Curriculum Vitae for

Summer Anise Caton

University of British Columbia

Dept. of Earth, Ocean, and Atmospheric Science

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Education

**Master of Science, Geology**, Expected 2021

University of British Columbia, Vancouver, BC

Advisor: Dr. Matthijs Smit; msmit@eoas.ubc.ca

**Bachelor of Science, Geosciences**, May 2017

Virginia Tech, Blacksburg, VA. Magna Cum Laude, GPA 3.71; In-Major GPA 3.9

*Senior Thesis:* “Role of Hillslope and Glacial Processes in Formation of High Elevation Boulder Fields in the South-Central Appalachian Mountains: An Investigation of the Devil’s Marbleyard, Virginia*”*

Advisor: Dr. James Spotila; spotila@vt.edu

**Bachelor of Science, Biological Sciences**, December 2015

Virgina Tech, Blacksburg, VA. Magna Cum Laude, GPA 3.66; In-Major GPA 3.78

Grants, Scholarships, and Awards

**University of British Columbia**

**Outstanding Teaching Assistant Award**, September 2020, University of British Columbia, Earth Ocean and Atmosphereic Sciences Department.

**International Doctoral Fellowship**, University of British Columbia, 2018-2023, *Amount:* $30,000 CAD stipend for four years and a minimum $18,000 funding package for the fifth year.

**Virginia Tech**

**Geosciences Outstanding Service Award**, Virginia Tech Geosciences Dept., 2016-2017

**Charles W. Thomas Scholarship**, Undergraduate Research Funding, *Amount*: $1000.00

**PRIME Lab Seed Grant,** “Testing for the presence of periglacial processes in rockfalls in the South-Central Appalachians: Devil’s Marbleyard, VA” October 2016

*Amount*:$7,200.00 **(**for Cosmogenic 10Be AMS analyses at PRIME Lab, Purdue)

**Geoscience Excellence Award,** Academic Year 2014-2015

**Geoscience Excellence Award,** Academic Year 2015-2016

**Honors College**, Virginia Tech, 2012-2017

Teaching Experience

**University of British Columbia**

**Teaching Assistant and Instructor: 222 Geological Time and Stratigraphy (3 credits),** Dr. Stuart Sutherland, Spring 2019, 2020, 2021.

*Lecturer*: In 2021 I virtually delivered two lectures on Geochronology and Magnetostratigraphy. The lectures were based on preexisting material, but changes were made to adapt the content to online delivery. The lectures were supported by learning goals, clicker questions and an in-class activity where students worked in teams of four in on-line break-out rooms to solve a magnetostratigraphic problem.

*Teaching Assistant*: As a TA my main duties are delivering and marking labs (8-10 total). Lab duties typically include preparing for labs (through weekly meetings with the instructor), printing of lab materials, delivering material (2 hours per week) and grading. Lab set up included extracting and returning lab materials and specimens to storage. This year, I was solely responsible for re-designing lab materials so they were conducive for a web-based lab experience due to the COVID-19 pandemic and transition to online learning. I designed PowerPoint presentations, delivered at the start of each lab that included a framing mini-lesson to explore lab materials and as a detailed walkthrough of the lab progression. This was done to help organize information, as well as create a document to assist international students who did not attend lab “in person”. I was also heavily involved in digitizing lecture materials and in-class activities, as well as building the canvas site for students to navigate. As the only TA, this year I am responsible for delivering and marking labs for three different sections (6 hours delivery + marking). In addition to lab duties, I am responsible for proof-reading, supervising, and assisting in grading the midterm, lab exam, and final exam. I answer student questions via email and in office hours, which are about double this year compared to previous years. I assist with active learning activities in lectures (1/week).

**Teaching Assistant and Instructor: 425 Paleontology** **(3 credits),** Dr. Stuart Sutherland, Fall 2018, 2019, 2020

*Lecturer*: In October 2018, 2019, and 2020 I gave a lecture on taxonomy and cladistics. I prepared this lecture material and a class activity. While lecture material was based on pre-existing material, significant changes to content were made to improve the student’s learning experience. Within the lecture, lesson learning goals were outlined and clicker questions and two class activities were run. In 2020 this lecture was given virtually and only one class activity was delivered. I additionally assisted in writing exam questions based on my lecture content.

*Teaching Assistant*: My main responsibility is delivering and marking 9-10 labs. Lab duties typically include preparing for labs (through weekly meetings with the instructor), printing of lab materials, delivering labs (3 hours per week) and grading labs. Setting up of labs each week included extracting and returning lab materials and specimens to storage. This year, I was solely responsible for re-designing lab materials so they were conducive for a web-based lab experience due to the COVID-19 pandemic and transition to online learning. I designed PowerPoints to be given at the start of each lab that included mini-lessons on the material, as well as a detailed walkthrough of each lab. As the only TA in 2020, I was responsible for delivering and marking labs for two different sections (6 hours delivery + marking). In addition to lab duties, I was responsible for proof-reading, supervising, and assisting in grading the final exam and a symposium project. I answered student questions via email and assisted with learning activities in lectures.

**Co-Facilitator: 515 (1 credit)**, Spring 2019

This is a graduate-run, seminar-style course that supplements the instructional skills students learned in EOSC 516. This course is designed to allow graduate students in EOAS the opportunity to develop their presentation skills and to host two speakers in a seminar/colloquium format. I co-facilitated this course with another graduate student. We were responsible for developing a syllabus with overall course learning objectives, organizing course details and scheduling, and facilitating each individual seminar session (i.e. time management/organization).

**EOSC 516: Teaching and Learning in Earth, Ocean, and Atmosphereic Sciences**, Fall 2018

This is an EOAS department-based graduate course that focuses on developing and enhancing the instructional skills of graduate teaching assistants. EOSC 516 is a six-week course that is both modeled after, and equivalent to, the Instructional Skills Workshop (ISW)—an internationally known instructor development program. The objectives of this course include learning to: effectively evaluate peers and provide constructive feedback; consider the needs and perspectives of diverse learners in striving towards an inclusive classroom environment; develop strategies for fostering student inquiry and independent learning in EOAS while meeting students’ needs for support; formulate learning objectives for TA-led activities in EOAS courses, engage in critical reflection on one’s own teaching practice; and design and implement mini lessons (three total) and lab assignments for EOAS courses using the frameworks provided in the course.

**Graduate Student – EOAS TA Training Program** (September 2020):

This 8-module online workshop ran for teaching assistants in EOAS to provide essential skills that will assist TAs in the variety of roles they may hold throughout their tenure in the department. The workshop models included: Awareness of possible roles and expectations as a TA in EOAS; lesson planning; developing skills for facilitating learning in classroom environments; equity, diversity, and inclusion in the classroom (module on power, privilege and bias); challenging classroom situations and strategies to resolve them; giving and receiving meaningful feedback; developing and using a marking rubric; teaching with online platforms (Zoom and Canvas).

**UBC Centre for Teaching, Learning, and Technology Workshops**:

* **Participant – Anti-Racist Teaching Series: Identity Matters: Connecting Power, Privilege and Bias to Anti-Racism Work** (March 1, 2020)
* **Participant – Supporting Inclusive Online Classrooms (July 24, 2020)**
* **Participant – TA'ing Large, Synchronous, Online Classes (July 22, 2020)**
* **Participant – Preventing & Responding to Sexualized Violence: Considerations for Digital Classrooms (July 20, 2020)**
* **Participant – Supporting Student Well-being in an Online Learning Environment (July 20, 2020)**
* **Participant – Designing High-Impact Learning Experiences** (January 17, 2019)
* **Participant – Making Space: Supporting Inclusive Classrooms** (January 16, 2019)
* **Participant – Leading Discussions** (January 16, 2019)
* **Participant – TA’ing a Community Engaged Learning Course: Exploring the Roles, Tension Points and Opportunities for Professional Development** (January 15, 2019)

Research Experience

**University of British Columbia**

**Archean Crustal Evolution – Advisor, Dr. Matthijs Smit**

**Graduate Researcher,** the large-scale geodynamic evolution of Earth throughout the Archean.

Purpose: Constraining the evolving composition and tectonics of Archean continental crust.

Techniques used: Scanning electron microscope (SEM), back-scatter electron (BSE), and cathodoluminescence (CL) imagery; petrographic microscope; in situ U-Pb dating using laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS); in situ Sr isotopes using LA multi-collector (MC)-ICP-MS; whole rock trace elements using high resolutuion (HR)-ICP-MS.

**Virginia Tech**

**Periglacial Geomorphology – Advisor, Dr. James Spotila;** January 2016 – May 2017

**Undergraduate Researcher**, The influence of Pleistocene climate change on the origin of deposits in the high ridges of the south-central Appalachians.

Purpose: Determining the role of hillslope and glacial processes in the formation of high elevation boulder fields in South-Central Appalachian mountains.

Techniques used: Cosmogenic radionuclide dating, structure-from-motion software, ArcGIS

**Metamorphic Petrology – Advisor Dr. Mark Caddick;** August 2016 – May 2017

**Undergraduate Researcher**, Thermal histories in a metamorphic contact areole through trace element analysis.

Purpose: Determining constraints on peak metamorphism, prograde and retrograde thermal histories, and the distribution and diffusion of Ti and trace elements in quartz.

Techniques used: Titanium-in-quartz geothermometry, cathodoluminescence

**Geoscience Education – Advisor Dr. Marc Michel;** August 2017 – Dec. 2016

**Undergraduate Researcher**, Develop new course content that used experimental learning and assessments to teach undergraduate students in mineralogy.

Purpose: Developing and implementing new course content, and analyzing, interpreting, and communicating results of assessment activities.

Techniques used: Assessments, student feedback

**Biogeochemistry – Advisor Dr. Jeb Barrett;** Jan. 2014 – Dec. 2014

**Undergraduate Research Assistant,** Long-term ecological project determining the biogeochemical effect *Rhododendron maximum* has on nutrient cycling in temperate soils.

Techniques used: Grinding and acidifying of Antarctic soils, analyzing microbial biomass of temperate soils, running a CHN Elemnetal Analyzer, autoclaving soils.

Academic Service

**Member, Unlearning Racism in Geoscience (URGE) Pod (2021)**; I, along with a group of EOAS students, staff, and faculty, are participating in URGE 2021, an “international journal-reading and policy-design curriculum that will guide us in unlearning racism and improving accessibility, justice, equity, diversity, and inclusion in our department. We are working toward the development and implementation of policies and programs aimed at addressing systemic racism and improving equity, diversity, and inclusion (EDI) in our department.” <https://urgeoscience.org/pods/eoas/>

In addition to participating the biweekly readings, interviews, and meetings to work on session deliverables, I co-facilitated Session 3: Racism and History and Session 5: Racism and Accessibility. The goal of Session 3 is to understand historical racism in the field of geosciences, as well as in our department. The deliverable for this session, compiled by myself and two others, is a statistical analysis of our program and its history and includes: initial demographic data on graduate students; demographic data of current faculty and staff (gender only); and an initiative to increase the diversity of our seminar/colloquium speakers. The goal of Session 5 is to (1) examine how racism has and continues to exclude minoritized individuals from Geoscience institutions and (2) design more holistic and proactively anti-racist admissions and hiring practices. The deliverable for this session is an analysis of, and proposed changes to, admissions and hiring policies.

2021 **Member, Search Committee for Discipline-Based Education Research Faculty Position;** Participated in a full search.

2020-2021 **Member**, **Equity Diversity and Inclusion Committee**; As the graduate representative on this committee, I act as a liaison between the graduate council graduate student body, and the EDI committee and department leadership. My duties are to promote change that addresses the EDI-related issues most important to graduate students. As a full member of the committee, I also work on various tasks and initiatives. “The Equity, Diversity, and Inclusion (EDI) Committee leads initiatives and provides resources and support to faculty, staff and students in the Department of Earth, Ocean and Atmospheric Sciences (EOAS) that foster inclusivity and promote equity and diversity. We recognize that Earth Sciences is the least diverse field in STEM. In order to address this, we know that systematic structural changes need to be built into department activities, including within classrooms and seminars (online or in-person), policies, events, hiring, and marketing initiatives, so that the ideas and demographics within our place of work are more reflective of the general population.” <https://www-dev.eoas.ubc.ca/about/equity-diversity-inclusion>

2020-2021 **Member, Graduate Student Council** (EDI committee representative); represent the graduate student body on issues of AJEDI; act as liason between the EDI committee and the graduate student council; pass issues of importance on EDI topics to the committee and department leadership.

2019-2020 **Seminar Committee Graduate Representative**; Collect nominations from graduate students; invite and host scientists to give colloquium talks to the department on their area of specialty; organize lunch with invited speaker and a group of graduate students, liason between the seminar committee and Graduate Council.

2016 **Undergraduate Representative to the Geoscience Faculty**; Spoke to faculty on behalf of the Geoscience undergraduates to convey our opinions regarding the two candidates for the position of department head during the search.

2016 **Member, Student Advisory Board to the Undergraduate Representative to the Board of Visitors**;Attended University Council meetings in place of Undergraduate Representative, Representative of Honors College and students in general.

2016 **Member, Search Committee for the new Dean of the College of Science**; Participant in a discussion/interview with each of the Dean finalists.

Field Experience

**University of British Columbia, Field work;** Faroe Islands, June 2019

**Idaho State University, Geology Field Camp**; June 2016 – July 2016

Five-week intensive field camp in central Idaho. Independent field mapping of sedimentary, igneous, and metamorphic rocks including Precambrian gneiss, Phanerozoic sedimentary rocks, Eocene zoned plutons, intermediate and bimodal volcanic rocks, Pleistocene-Holocene fluvial and glacial geomorphology along an active normal fault, and an active Holocene landslide. Completed detailed rock descriptions, unit descriptions, and structural analysis of faults and folds. Completed three exercises using field tablets and ArcGIS. Submitted numerous complete geologic maps and reports, including cross-sections and stereonet analysis, concerning geologic processes and histories.

Skills obtained: Geological Mapping (1:12,000 to 1:24,000), hand specimen rock and geologic map units description, stratigraphic section measurement, Brunton use, structural analysis of folds, faults, foliations, joints and collection of field data on field computer tablets.

Published Presentations

Broadwell, K., Caddick, M., **Caton S**. Constraining the High-Temperature Polymetamorphic History of the Martinsville Contact Aureole. GSA Southeastern Section Meeting, Virginia. Jan

**Caton, S**., Fame, M., Spotila, J. Role of Hillslope and Glacial Processes in Formation of High Elevation Boulder fields in the South-Central Appalachian Mountains: An Investigation of the Devil’s Marbleyard Deposit, Virginia (poster). Geological Soceity of America National Meeting, Seattle, WA. Oct., 2017.

**Caton, S**., Fame, M., Spotila, J. Investigation of Last Glacial Maximum Processes in South-Central Appalachians: Devil’s Marbleyard Boulder Field (poster). Geoscience Student Research Symposium, Blacksburg, VA. February, 2017.

**Caton, S**., Fame, M., Spotila, J. Testing for the presence of periglacial processes in South-Central Appalachians: Devil’s Marbleyard, VA (poster). Geoscience Student Research Symposium, Blacksburg, VA. February, 2016.

**Caton, S**., Fame, M., Spotila, J. Testing for the presence of periglacial processes in south-central Appalachians: Devil’s Marbleyard, VA (poster). Geoscience Student Research Symposium, Blacksburg, VA. February, 2016.

Leadership Experience

2017 **Honors College Student Council**, Virginia Tech Honors College

Each member holds a liaison position between the Honors College and one of the academic colleges. Responsibilities include liaising between the the council and Honors College faculty and staff.

2016 **Honors College Working Group,** Virginia Tech Honors College

The group worked on the development and creation of the program during the transition from an Honors Program to an Honors College.

**Honors Ambassadors**, University Honors, Virginia Tech, October 2013 to January 2017. *President*, December 2015 to January 2017. The Honors Ambassadors is a student-led organization created to facilitate engagement among Honors students and staff. Personal duties include organization and coordination of weekly “Wake up with Honors” breakfast for all honors students as well as the holding of information sessions for parents and students. As President, duties also include organizing and running bi-weekly meetings, attending meetings with Honors directors and staff to coordinate events and assist where needed, and organizing, delegating, and managing tasks involving marketing, advertisement, external events and university outreach.

Work Experience

**Social Media Marketing,** CoinCertainty, June 2018 to September 2018. Part-time.

**Junior Analyst,** Boyd Caton Group, September 2017 to September 2108. Part-time.

Support principles and company employees with research, document creation and editing, design work, and assistance on various subjects and tasks that is task/project dependent.

**Application Scorer,** Honors College, Virginia Tech, Spring 2016. 75 Hours

Scored applications for incoming Freshman and Transfer students to the Honors Program.