

DR. RER. NAT. ELEANOR J. BERRYMAN

An experimental mineralogist exploring the relationship between mineral-formation conditions, structure, composition, & properties

PERSONAL DETAILS

Email: berryman.eleanor@gmail.com

Citizenships: Britain, Canada, and New Zealand

Languages: English and conversational French and German

EDUCATIONAL BACKGROUND

- 2016 **Dr. rer. nat. with summa cum laude**
Technische Universität Berlin in conjunction with GeoForschungsZentrum Potsdam
Thesis title: *Tourmaline as a petrogenetic indicator – The crystal chemistry of tourmaline’s X site*
Research areas: experimental mineralogy, crystal chemistry, crystallography, spectroscopic methods, metamorphic petrology
Supervisors: **Prof. G. Franz, Prof. W. Heinrich, Dr. B. Wunder**
- 2016 International School on High Pressure Crystallography at the Ettore Majorana Foundation and Centre for Scientific Culture in Erice, Sicily
- 2016 Short course on “High-pressure experimental technique and applications to the Earth’s interior” at the Bayerisches Geoinstitute (BGI) in Bayreuth, Germany
- 2012 **Master of Science**
McGill University, Department of Earth and Planetary Sciences **(4.0/4.0 GPA)**
Research Areas: Experimental geochemistry, fluid-rock interaction, CO₂ sequestration, geo-engineering
Thesis title: *Carbonation of Steel Slag*
Supervisor: **Prof. A.E. Williams-Jones**
- 2012 Core training in Workplace Hazardous Materials Information System (W.H.M.I.S)
- 2011 Nordvulk Summer School on Geothermal Systems at Iceland University
- 2010 **Honours Bachelor of Science**
McGill University, Department of Earth and Planetary Sciences **(4.0/4.0 GPA)**
Honours Planetary Science
First Class Honours

Extensive knowledge of Microsoft Office, LaTeX, Adobe Illustrator, Adobe InDesign, IGOR Pro and working knowledge of Matlab, Scilab, Unitherm, HCH, and PerpleX (thermodynamic modeling software).

PROFESSIONAL EXPERIENCE

- 04/2017 – present **Postdoctoral Research Associate**
Princeton University, Department of Geosciences
Supervisor: Prof. Thomas Duffy
- 06/2012 – 09/2012 Research Assistant
McGill University, Department of Earth and Planetary Sciences
Supervisor: Prof. A.E. Williams-Jones
- 07/2009 – 09/2009 Intern
Institute for Study of the Earth's Interior, Misasa, Japan
Supervisors: Masami Kanzaki and Xue Xuang
Project focus: Crystal structure of high pressure AlPO_4
- 05/2008 – 09/2008 Research Assistant
McGill University, Department of Earth and Planetary Sciences
NSERC Undergraduate Student Research Award
Supervisor: Prof. D. Baker

PUBLICATIONS (PEER REVIEWED)

- E.J. Berryman**, M. Kutzschbach, R.B. Trumbull, A. Meixner, V. Van Hinsberg, S.A. Kasemann, and G. Franz (2017) Tourmaline as a petrogenetic indicator in the Pfitsch Formation, Western Tauern Window, Eastern Alps. *Lithos*, *accepted*.
- E.J. Berryman**, B. Wunder, D. Rhede, G. Schettler, G. Franz, and W. Heinrich (2016) P-T-X controls on Ca and Na distribution between Mg-Al tourmaline and fluid. *Contributions to Mineralogy and Petrology*, 171:31.
- E.J. Berryman**, B. Wunder, A. Ertl, M. Koch-Müller, D. Rhede, K. Scheidl, G. Giester, and W. Heinrich (2016) Influence of the X-site composition on tourmaline's crystal structure: investigation of synthetic K-dravite, dravite, oxy-uvite, and magnesio-foitite using SREF and Raman spectroscopy. *Physics and Chemistry of Minerals*, 43:83-102.
- E.J. Berryman**, B. Wunder, R. Wirth, D. Rhede, G. Schettler, G. Franz, and W. Heinrich (2015) An experimental study on K and Na incorporation in dravitic tourmaline and insight into the origin of diamondiferous tourmaline from the Kokchetav Massif, Kazakhstan. *Contributions to Mineralogy and Petrology*, 169:28.
- E. Berryman**, A.E. Williams-Jones, and A.A. Migdisov (2015) Steel slag carbonation in a flow-through system: the role of fluid-flux. *Journal of Environmental Sciences*, 27, 266-275.
- B. Wunder, **E. Berryman**, D. Rhede, M. Koch-Müller, B. Plessen, and W. Heinrich (2015) Natural and synthetic ammonium-bearing tourmaline. *American Mineralogist*, 100, 250-256.
- E. Berryman**, B. Wunder, and D. Rhede (2014) Synthesis of K-dominant tourmaline. *American Mineralogist*, 99, 539-542.

M. Kanzaki, X. Xue, S. Reibstein, **E. Berryman**, and S. Namgung (2011) Structures of two new high-pressure forms of AlPO₄ by X-ray powder diffraction and NMR spectroscopy. *Acta Crystallographica Section B: Structural Science*, B67, 30-40.

GRANTS AND SCHOLARSHIPS

- 2012 Natural Sciences and Engineering Research Council of Canada (NSERC), 3-year Postgraduate Scholarship (36 000 CAD)
- 2011 Fonds de Recherche du Québec (FQRNT), McGill University
- 2011 Natural Sciences and Engineering Research Council of Canada (NSERC), Alexander Graham Bell Canadian Graduate Scholarship (2 year)
- 2011 McGill University, Delta Epsilon Memorial Scholarship
- 2011 McGill University, Robert Wares Fellowship in Earth and Planetary Sciences
- 2009 McGill University, Logan Scholarship
- 2009 McGill University, Dr. Richard and Carolina J. Walls Best in the West Scholarship in Earth and Planetary Sciences
- 2008 NSERC Undergraduate Student Research Award (USRA)
- 2008 McGill University, R.P.D. Graham Scholarship
- 2007 McGill University, Sir Edward Beatty Entrance Scholarship
- 2007 McGill University, Reinhardt Entrance Scholarship

ACADEMIC HONOURS AND AWARDS

- 2016 Special Mention Ludovico Prize for most dynamic student at the International School of Crystallography in Erice, Sicily
- 2016 2nd place Poster Prize at the International School of Crystallography in Erice, Sicily
- 2015 **Bernd Rendel Prize** from the Deutsche Forschungsgemeinschaft (DFG)
- 2014 Paul Ramdohr Prize for best student presentation at the DMG Annual Meeting
- 2010 Associate Membership to Sigma Xi Honour Society, McGill University Chapter
- 2010 McGill University Dean's List
- 2010 **Logan Gold Medal for Excellence**, McGill University
- 2010 Geological Association of Canada Undergraduate Award
- 2008 Invitation to Golden Key Honour Society, McGill University Chapter, indicating placement among the top 10% of students at McGill University
- 2008 McGill University Dean's Honour List
- 2008 R.P.D. Graham Medal, McGill University
- 2008 Montreal Women's CIMM association award

TEACHING EXPERIENCE & TRAINING

- 09/2010 -05/2012 **Teaching Assistant**
McGill University, Department of Earth and Planetary Sciences
Elementary Earth Physics, EPSC 320
Structural Geology, EPSC 203
Earth and Planetary Inference, EPSC 340
Crystal Chemistry, EPSC 501

- 2011 Participant in McGill Skillsets Learning to Teach Professional Development Workshop
2010 Participant in T-Pulse Graduate Teaching Workshop

CONFERENCE PRESENTATIONS & PUBLISHED ABSTRACTS

E. Berryman, M. Kutzschbach, R.B. Trumbull, A. Meixner, and G. Franz (2016) Tourmaline's record of fluid history in the W Tauern Window. 2nd European Mineralogical Conference, Rimini, Italy.

E. Berryman, B. Wunder, A. Ertl, M. Koch-Müller, W. Heinrich, and G. Franz (2015) Linking crystal structure to composition in tourmaline: A multi-method investigation of synthetic dravite, maruyamaite, magnesio-foitite, and oxy-uvite. DGGV-DMG Joint Annual Meeting GeoBerlin, Berlin, Germany.

E.J. Berryman, M. Kutzschbach, R.B. Trumbull, A. Meixner, and G. Franz (2015) Tourmaline as a petrogenetic indicator in the W Tauern Window. Goldschmidt Abstracts. 2015:281.

B. Wunder, **E. Berryman**, M. Kutzschbach, M. Koch-Müller, and A. Ertl (2015) Multi-method characterization of synthetic tourmaline: rossmanite, magnesio-foitite, dravite, and maruyamaite. Goldschmidt Abstracts. 2015: 3466.

E.J. Berryman, B. Wunder, A. Ertl, M. Koch-Müller, W. Heinrich, and G. Franz (2015) Structural accommodation of K at dravitic tourmaline's X-site: insight from Raman spectroscopy and single crystal X-ray diffraction. AGU-GAC-MAC Joint Assembly Montreal, Canada.

E.J. Berryman, M. Kutzschbach, A. Loges, D. Schultze, A. Meixner, and G. Franz (2015) Tourmaline's record of fluid history in the Pfitscher Joch, Western Tauern Window. AGU-GAC-MAC Joint Assembly Montreal, Canada.

E. Berryman, B. Wunder, D. Rhede, R. Wirth, W. Heinrich, and G. Franz (2014) P-T-X controls on K and Na incorporation in dravitic tourmaline. DMG Annual Meeting, Jena, Germany.

A. Ertl, **E.J. Berryman**, B. Wunder, K. Scheidl, G. Giester, and G. Franz (2014) Al-Mg disorder and tetrahedrally coordinated B in synthetic K- and Mg-rich tourmaline. DMG Annual Meeting, Jena, Germany.

G. Franz, A. Loges, D. Schultze, **E. Berryman**, and M. Kutzschbach (2014) Protolith determination of a metasedimentary series in the western Tauern Window. DMG Annual Meeting, Jena, Germany.

E. Berryman, B. Wunder, R. Wirth, W. Heinrich, and G. Franz (2014) Pressure's control on K incorporation in tourmaline. IMA General Meeting, Johannesburg, South Africa.

B. Wunder, **E. Berryman**, D. Rhede, M. Koch-Müller, B. Plessen, and W. Heinrich (2014) NH₄-bearing tourmaline: experiments and natural occurrences. IMA General Meeting, Johannesburg, South Africa.

E. Berryman, B. Wunder, and G. Franz (2013) Experimental investigation of K incorporation into tourmaline at high temperature and pressure. Goldschmidt Conference Abstracts. 77: 695

E. Berryman, A.E. Williams-Jones, A.A. Migdisov, and S. van der Laan (2012) Controls on the Carbonation of Steel Slag I. Mineralogical Magazine: Goldschmidt Conference Abstracts. 75: 522.

E. Berryman, A.E. Williams-Jones, A.A. Migdisov, and S. van der Laan (2011) Carbonation of Steel Slag I. Mineralogical Magazine: Goldschmidt Conference Abstracts. 75: 522.

S.R. van der Laan, C. Liebske, H. Kobsesen, **E.J. Berryman**, A.E. Williams-Jones, and A.A. Migdisov (2011) Carbonation of Steel Slag II. Mineralogical Magazine: Goldschmidt Conference Abstracts. 75: 2063.

E.J. Berryman, A.E. Williams-Jones, A.A. Migdisov, and S. van der Laan (2011) Sequestration of CO₂ by carbonation of steel slag. GAC/AGC-MAC/AMC-SEG/SGA Joint Annual Meeting: University of Ottawa.

E. J. Berryman, A. E. Williams-Jones, A. A. Migdisov, S. van der Laan (2011) CO₂ Sequestration by Carbonation of Steel Slag. IODP/ICDP Workshop on Geological carbon capture and storage in mafic and ultramafic rocks: Sultan Qaboos University, Oman.

INVITED TALKS

- 10 Nov. 2016 Princeton University, New Jersey, USA
Invited by: Professor Thomas Duffy
Title: "Tourmaline: more than a garbage-can mineral"
- 18 Oct. 2016 Museum of Nature, Natural Heritage Campus, Gatineau, Canada
Invited by: Dr. Paula Piilonen and Dr. Scott Ercit
Title: "Minerals: Keys to unlocking Earth's history"
- 17 Oct. 2016 Museum of Nature, Natural Heritage Campus, Gatineau, Canada
Invited by: Dr. Paula Piilonen and Dr. Scott Ercit
Title: "Unlocking tourmaline's petrogenetic potential"
- 18 Nov. 2015 Department of Earth and Planetary Sciences, McGill University, Canada
Invited by: Prof. Anthony Williams-Jones
Title: "The crystal chemistry of tourmaline's X site"
- 14 Nov. 2014 Institut für Erd- und Umweltwissenschaften, Universität Potsdam, Germany
Invited by: Dr. Silvio Ferrero
Title: "P-T-X controls on K and Na incorporation in dravitic tourmaline: Insight into the formation environment of diamondiferous tourmaline from the Kokchetav Massif"
- 4 Apr. 2014 Institut für Mineralogie und Kristallographie, Universität Wien, Austria
Invited by: Dr. Andreas Ertl
Title: "The first synthetic K-rich tourmaline: synthesis experiments and the influence of pressure on K incorporation"

VOLUNTARY SERVICE

- 2012 – present Girl Guides of Canada adult member
2014 – 2015 MINT CyberMentor
2011 – 2013 McGill Student Life Ambassador

Eleanor Berryman, Ph.D.

2005 – 2012	Girl Guides of Canada Unit Leader
2010 – 2012	Treasurer of McGill Adams Post Graduate Student Society
2008 – 2009	VP Finance of McGill Monteregian Undergraduate Student Society
2007	Humanitarian service near Cusco, Peru Madventurer Development Travel

AFFILIATIONS

Deutsche Mineralogische Gesellschaft (DMG)	Sigma Xi Honour Society
Mineralogical Society of America (MSA)	Golden Key Honour Society
Geological Association of Canada (GAC)	European Association of Geochemistry (EAG)