peer-reviewed)

- [2] **Regan, S.P.**, Toft, M.\*, Walsh, G.J., and Walton, M., *in prep*, Bedrock Geologic Map of the Paradox Lake quadrangle, Essex County, NY, U.S. Geologic Survey 1:24,000 scale map, 7.5'
- [1] **Regan, S.P.**, Geer, P.S.\*, Walsh, G.J., and Walton, M., *in prep*, Bedrock Geologic Map of the Eagle Lake quadrangle, Essex County, NY, U.S. Geological Survey 1:24,000 scale map, 7.5'

#### Field Trip Guides (\*student supervised by S. Regan, \*\*peer-reviewed)

- [10] **Regan, S.P.**, Guevara, V., Drauschak, T\*, and Chiarenzelli, J.R., 2018, Geology of the Copper-Kiln Landslide: a glimpse into the Marcy massif detachment zone: NEIGC-NYSGA joint field conference, Lake George, NY.
- [9] Williams, M.L., Grover, T., Pless, C., Suarez, K., and **Regan, S.P.**, 2018, Migmatites of the eastern Adirondack Mountains: New constraints on the timing, petrology, and tectonic setting of partial melting: NEIGC-NYSGA joint field conference, Lake George, NY.
- [8] Walsh, G.J. and **Regan, S.P.**, 2018, Geologic setting and Rare-Earth Element (REE) potential of historic Iron deposits in Southern Essex County, NY: NEIGC-NYSGA joint field conference, Lake George, NY.
- [7] Lupulescu, M., Chiarenzelli, J., **Regan, S.P.**, Bailey, D., and Singer, J., 2018, The Cheever and Mineville Iron Oxide-Apatite (IOA) Deposits: NEIGC-NYSGA joint field conference, Lake George, NY.
- [6] Chiarenzelli, J.R., and **Regan, S.P.**, 2015, Recent developments in the understanding of the Geology of the Adirondack Lowlands: St. Lawrence University Geology Alumni Conference, 22 p.
- [5] **\*\*Regan, S.P.**, Geer, P.\*, Walsh, G.J., Aleinokoff, J., Baird, G., Williams, M.L., Jercinovic, M.J., and Grover, T., 2015, Precambrian evolution of the Eagle Lake quadrangle, Essex County, NY, New York State Geological Association annual meeting field guide, 31 p.
- [4] Chiarenzelli, J.R., Lupulescu, M., **Regan, S.P.**, Valentino, D., and Reed, D., 2015, The Bennies Brook slide: A window into the core of the Marcy anorthosite, New York State Geological Association annual meeting field guide, 20 p.
- [3] Lupulescu, M.V., Chiarenzelli, J.R., Bailey, D.G., and **Regan, S.**, 2015, The magnetite-fluorapatite ores from the eastern Adirondacks, New York: Cheever Mine, New York State Geological Association annual meeting field guide, 20 p.
- [2] Grover, T.W., Williams, M.L., McLelland, J.M., **Regan, S.P.**, Baird, G.B., French, K.A.\*, and Pless, C.R.\*, 2015, Deciphering the geologic evolution of the eastern Adirondacks: new field, petrologic, and geochronologic data: New York State Geological Association annual meeting field trip guide, 30 p.

[1] **Regan, S.P.**, Peck, W.H., Selleck, B.W., Wong, M.S., and Chiarenzelli, J.R., 2014, Mesoproterozoic magmatism of the Adirondack Lowlands: the result of a failed back arc basin?, New York State Geological Association annual meeting field trip guide, 25 p.

### **Invited Academic Lectures (\*spring 2018)**

University of Alaska – Anchorage	<b>Detachment, ore mineralization, and progressive uplift of the Marcy anorthosite massif during the Grenville orogenic cycle, Adirondack Mountains, NY</b>
DGGS (AK)	<b>Detachment, ore mineralization, and progressive uplift of the Marcy anorthosite massif during the Grenville orogenic cycle, Adirondack Mountains, NY</b>
University of Vermont	<b>Detachment, ore mineralization, and progressive uplift of the Marcy anorthosite massif during the Grenville orogenic cycle, Adirondack Mountains, NY</b>
University of Alaska – Fairbanks	<b>The Snowbird Tectonic Zone Large Igneous Province: implications for an incipient rift origin</b>
University of Alaska – Fairbanks	<b>Detachment, ore mineralization, and progressive uplift of the Marcy anorthosite massif during the Grenville orogenic cycle, Adirondack Mountains, NY</b>
Texas Tech University 2018	<b>Detachment, ore mineralization, and progressive uplift of the Marcy anorthosite massif during the Grenville orogenic cycle, Adirondack Mountains, NY</b>
University of Maine 2018	<b>Destabilization of lower continental crust: insights from the Athabasca granulite terrane, northern Canada</b>
Gustavus Adolphus College 2017	<b>The Marcy massif detachment zone, Adirondack Mountains, NY</b>
St. Lawrence University 2015	<b>Fingerprinting tectonic processes into the Precambrian, insights from the western Churchill Province, Canada</b>
Castleton State University 2014	<b>How applicable are modern tectonic processes to deep time?</b>
Norwich University 2014	<b>Neoproterozoic arc construction, collisional orogenesis, and Paleoproterozoic segmentation of the lower continental crust</b>

### **Professional Outreach**

Alaska Geological Society (AGS) COSMOS CNSM recruitment	<b>Organized and chaired semi-annual conference Represented UAF Geoscience department Represented UAF Geosciences department at a CNSM event aimed at recruiting high-school students Taught geology lessons to local sixth graders</b>
Americorp VISTA	
Adirondack Mountain Rescue	<b>Backcountry skills/technical background/LiDAR processing utilized for Search and Rescue missions in the Adirondack Mountains</b>
General Geology of the Adirondack High Peaks region	<b>Lecture given to summit stewards for public education purposes</b>

Hammond Pond Wilderness Area Geology Summary

**Written for the DEC for Adirondack Park Management****Invited Conference Presentations** (\*Student supervised by S. Regan)

- Regan, S.P.**, Lupulescu, M.V., Jercinovic, M.J., Singer, J.W., Geer, P.S.\*, Chiarenzelli, J.R., Williams, M.L., and Walsh, G.J., 2016, Geochronology of IOA-type deposits: What are we dating?: GSA Annual Meeting, Denver, CO.
- Regan, S.P.**, Williams, M.L., Jercinovic, M.J., Mahan, K.H., Chiarenzelli, J.R., Dumond, G., Walsh, G.J., Geer, P.S.\*, Webber, J.R., and Orlandini, O.F.\*, 2015, Interaction between igneous, metamorphic, and structural processes from the lower to middle continental crust: insights from two isobaric terranes: GSA annual meeting 2015, Baltimore, MD

**Oral Presentations at National & International Conferences** (\*Student supervised by S. Regan)

[common abbreviations: GSA-Geological Society of America, AGU-American Geophysical Union, GAC-MAC-Geologic Association of Canada-Mineralogical Association of Canada, NEGSA – Northeast Geologic Society of America]

- Regan, S.P.**, Benowitz, J.A., and Holland, M.E., 2019, A plutonic brother from another magma mother: A petrologic investigation into the Foraker-McGonagall pluton piercing point along the Denali Fault, AK: GSA Annual Meeting, Phoenix, AZ.
- Regan, S.P.**, Toft, M.\*, Walsh, G., Williams, M.L., McAleer, R., Merschat, A., Grover, T., Suarez, K.\*, Baird, G., and Guevara, V., 2018, Detachment, ore mineralization, and progressive uplift of the Marcy massif during the Grenville orogenic cycle: NEGSA Annual Meeting, Burlington, VT.
- Regan, S.P.**, Grohn, L.\*, Williams, M.L., Chiarenzelli, J.R., Jercinovic, M.J., Cousens, B., Aspler, L.B., and Mahan, K.H., 2017, The Snowbird Tectonic Zone LIP: implications for an aborted rift origin: GSA Annual Meeting, Seattle, WA.
- Regan, S.P.**, Chiarenzelli, J.R., Williams, M.L., Aspler, L., Jercinovic, M.J., and Grohn, L.\*, 2017, Establishing direct links between basement structures and basin evolution with the low temperature fluid-mediated dissolution-precipitation of monazite and zircon: NEGSA annual meeting Pittsburgh, PA.
- Regan, S.P.**, Williams, M.L., Grohn, L.J.\*, Chiarenzelli, J.R., Mahan, K.H., Cousens, B., Aspler, L.B., and Jercinovic, M.J., 2016, Two transects across the Snowbird Tectonic Zone, western Churchill Province: exploring the continuity of the Rae-Hearne boundary and its role during the growth of Laurentia: GSA Annual Meeting, Denver, CO.
- Regan, S.P.**, Williams, M.L., Mahan, K.H., Jercinovic, M.J., and Chiarenzelli, J.R., 2016, Geology and geochronology across the Snowbird Tectonic Zone, western Churchill Province: implications for the Rae-Hearne boundary: GAC-MAC annual meeting, Whitehorse Yukon.
- Regan, S.P.**, Chiarenzelli, J.R., Walsh, G.J., Williams, M.L., Geer, P.S.\*, and Jercinovic, M.J., 2016, Partitioned strain, static and dynamic metamorphism, and fluid mobilization within the Marcy anorthosite massif, Adirondack Highlands: implications for deep construction and shallow emplacement of Massif-type anorthosite: NEGSA annual meeting, 2016, Albany NY.
- Regan, S.P.**, Geer, P.S.\*, Walsh, G.J., Williams, M.L., Baird, G.B., Grover, T.W., Valley, P.M., Pless, C.R.\*, and Jercinovic, M.J., 2015, Structural evolution of the eastern Adirondack Highlands, southern Grenville Province: GSA annual meeting 2015, Baltimore, MD.
- Regan, S.P.**, Williams, M.L., Mahan, K.H., Dumond, G., and Jercinovic, M.J., 2015, Neoproterozoic continental arc magmatism followed by collisional deformation along the eastern Rae domain, western Churchill Province: implications for fingerprinting tectonic processes: GAC MAC annual meeting, Montreal, Quebec
- Regan, S.P.**, Geer, P.\*, Walsh, G., Williams, M.L., Chiarenzelli, J.R., and Jercinovic, M.J., 2015, Margin parallel tectonism around the Marcy Massif, Adirondack Highlands: implications for the subsolidus emplacement of massif anorthosite: NEGSA annual meeting 2015, Bretton Woods NH.

- Regan, S.P.**, Williams, M.L., Mahan, K.H., Dumond, G., Jercinovic, M.J., Webber, J.R., and Orlandini, O.F.\*, 2014, Neoproterozoic arc magmatism and subsequent collisional deformation along the eastern Rae domain, western Churchill Province, Canada: GSA Annual meeting, Fall 2014, Vancouver, BC.
- Regan, S.P.**, Williams, M.L., Mahan, K.H., Dumond, G., Jercinovic, M.J., Webber, J.R. and Orlandini, O. F.\*, 2014, Progressive localization within the eastern Athabasca granulite terrane: a local record of far-field orogenic stresses: GAC-MAC 2014, New Brunswick.
- Regan, S.P.**, Williams, M.L., Mahan, K.H., Webber, J.R., Orlandini, O.F.\*, and Jercinovic, M.J., 2014, Integrating structural analysis, monazite geochronology, and forward petrologic modeling within the Athabasca granulite terrane (Snowbird Tectonic Zone): Implications for understanding the longevity of P-T loops within a lower crustal hot zone: NEGSA annual meeting, 2014, Lancaster PA.
- Regan, S.P.**, Williams, M.L., Mahan, K.H., Jercinovic, M.J., Orlandini, O.\*, Leslie, S., and Holland, M.E.\*, 2013, The Paleoproterozoic evolution of the Athabasca Granulite Terrane (Snowbird Tectonic Zone), western Churchill Province, Canada: deformation due to far-field orogenic processes: GSA annual meeting 2013, Denver CO.
- Regan, S.P.**, Williams, M.L., Mahan, K.H., Holland, M.E.\*, Leslie, S., Jercinovic, M.J., and Orlandini, F.\*, 2012: The Cora Lake Shear Zone: Strain Localization in an Ultramylonitic, Deep Crustal Shear Zone, Athabasca Granulite Terrain, Western Churchill Province, Canada, AGU annual meeting, San Francisco 2012.
- Regan, S.P.**, Williams, M.L., Mahan, K.H., Holland, M.E.\*, Leslie, S., and Jercinovic, M.J., 2012, Deciphering the age and significance of lower crustal high strain zones: A case study from the Cora Lake shear zone, Athabasca granulite terrane, Saskatchewan: GSA annual meeting 2012, Charlotte, NC.
- Regan, S.P.**, Williams, M.L., Holland, M.E.\*, Leslie, S., Mahan, K.H., Jercinovic, M.J., and Allaz, J., 2012, Interpreting the tectonic significance of crustal scale-high strain zones: insights from the Cora Lake shear zone, Western Churchill Province: NEGSA, Hartford CT, spring 2012.
- Regan, S.P.**, Chiarenzelli, J.R., McLelland, J.M., and Cousens, B., 2011, Coronitic metagabbros within the Adirondacks: a probe of post Shawinigan asthenospheric mantle and related insights into AMCG magmatism: GSA annual meeting, Minneapolis, MN, 2011.
- Regan, S.P.**, Chiarenzelli, J.R., McLelland, J., Cousens, B.L., and Lavack, C.E., 2010, Isotopic, Geochemical, and Petrographic Constraints on Coronitic Metagabbros of the Adirondack Highlands: 2010, NEGSA, Baltimore MD.

#### **National & International Conference Abstracts** (\*student supervised by S. Regan)

- Mistikawy, J., Williams, M.L., and **Regan, S.P.**, 2019, Timing of deformation and metamorphism of Grenvillian metapelite, Rock and Bear Ponds area, eastern Adirondack Mountains, Ticonderoga, NY: Geological Society of America Annual Meeting, Phoenix, AZ.
- Mistikawy, J., Williams, M.L., **Regan, S.P.**, 2019, Geology of the Rock Pond region, Pharaoh Lake wilderness area, Essex County, NY: Northeast GSA annual meeting, Portland ME.
- Chiarenzelli, J.R., **Regan, S.P.**, Valentino, D., and Toraman, E., 2019, The Shawinigan Orogen in the Adirondacks and linkage to AMCG plutonism: Northeast GSA annual meeting, Portland ME.
- Baird, G., **Regan, S.P.**, and Grover, T., 2018, Deciphering timing and kinematics of deformation in the eastern Adirondacks, New York State: When did the anorthosite-mangerite-charnockite-granite suite experience penetrative deformation?: GSA annual meeting, Indianapolis, IN
- Regan, S.P.**, Chiarenzelli, J.R., Aspler, L.A., Williams, M.L., Cousens, B.L., and Jercinovic, M.J., 2018, Continental margin processes in the Neoproterozoic: insights from the Angikuni Lake Region, Nunavut, Canada: AGU annual meeting, Washington D.C.,
- Chiarenzelli, J.R., Lupulescu, M., and **Regan, S.P.**, 2018, Age and origin of the Iron oxide-apatite (IOA) ores and associated rocks of the eastern Adirondacks, Grenville Orogen: GAC MAC annual meeting, Vancouver, BC, Canada
- McAleer, R.J., Carter, M., Spears, D.B., **Regan, S.P.**, and Burton, W.C., 2018, Geochronology of the elk Hill Complex and Lakeside fault zone, central Virginia Piedmont: SEGSA annual meeting, Knoxville, TN.

- McAleer, R.J., Jubb, A.M., Hackley, P.C., **Regan, S.P.**, and Walsh, G.J., 2018, Picking in the dark: fluorescence imaging of zircon on a petrographic scope, a practical grain picking tool: NEGSA annual meeting, Burlington, VT.
- Walsh, G.J., Aleinikoff, J.N., **Regan, S.P.**, Merschat, A.J., Shah, A.K., Taylor, R.D., Taylor, C.D., Geer, P.S.\*, and Toft, M.E.\*, 2018, Distribution, geologic setting, and rare-earth-element (REE) potential of historic Iron deposits in southern Essex County, New York: NEGSA annual meeting, Burlington, VT.
- Williams, M.L., Grover, T.W., Jercinovic, M.J., Pless, C.R.\*, **Regan, S.P.**, and Suarez, K.\*, 2018, Constraining the timing and character of extreme crustal melting in the Adirondack Mountains using multiscale compositional mapping and in-situ geochronology: NEGSA annual meeting, Burlington, VT.
- Suarez, K.\*, Williams, M.L., Grover, T., Valley, P., Walsh, G.J., and **Regan, S.P.**, 2018, An investigation into the correlation between Na-metasomatism and economic deposits in the Adirondack Mountains, NY: NEGSA annual meeting, Burlington, VT.
- Regan, S.P.**, Lupulescu, M., Jercinovic, M.J., Williams, M.L., and Chiarenzelli, J.R., Monazite-allanite-fluorapatite relationships from the Cheever Fe-oxide apatite (IOA) deposit, eastern Adirondack Mountains, NY: GSA Annual Meeting, Seattle, WA.
- Grover, T., Williams, M.L., **Regan, S.P.**, Pless, C.R.\*, and Jercinovic, M.J., 2017, Constraints from monazite geochemistry and LA-ICP-MS zircon analyses on the nature and timing of metamorphism in the Dresden station area, eastern Adirondacks: GSA Annual Meeting, Seattle, WA.
- Baird, G.B., Williams, M.L., and **Regan, S.P.**, 2017, Geochronology and chemistry of monazite in a migmatitic paragneiss in the eastern Adirondack Highlands adjacent to Ticonderoga, NY: GSA Annual Meeting, Seattle, WA.
- Williams, M.L., Grover, T., Jercinovic, M.J., Pless, C.\*, and **Regan, S.P.**, 2017, High-temperature metamorphism and Grenville orogenesis in the Adirondack Highlands, New York, USA: GAC MAC annual meeting, Kingston ON.
- Valentino, D., **Regan, S.P.**, Chiarenzelli, J.R., 2017, Piseco Lake gneisses record subduction-related magmatism and oblique collision prior to AMCG plutonism: NEGSA annual meeting, Pittsburgh, PA.
- Toft, M.E.\*, Walsh, G.J., Williams, M.L., and **Regan, S.P.**, 2017, Preliminary results of new bedrock mapping of the southeastern part of the Paradox Lake quadrangle, New York: NEGSA annual meeting, Pittsburgh, PA.
- Walsh, G.J., Valley, P.M., Merschat, A.J., McAleer, R.J., Ratcliffe, N.M., Thompson, P.J., Holm-Denoma, C., Roden-Tice, M., **Regan, S.P.**, and Aleinikoff, J.N., 2017, Tectonic evolution of the Connecticut Valley region in south-central Vermont and New Hampshire: NEGSA annual meeting, Pittsburgh, PA.
- Carter, M., Burton, B., McAleer, R., Regan, S., and Spears, D., 2017, Progress of USGS bedrock geologic mapping in the central Virginia seismic zone: SEGSA annual meeting, Richmond, VA.
- Regan, S.P.**, Carter, M., McAleer, R., and Spears, D., 2017, New SHRIMP U-Pb data from the central Virginia Piedmont: SEGSA annual meeting, Richmond, VA.
- Baird, G.B., Valley, P.M., and **Regan, S.P.**, 2016, Textural and U-Pb zircon SHRIMP-RG geochronology evidence in support of a c. 1060-1040 Ma magmatic crystallization age for the Skiff Mountain body of the Lyon Mountain granite, east-central Adirondack Highlands, Grenville Province: GSA Annual Meeting, Denver, CO.
- Shah, A.K., Walsh, G.J., Taylor, R.D., Taylor, C.D., Aleinikoff, J.N., Klein, A., **Regan, S.P.**, and Lupulescu, M., 2016, Geophysical, geochemical, and geological approaches to evaluating rare earth resources in the eastern Adirondacks, upstate New York: GSA Annual Meeting, Denver, CO.
- Orlandini, O.F.\*, Mahan, K.H., Mueller, K., Williams, M.L., and **Regan, S.P.**, 2016, Frictional melt below the brittle-ductile transition: two explanations from a shear zone in northern Saskatchewan: GSA annual meeting, Denver, CO.
- Grohn, L.J.\*, **Regan, S.P.**, Williams, M.L., De Santana Do Nascimento, L., Zhang, Shungquan, Cousens, B., Gallagher, M.\*, Aspler, L. B., and Chiarenzelli, J.R., 2016, Petrogenesis, age, and correlation of the Kazan dike swarm, Nunavut, Canada: Implications for an aborted rift origin for the Snowbird Tectonic Zone: GSA annual Meeting, Denver, CO.

- Chiarenzelli, J.R., Valentino, D., and **Regan, S.P.**, 2016, Spatial and temporal links between transpressional deformation, lithospheric disruption and architecture, and anorthosite intrusion: GAC MAC annual meeting, Whitehorse Yukon.
- Regan, S.P.**, Geer, P.S.\*, and Walsh, G.J., 2016, Mid crustal pluton construction in the eastern Adirondack Highlands, southern Grenville Province: A field analogue for the transport and coalescence of composite granite batholiths: NEGSA annual meeting, Albany NY. **Awarded Best Poster.**
- Geer, P.S.\*, **Regan, S.P.**, Walsh, G.J., Williams, M.L., Lupulescu, M.V., and Valley, P.M., 2016, Multiple stages of mineralization of the Hammondville magnetite-apatite deposits: NEGSA annual meeting, Albany NY.
- Williams, M.L., Grover, T.W., Pless, C.R.\*, **Regan, S.P.**, and Jercinovic, M.J., 2016, Recognition of tectonic terranes with distinct tectonic histories in the eastern Adirondack Highlands: NEGSA annual meeting, Albany NY.
- Pless, C.R.\*, Williams, M.L., Grover, T.W., **Regan, S.P.**, and French, K.\*, 2016, Timing of garnet growth in the eastern Adirondack Highlands: implications for the timing and intensity of orogenic pulses: NEGSA annual meeting, Albany NY.
- French, K.\*, Grover, T.W., Williams, M.L., Pless, C.R.\*, and **Regan, S.P.**, 2016, Utilizing monazite geochemistry and geochronology to constrain the timing and nature of deformation and metamorphism of migmatitic paragneisses from the eastern Adirondacks, NY: NEGSA annual meeting, Albany NY.
- Chiarenzelli, J.R., Valentino, D., and **Regan, S.P.**, 2016, Granitic gneisses of the Piseco Lake shear zone, Shawinigan orogeny-parallel deformation, and spatial and temporal links to the AMCG intrusive event in the Adirondack Highlands, New York: NEGSA annual meeting, Albany NY.
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- Chiarenzelli, J.R., McLelland, J.M., Selleck, B., Lupulescu, M.V., and **Regan, S.P.**, 2016, Age of the Lyon Mountain granite revisited, again: NEGSA annual meeting, Albany NY.
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- Lupulescu, M., Chiarenzelli, J.R., Pecha, M., **Regan, S.P.**, and Singer, J., 2016, Direct dating of pegmatite by LA-ICP-MS U/Pb columbite geochronology: NEGSA annual meeting, Albany NY.
- Lupulescu, M.V., Chiarenzelli, J.R., McLelland, J.M., and **Regan, S.P.**, 2016, LA-ICP-MS U/Pb zircon geochronology of the Grenville-age iron deposits of New York: NEGSA annual meeting, Albany NY.
- Valentino, D., Chiarenzelli, J., Orndorff, W.D., **Regan, S.P.**, Morabito, A.\*, Almeida, K.\*, Fasano, A.\*, Inclima, R.\*, and Crunch, C.D., 2016, Mesozoic Strata preserved in the Miami River graben, central Adirondacks, New York: NEGSA annual meeting, 2016, Albany, NY
- Van Lankvelt, A., Williams, M.L., Geer, P.S.\*, Pless, C.R.\*, **Regan, S.P.**, Webber, J.R., and Karabinos, P., 2015, A structural investigation of folded Bascom FM., US highway 279 in north Bennington, VT: NEGSA annual meeting 2015, Bretton Woods NH.
- Geer, P. S.\*, **Regan, S.P.**, Walsh, G. J., and Williams, M.L., 2015, Control on magnetite mineralization in the Lyon Mountain granite gneiss, Hammondville mining district, eastern Adirondack Highlands, New York: NEGSA annual meeting 2015, Bretton Woods NH.
- Marhsall, T.\*, Grover, T., Williams, M.L., and **Regan, S.P.**, 2015, Tectonic implications of deformed metagabbroic to gabbroic anorthosites, Shelving Rock quadrangle, eastern Adirondack Mountains, NY: NEGSA annual meeting 2015, Bretton Woods, NH.
- French, K.\*, Grover, T., Williams, M.L., and **Regan, S.P.**, 2015, Linking in-situ monazite geochronology, metamorphism, and deformation of migmatitic paragneiss, eastern Adirondack Mountains, NY: NEGSA Annual meeting 2015, Bretton Woods, NH.
- Pless, C.\*, Williams, M.L., Grover, T., **Regan, S.P.**, French, K.\*, and Pepin, C.\*, 2015, Timing and significance of deformation within the Shelving Rock Quadrangle, Eastern Adirondack Highlands, Southern Grenville Province: NEGSA annual meeting 2015, Bretton Woods, NH.

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- Orlandini, O.F.\*, Mahan, K.H., Mueller, K., Williams, M.L., and **Regan, S.P.**, 2014, Cora Lake shear zone pseudotachylytes: deep rupture of an intraplate strike-slip crustal fault and implications for seismology of earthquakes: Geological Society of America Annual meeting, Fall 2014, Vancouver, BC.
- Mahan, K.H., **Regan, S.P.**, Orlandini, O.F.\*, Williams, M.L., Dumond, G., and Leslie, S., 2014, Strain localization in deep continental crust: Examples from an exhumed section in the western Canadian Shield: Geological Society of America Annual meeting, Fall 2014, Vancouver, BC
- Mahan, K.H., **Regan, S.**, Orlandini, O.\*, and Schulte-Pelkum, V., 2014, Strain localization (and de-localization?) in deep continental crust: examples from an exhumed section and remote observations from still deep crust in North America: Structural Geology and Tectonics Forum, Spring 2014, invited talk.
- Chiarenzelli, J.R., Valentino, D., and **Regan, S.P.**, 2014, Origin of granitic protoliths of mylonites of the Piseco Lake shear zone: NEGSA annual meeting, 2014, Lancaster PA.
- Orlandini, O.F.\*, Mahan, K.H., **Regan, S.**, Williams, M.L., and Leite, A., 2013, Microstructure of deep crustal pseudotachylyte-bearing mylonites: GSA annual meeting 2013, Denver CO.
- Lagor, S.\*, Chiarenzelli, J.R., and **Regan, S.P.**, 2013, Implications of the transition of coronitic metagabbro to garnetiferous amphibolite in the Adirondack Highlands: GSA annual meeting 2013, Denver CO
- Webber, J.R., Brown, L.L., Williams, M.L., **Regan, S.P.**, Seaman, S.J., and Van Lankvelt, A., 2013, Implications for the igneous, metamorphic, and structural evolution of a deep-crustal mafic dike swarm based on the integration of petrological, structural, and geophysical data: Athabasca Granulite terrane, northern Saskatchewan: GSA annual meeting 2013, Denver CO.
- Webber, J.R., Brown, L.L., Williams, M.L., and **Regan, S.P.**, 2013, Spatial correlation of magnetic properties, deformation fabrics, and paragenesis: insights from the Athabasca granulite terrane, northern Saskatchewan: NEGSA, New Hampshire, 2013.
- Regan, S.P.**, Williams, M.L., Mahan, K.H., Jercinovic, M.J., and Allaz, J., 2013, Localization, extreme grain size reduction, and small equilibrium volumes in a hot lower crustal ultramylonite, Cora Lake shear zone, northern Saskatchewan: NEGSA, New Hampshire, 2013.
- Orlandini, F.O.\*, Mahan, K.H., Brown, L.L., **Regan, S.P.**, Williams, M.L., 2012, Structural setting and magnetic properties of pseudotachylyte in a deep crustal shear zone, western Canadian shield: AGU annual meeting, San Francisco, 2012.
- Brown, L.L., Williams, M.L., Seaman, S.J., **Regan, S.P.**, Webber, J., and Orlandini, O.F.\*, 2012, Magnetism of the Lower Crust: Observations from the Athabasca Granulite Terrain, Northern Canada: AGU annual Meeting, San Francisco, 2012.
- Williams, M.L., Jercinovic, M.J., **Regan, S.P.**, Holland, M.E.\*, Dumond, G, and Mahan, K.H., 2012, Garnet-Forming Reactions in Felsic Orthogneiss: Implications for Progressive Strengthening and Densification of the Lower Continental Crust: AGU annual meeting, San Francisco 2012.
- Husinec, A., Harmon, C.A., **Regan, S.P.**, Mosher, D., Sweeny, R.J., and Read, J.F., 2012, Aptian carbonate sequences of a collar phase within Cretaceous greenhouse, Adriatic Platform, Croatia: GSA Annual meeting 2012, Charlotte, NC.
- Regan, S.P.**, 2012, Timing lower crustal fabric development: Cora Lake shear zone, Western Churchill Province: Structural Geology and Tectonics Forum, Williamstown, MA, 2012.
- Holland, M.E.\*, Williams, M.L., **Regan, S.P.**, 2012, The Mary Reaction: timing deep crustal deformation and metamorphism with implications for strengthening and stabilization of flowing lower crust, NEGSA, Hartford CT, 2012.
- Regan, S.P.**, Leslie, S., Holland, M.E.\*, Williams, M.L., Mahan, K.H., and Jercinovic, M.J., 2011, The Cora Lake Shear Zone, an Exhumed Deep Crustal Lithotectonic Discontinuity, Western Churchill Province, Canada: AGU annual meeting, San Francisco, 2011.

- Leslie, S., Mahan, K., **Regan, S.**, and Williams, M. L., 2011, The role of temperature and fluid content in sillimanite deformation and recrystallization mechanisms in felsic granulites, Athabasca granulite terrane, western Canadian Shield: Annual Meeting of Geological Association of Canada.
- Leslie, S., Mahan, K., **Regan, S.**, and Williams, M. L., 2011, Heterogeneity within a deep crustal strike-slip shear zone with implications for lower crustal flow, Athabasca granulite terrane, western Canadian Shield: American Geophysical Union, Fall Meeting 2011, abstract #T23B-2392.
- Mahan, K.H., Leslie, S., Schulte-Pelkum, V., **Regan, S.**, and Williams, M.L., 2011, Seismic anisotropy patterns in deep continental crust: examples from an exhumed high Pressure terrane in the western Canadian Shield: GSA annual meeting, Minneapolis, MN, 2011.
- Williams, M.L., Mahan, K.H., Dumond, G., Jercinovic, M.J., **Regan, S.P.**, and Leslie, S., 2011, Linking metamorphism and deformation using in-situ monazite geochronology: interpretation of multistage tectonic histories: GSA annual meeting, Minneapolis, MN, 2011.
- Husinec, A., **Regan, S.P.**, Harman, C.A., Mosher, D.A., & Read, J.F., 2011, Sequence and Carbon Isotope Stratigraphy from the Aptian carbonate platform interior, southern Croatia, in AAPG Eastern Section Meeting, Abstracts Volume, Washington, DC, USA.
- Regan, S.P.**, Williams, M.L., Leslie, S., Mahan, K.H., and Jercinovic, M.J., 2011, The Cora Lake shear zone, Athabasca granulite terrane: An exhumed deep crustal terrane boundary, NEGSA, Pittsburgh PA, 2011.
- Mosher, D., **Regan, S.P.**, Husinec, A., and Read, J.F., 2010, Albian Cyclic Peritidal Facies of Adriatic Platform Interior in Southern Croatia: 2010, NEGSA, Baltimore MD
- Regan, S.P.**, Mosher, D., Husinec, A., and Read, J.F., 2010; Late Valanginian to Early Barremian Peritidal Facies of the Adriatic Platform, Croatia: Evidence of Subaerial Exposure: 2010, NEGSA, Baltimore MD.
- Donaldson, J.A., Aspler, L., Rainbird, R., Mosher, D., **Regan, S.**, Ibanez-Mejia, M., Franzi, D., and Chiarenzelli, J.R., 2010, Detrital zircons of Cambro-Ordovician sandstone units of eastern Ontario and northern New York: 2010, NEGSA, Baltimore MD.
- Caesar, W., Mosher, D., **Regan, S.**, Cousens, B., and Chiarenzelli, J., 2010, Nd model ages and geochemistry of Devonian and Ordovician shales of western and central New York: 2010, NEGSA, Baltimore MD
- Colony, J., Shradly, C., and **Regan, S.P.**, 2010, Nature of the Beaver Creek Fault, Adirondack Lowlands, New York: 2010, NEGSA, Baltimore MD.
- Regan, S.P.**, Mosher, D., Husinec, A., and Read, J.F., 2010, Late Valanginian to Early Barremian Peritidal Facies of the Adriatic Platform, Croatia: Evidence of Subaerial Exposure: 2010 AAPG Annual Convention & Exhibition.
- Regan, S.P.**, Mosher, D., Husinec, A., and Read, J.F., 2009, Peritidal and Subaerial Exposure Facies of Late Valanginian to Late Hauterivian Platform-Interior Carbonates, Mljet Island, Croatia: 2009 GSA Annual Convention, Abstracts with Program, v. 41, p. 144, Portland, OR, USA.
- Mosher, D., **Regan, S.P.**, Husinec, A., and Read, J.F., 2009; Albian Facies within a Cyclic Peritidal Platform-Interior Sequence, Adriatic Platform, Southern Croatia, in GSA Annual Convention: 2009 Abstracts with Program, v. 41, p. 144, Portland, OR, USA.
- Chiarenzelli, J.R., **Regan, S.P.**, and Lavack, C.E., 2009, The Trans -Adirondack Basin – Precursor to Shawinigan Orogeny, in GSA Annual Convention: 2009 Abstracts with Program, Vol. 41, No. 3, p. 688, Portland, OR, USA.
- Regan, S.P.**, Peck, W.H., Selleck, B.W., Cousens, B.L., and Chiarenzelli, J.R., 2009, Significance of the Antwerp-Rossie Granitoids, Adirondack Lowlands, Northern New York: 2009 NEGSA, Abstracts with Programs, Vol. 41, No. 3, p. 109, Portland, ME, USA.
- Reitz, K. J., Valentino, J.D., Valentino, D. W., Chiarenzelli, J.R., Cousens, B.L., and **Regan, S.P.**, 2009, Provenance age determination for siliciclastic rocks of the Pennsylvania Piedmont using Sm-Nd isotope geochronology: 2009 NEGSA Abstracts with Programs, Vol. 41, No. 3, p. 32, Portland, ME, USA.

### Graduate Committee involvement

Alec Wildland (Fall 2019- present) MSc: Petrochronology of autochthonous North America structurally beneath the Yukon-Tanana terrane, eastern AK: **CHAIR:** S.P. Regan

Jamshid Moshrefzadeh (Fall 2018- present) MSc: Understanding petrologic processes beneath Bogoslov Volcano, Aleutians: **CHAIR:** Pavel Izbekov  
 Zachary Mahaffey (Fall 2018-present) MSc: *Investigation of Cobalt mineralization at the Ruby Creek deposit;* University of Alaska, Fairbanks; **CHAIR:** Rainer Newberry  
 Veselina Yakimova (Fall 2018 – Fall 2019) MSc: *Border Ranges Fault;* University of Alaska, Fairbanks; **CHAIR:** Elisabeth Nadin

### Supervisory Role with Graduate and Undergraduate Research

Malia Walters (Fall 2018-present): U-Pb age from the Mt. Prindle pluton, Yukon-Tanana Terrane, AK. University of Alaska-Fairbanks  
 Peyton Presler (Fall 2018 – current): Petrographic comparison between Foraker and McGonagall plutons – assessing a commonly cited piercing point for the McKinley segment of the Denali Fault. University of Alaska-Fairbanks  
 Kevin Hooey (Fall 2017-Spring 2018) BSc: *In-situ monazite geochronology of the Snowbird Lake metasediments, Northwest Territories, Canada.* SUNY Plattsburgh  
 Juliana Flint (Fall 2017-Spring 2018) BSc: *Detrital zircon analysis of the Snowbird Lake metasediments, Northwest Territories, Canada.* SUNY Plattsburgh  
 Jessica Meier (Fall 2017-spring 2018) BSc: *Monazite geochronology of the Grizzle Ocean shear zone: Adirondack Mountains, NY.* SUNY Plattsburgh  
 Lisa Grohn (Spring 2015-2017) BSc: *Igneous and metamorphic history of the Kazan dike swarm, Angikuni Lake, Nunavut.* St. Lawrence University  
 Meghan Toft (Spring 2016-present) MSc: *Structure and petrology of Fe-oxide – apatite ore deposits along the margin of the Marcy Massif, Adirondack Highlands.* University of Massachusetts-Amherst  
 Phillip S. Geer (Fall 2013-present) MSc: *Multiple stages of mineralization within the Hammondville Fe-oxide-apatite deposit, eastern Adirondack Highlands.* University of Massachusetts-Amherst  
 Claire Pless (Fall 2014 – present) PhD: *Timing and conditions of migmatite formation in the eastern Adirondack Highlands.* University of Massachusetts-Amherst  
 Kim French (Fall 2013 – Spring 2016) BSc: *Nature and origin of monazite from the east Adirondack shear zone, Adirondack Highlands.* Castleton State University  
 Sam Nunnikhoven (Fall 2014 – Spring 2016) BSc: *Conditions of metamorphism within the Shelving Rock quadrangle.* Castleton State University  
 Paul Southard (Fall 2015 – Spring 2016) BSc: *Monazite geochronology in the eastern Adirondack Highlands.* University of Massachusetts-Amherst  
 Gavin Goelher (Fall 2015- Spring 2016) BSc: *Relative timing and conditions of metamorphism in the eastern Adirondack Highlands.* University of Massachusetts-Amherst.  
 Omero Felipe Orlandini (Summer 2012 – present) PhD: *Age and origin of pseudotachylite from the Cora Lake shear zone, Athabasca granulite terrane, northern SK.* CU Boulder  
 Rachel M. Filo (Spring 2012) BSc: *Metamorphic conditions of deformation in northern Wyoming.* University of Massachusetts-Amherst  
 Mark Holland (Spring 2011 – Spring 2012) BSc: *Timing and conditions of garnet growth within felsic orthogneisses, Athabasca granulite terrane, northern SK.* University of Massachusetts-Amherst  
 Sam Lagor (Spring 2012- Spring 2013) BSc: *The transition from anhydrous coronitic metagabbros to amphibolite gneisses, central Adirondack Highlands.* St. Lawrence University.

### Other Teaching Experience (teaching assistantships, \*guest lecturer)

Spring 2012	Introductory Geology Lab coordinator, UMass Amherst
Spring 2012	Introductory Geology Lab, UMass Amherst
Fall 2011	Introductory Geology Lab coordinator, UMass Amherst
Fall 2011	Field Mapping/Methods, UMass Amherst
Spring 2011	Introductory Geology Lab, UMass Amherst

Spring 2011	Structural Geology, UMass Amherst
Fall 2010	Mineralogy, UMass Amherst
Summer 2010	5-week Field Camp, SUNY Oswego
Spring 2010	Igneous and Metamorphic Petrology, St. Lawrence University
Spring 2010	Mineralogy, St. Lawrence University
Spring 2010	Oceanography, St. Lawrence University
Fall 2009	Sedimentology, St. Lawrence University
Fall 2008	Mineralogy, St. Lawrence University
Spring 2016 & 2014*	Tectonics (graduate course), UMass Amherst
Spring 2015*	Geochemistry, St. Lawrence University
Summer 2014*	Visiting Professor, Field Camp, SUNY Oswego
Fall 2013*	Structural Geology guest lecture, UMass Amherst
Fall 2012*	Igneous & Metamorphic Systems (graduate course), UMass Amherst

### Brief Descriptions of Field Courses Taught

Field Camp – 5 week program at State University of NY (3 credits)

Introduction to field methods including field mapping, stratigraphy, and cross sections. Four projects were supervised: 1) Mapping the unconformity at Alexandria Bay, northern NY, 2) Stratigraphic correlation of the Ordovician Theresa Formation in northern NY, 3) Mapping a complex shear zone, Carthage-Colten shear zone, Adirondack highlands/lowlands boundary, and 4) granulite facies orthogneisses, central Adirondack Highlands.

Field Camp – 10 day Denali Section at University of Alaska – Fairbanks

The rocks we will encounter are Cretaceous sedimentary rocks, Tertiary volcanic rocks and volcanic conglomerates, as well as cross-cutting felsic plutons and mafic dikes. Regional faulting and folding result in more complex structures.

### Professional Development Research Activities

Fall 2019	Field Trip participant: "Pluton Construction in the Sierra Nevada Viewed Using the StaboSpot Field Data System"
Spring 2017	MOCC Dept of Interior motorboat certification
Fall 2015	Student representative to the GSA council – Northeastern section
Fall 2011	Theriak-Domino (isochemical phase modeling) workshop at the University of Massachusetts, Amherst
Spring 2011	UCLA SIMS student workshop (NSF funded, week long hands-on training)

### Professional Service

Spring 2014 – present	reviewer of multiple articles for Precambrian Research
Winter 2017 – present	reviewer of multiple articles for Geosphere
Winter 2018 – present	reviewer of multiple articles for Tectonics
Winter 2019 – present	reviewer of multiple articles for Minerals
Winter 2019 – present	reviewer of multiple articles for Geosciences
Spring 2019 – present	Faculty Senate – University of Alaska, Fairbanks
Fall 2019 – present	Faculty Development, Assessment, and Improvement Committee
Fall 2019 – present	Graduate Academic and Advisory Committee

### Awards

NEGSA Best Poster Award (2016)	Granite pluton construction, eastern Adirondack Mountains, NY: a field analogue for mid-crustal pluton construction
Leo M. Hall Memorial Award (2015)	Timing ophiolite emplacement within the Adirondack Mountains (UMass)
Elinoir Freeman Memorial Award (2014)	Travel to UCLA SIMS facility (UMass)
Leo M. Hall Memorial Award (2013)	EBSD work on granulite facies ultramylonites (UMass)
Leo M. Hall Memorial Award (2012)	Support of field work in northern Canada (UMass)
Elinoir Freeman Award (2011)	In support of field work in northern Canada (UMass)
W.A. Tarr Award (2010)	Awarded to best geology student (St. Lawrence University)
Sigma Gamma Epsilon	Earth Science Honorary Society (spring 2008 – 2010)
SLU Research fellow (2009)	Sm-Nd isotopic characterization of the Hermon Gneiss, Adirondack Lowlands (St. Lawrence University)
Keck Geology Consortium (2008)	Geochemical and isotopic characterization of plutonic rocks in the Adirondack Lowlands (Colgate University)

### Instrument Knowledge/Use

TIMS	Whole rock Sm-Nd, Rb-Sr, garnet Sm-Nd
Ion exchange chromatography	Isolation of desired elements
LA-ICP-MS	Zircon U,Th,Pb, and Hf isotopes, major & trace element acquisition
XRF	Major and Trace element analysis
EPMA	WDS mapping, major and trace element analysis
EBSD	CPO and LPO analysis
SIMS	Micro-zircon geochronology
SEM	High resolution BSE/CL imaging
Magnetometer/gradiometer	Total field measurements, including lake surveys
Magnetic susceptibility meter	Magnetic characterization in the field

### Computer Programs

ESRI Arc Map	Map compilation, including DEM and python scripting
Theriak-Domino	Forward petrologic models
WinTWQ	Simultaneous P-T solutions
Thermocalc	Simultaneous P-T solutions
Igpet	Reduction of whole rock geochemical data
Datcon	Reduction of major and trace element EPMA data
Isoplot	Reduction and plotting of U-Th-Pb isotopic data
Adobe suite	Image analysis and drafting
Computer Languages	Python, R, and Matlab

### Scripting & Programs (written by Sean P. Regan)

MapUnitPoly.py (arcpy)	Calculates polygons from linework and colors according to map unit in ARC GIS
Chemrock.py (Python)	Reduction of whole rock geochemical data
Nd_plotter.py (Python)	Reduces and plots TIMS Sm-Nd isotopic data
Monareader.py (Python)	Plots major and trace element monazite
Monaplotter.py (Python)	Reduces chemical and geochronologic monazite data
hornP.py (Python)	Reduces and plots Al in hornblende data
Zirconreduc.py (Python)	Reduction and plotting of Zircon U-Th-Pb isotopic data

**Professional Society Memberships**

Geological Society of America	Mineralogical Association of Canada
American Geophysical Union	Mineralogical Society of America

**References**

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