

**BENJAMIN R. EDWARDS**

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**CURRENT ADDRESS & CONTACT INFORMATION**

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Department of Geology  
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**EDUCATION**

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**University of British Columbia** (Ph.D., Igneous Petrology & Volcanology, 1997)

*Field, kinetic, and thermodynamic studies of magmatic assimilation in the Northern Cordilleran Volcanic Province, northwestern British Columbia* (Prof. J.K. Russell, thesis advisor)

**University of Wyoming** (M.Sc., Igneous Petrology & Geochemistry, 1993)

*A Field, Geochemical and Isotopic Investigation of the Igneous Rocks in the Pole Mountain area of the Sherman Batholith, southern Laramie Mountains, Wyoming* (Prof. C.D. Frost, thesis advisor)

**Carleton College** (B.A., Geology with Concentration in Natural History, 1989)

*The Petrology of the Big Timber Igneous Complex, Crazy Mountains, Montana* (with C.D. Larson)

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**AWARDS & DISTINCTIONS**

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| <b>2001</b>      | Award for Leadership and Continuing Service at the Michigan Regional Science Olympiad Tournament, Grand Valley State University  |
| <b>1998-2001</b> | Merit salary increase awarded for outstanding teaching, research and service, Division of Science and Mathematics, Grand Valley State University (1998-99, 1999-2000, 2000-01) |
| <b>1998</b>      | Geological Association of Canada, Volcanology and Igneous Petrology Division, Leopold Gelinus Gold Medal (for best Canadian Ph.D. thesis in Volcanology and Igneous Petrology) |
| <b>1997-98</b>   | University of Calgary Postdoctoral Fellowship (declined)   |
| <b>1996-97</b>   | Thomas and Marguerite MacKay Memorial academic scholarship (UBC)   |
| <b>1994-96</b>   | University Graduate Fellowships (UBC)  |
| <b>1994-95</b>   | Graduate Student of the Year & Outstanding Teaching Assistant Award (EOS, UBC)   |
| <b>1992-93</b>   | Honorable Mention Graduate Student of the Year (EOS, UBC)  |
| <b>1991-92</b>   | J. David Love Field Geology Fellowship (UW), S.H. Knight Scholarship (UW)  |

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**MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS**

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International Association of Volcanology and Chemistry of Earth's Interior (IAVCEI)

IAVCEI Working Group on Volcano-Ice Interactions

Geological Association of Canada (Fellow)

American Geophysical Union

Geological Society of America

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**CURRENT EMPLOYMENT**


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**2008-2006**      **On-site Director, Norwich Science Program / Visiting Associate Professor, Department of Environmental Science, University of East Anglia**

**TEACHING:** co-taught 2A31 Volcanoes and Tectonics covering materials on magma generation and transport, volcanic processes; taught Science 258 History of Science for Norwich Science Program (NSP) (Fall); taught Science 300 Science and Society for NSP (Spring)

**RESEARCH:** supervising B.Sc. research for Chira Endress ('07) and Alex Lloyd ('07, Honors); committee member for Fionnualla Sheehan (Ph.D., UEA), co-supervisor for Jefferson Hungerford (Ph.D., U. Pitt.)

**ADMINISTRATION:** on-site director for Norwich Science Program (responsible for \$400,000 yearly program budget, paying student tuition and board, paying food stipends, banking correspondence, organizing student excursions)

**Present – 2006**      **Associate Professor, Dept. Geology, Dickinson College, Carlisle, PA**

**2006 - 2002**      **Assistant Professor, Dept. Geology, Dickinson College, Carlisle, PA**

**TEACHING:**

**First Year Seminar:** Controlling Nature? Seminar focused on human efforts to control natural processes, included an optional field trip over fall pause to the Vestmannayar Islands, Iceland

**Geol 103 Planet Earth:** introductory level course for science and non-science majors focusing on plate tectonics as an overarching paradigm for landscape development, with two fieldtrips;

**Geol 105: Geology of Natural Disasters:** introductory level course for science and non-science majors focusing on environmental hazards and their consequences;

**Geol 205 Mineralogy:** introduction to concepts in mineral chemistry, optical mineralogy, and techniques for mineral identification, including extended fieldtrips (e.g., NY, NJ, VT);

**Geol 206 Petrology:** an overview of important principles and processes involved in the formation of igneous and metamorphic rocks, including extended field trips (e.g., Cortlandt complex, NY; western NC);

**Geol 311 Geology of Disasters:** included a two week January term field trip to Montserrat to study the Geology and Sociology of the island related to the ongoing eruption of the Soufriere Hills volcano;

**Geol 500 Independent Study:** Spring 2003: Planet habitability (with Prof. M. Key and two physics majors); Fall 2004: Xenoliths from San Quintin volcanic field, Baja California (C. Carter);

**Geol 550 Independent Research:** S. Brown (Honors thesis, 2003: Korovin tephra), K. Wetherell (Honors thesis, 2005: West Tuya lava field); M. Nogier (Thesis, 2006: Hoodoo Mountain welded pyroclastic rocks), V. Tsang (Thesis, 2006: Craven Lake ultramafic xenoliths)

**INTRN 700-23:** student helped write and edit Carlisle Gazette from the Borough of Carlisle

**RESEARCH:** Topics include volcanic and petrologic processes in British Columbia, Canada, and Montserrat, West Indies; includes four Dickinson funded faculty-student research grants (Summers 2003-05) and one Dana Internship (Summer 2004); have applied for two National Science Foundation grants (1 Dec 2003 [not funded] and 1 June 2004 [funding starting 1 January 2006]); have supervised four senior research projects including three honors theses (S. Brown ['03], K. Wetherell ['05], M. Nogier ['06]); have co-authored one peer-reviewed journal article, twelve abstracts and three Geological Survey of Canada *Current Research* papers with Dickinson undergraduates

**SERVICE:** including to the Geology Department, the Science Division, the College, the Carlisle Community, and the broader scientific community;

**Student Fieldtrips:** local fieldtrips to Gettysburg battlefield, local limestone quarry and metavolcanic rocks; regional fieldtrips to New Jersey (mineral collecting near Franklin), New York (mineral collecting and petrology), and North Carolina (igneous and metamorphic petrology); national and international fieldtrips to Hawaii (2004), Montserrat (2005), Iceland (2005), London (4.5 weeks), Ely Cathedral and Wicken Fen (2006), Blakeney Point (2006)

**Geology Department:** Geology Club faculty supervisor, coordinated Earth Science Week programs in Fall 2003 and 2004 and Earth Birthday Celebration in Fall 2004, responsible for Scanning Electron Microscope and Petrography labs and rock and mineral collections, writing letters of recommendation for students for off-campus programs, internships, and graduate schools, occasionally acting chair, committee member for hiring 5 new/visiting faculty, co-organizer for Fall 2005 Geology seminar series

**Science Division:** untenured member of Science Executive Committee (2003-2005), co-organizer for Spring 2005 Science Student Symposium and Dinner, member of search committee for Dean of Students (Fall 2005) and for Director of Institutional Technology (2005), co-organizer of first Junior Science faculty retreat (Feb 2006) with K. Browne (Physics)

**Dickinson College:** Dickinson College Judicial Review board (2003-06), On-campus coordinator for Dickinson –University of East Anglia Science Program including responsibilities for recruiting, bringing UEA faculty to campus, writing letters of support for students applying to UEA, helping to head initiative to increase use of Geographic Information Systems on Dickinson campus, co-leader with D. Schubert (Sociology) for January term interdisciplinary sociology/geology of disasters class field trip to Montserrat, facilitated visit of Sir Howard and Lady Eudora Fergus to campus (April 2005)

**Carlisle Community:** outreach via examining rock and mineral specimens for local residents, judging at local science fairs, doing outreach in local schools including presentations on Mexico and volcanoes and helping teach 3<sup>rd</sup> grade students at Mooreland Elementary School basic MS Powerpoint skills, presentations to local community groups, coaching youth soccer at the YMCA

**Scientific Community:** participant in numerous national and international scientific meetings, reviewing papers for scientific journals (*Bulletin of Volcanology*, *Geochemica Cosmochemica Acta*, *Journal of Geoscience Education*, *Canadian Journal of Earth Science*, *Journal of the Geological Society of London*, *Earth Science Reviews*, *Rocky Mountain Geology*); lead author of application submitted to the executive committee of the International Association of Volcanology and Chemistry of Earth's Interior to form a new IAVCEI subcommission on Volcano-Ice Interaction; co-organizer of symposium at 2003 Geological Association of Canada National Meeting in Vancouver, co-editor for special issue of scientific journal *Lithos* (2006); co-organizer for 2005 Fall American Geophysical

Union meeting on Glaciovolcanism; co-organizer for 2007 Volcano-Ice interactions conference to be held in Vancouver, BC (19-22 June)

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**OTHER WORK EXPERIENCE**


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- 2002-1998**      **Assistant Professor, Department of Geology, Grand Valley State University**  
**Teaching:** Taught a variety of courses including: **Exploring the Earth, Environmental Geology** (for geology majors and non-majors), **Rocks and Minerals** (for earth science majors), **Petrology, Field Methods, Introduction to Geochemistry, Optical Mineralogy** section of Mineralogy, **Global Tectonics, Senior Seminar** (for geology/earth science majors); iii) **Rocks and Minerals** (for earth science majors), **Natural History of Hawaii** (classroom lectures and a 9 day fieldtrip to Hawaii with 24 students: co-taught with Dr. S. Mattox). Several courses included local fieldtrips and/or extended trips to: St. Francis Mountains, MO; Marquette and Houghton, MI; Blue Ridge province, Ashville, NC.
- Research:** Focused on volcanic, glacial and tectonic processes in northwestern Canadian Cordillera and included supervision of four undergraduate research projects funded by the Michigan Space Grant Consortium. Results of student projects were reported at local (MSGC Fall Conferences), regional (North Central GSA), and international (AGU, Geological Association of Canada) conferences and included one published government report.
- Service:** Served for three years on the GVSU General Education Subcommittee, participated in interviewing and selecting 3 tenure track faculty positions, was an event supervisor for regional Science Olympiad for four years, and periodically give presentations on rocks, volcanoes and geology to students at Grand Rapids area elementary schools.
- 2000**      **Contract Volcanologist, Univ. North Dakota**  
 Developed new web pages for Volcano World on Canadian volcanoes and selected volcanoes from Iceland, updated pages for other Icelandic volcanoes
- 1998-97**      **Physical Scientist, Pacific Division, Geological Survey of Canada**  
 Coordinated sample analysis program for Multinational Andean Project (MAP) and initiated sample standard program, developed volcano hazard information for Canadian volcanoes
- 1998-97**      **Postdoctoral Research Fellow, Igneous Petrology Laboratory, UBC**  
 Conducted research on lower crustal xenoliths and on Cordilleran volcanism, presented lectures in *Igneous Petrology* and *Physical and Chemical Volcanology*
- 1997-92**      **Research & Teaching Assistant, Department of Earth & Ocean Sciences, UBC**  
 Conducted field/laboratory research on Cordilleran volcanism and magmatic assimilation, co-supervised undergraduate research/lab assistants, teaching assistant for *Intro. to Geology, Petrology for non-majors, Igneous Petrology, Metamorphic Petrology, Field School*
- 1992-91**      **Instructor/Teaching Assistant, Dept. of Geo. & Geophy, Univ. Wyo, Laramie, WY**  
 Taught *Physical Geology* and was a teaching assistant for *Introduction to Geochemistry*
- 1991-90**      **Research Assistant, Geological Survey of Wyoming, Laramie, WY**  
 Collected and catalogued reports on mineral deposits and wrote reports on potential mineral resources in Wyoming
- 1990**      **Instructor, Science Division, Laramie County Community College, Cheyenne, WY**  
 Taught two sections of *Physical Geology* lecture and lab

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**SUPERVISED/CO-SUPERVISED STUDENT RESEARCH PROJECTS**


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- 2006-09** **Fionnuala Sheehan** (Ph.D. student, University of East Anglia): Petrological insights into pre- and syn-eruptive degassing at Ambrym volcano, Vanuatu.
- Jefferson Hungerford** (Ph.D. student, University of Pittsburgh): Constraints on paleo-ice conditions at 1 Ma, Mount Edziza volcanic complex, BC [partly supported by NSF EAR-0439707]
- 2006-08** **Kristen LaMoreaux** (MSc. student, University of Pittsburgh): Controls on jointing and thickness of trachytic lava flows, Mount Edziza volcanic complex, BC [partly supported by NSF EAR-0439707]
- 2006-07** **Chira Endress** (Dickinson College): Interpretation of glacial and glaciofluvial deposits associated with 1 Ma glaciovolcanism of the Ice Peak Formation, Mount Edziza volcanic complex, British Columbia, Canada. B.S. thesis, Department of Geology, Dickinson College, 222p including 3 appendices. [supported by NSF EAR-0439707]
- 2006-07** **Alex Lloyd** (Dickinson College, B.Sc. Honors thesis): Plagioclase growth rates in pillow basalts: a study in thermal modelling and crystal size distribution. [Prof. B. Marsh, external reader], Department of Geology, Dickinson College, 54p. [supported by NSF EAR-0439707]
- 2005-06** **Matt Nogier** (Dickinson College, B.Sc. Honors thesis): Origin of the Pointer Ridge pyroclastic deposit, Hoodoo Mountain, BC [supported by DC Faculty-Student Research Grant]
- Veronica Tsang** (Dickinson College): Mantle stratigraphy beneath Craven Lake cone based on studies of mantle xenoliths [B.Sc. thesis]
- 2004-05** **Kate Wetherell** (Dickinson College, B.Sc. Honors thesis): Origin of the West Tuya lava field, northwestern B.C. [supported by DC Faculty-Student Research Grant]
- 2005** **Chira Endress** (Dickinson College): Petrology of plutonic inclusions from Centre Hills volcano, Montserrat [supported by DC Faculty-Student Research Grant]
- 2004** **Adrian Biscontini** (Dickinson College): U-Th/He dating of xenolith samples from British Columbia, Canada [supported by Dana Internship]
- Camille Carter** (Dickinson College): Petrology of Peridotite Xenoliths from San Quintin, Baja California, Mexico
- Kate Wetherell** and **Matt Nogier** (Dickinson College): Testing hypotheses for the environment of eruption of the Pointer Ridge pyroclastic deposit, Hoodoo Mountain volcano, BC, Canada: volcanic explosions into the air or beneath ice? [supported by DC Faculty-Student Research Grant]
- 2003** **Kate Wetherell** (Dickinson College): GIS and field mapping of Neogene to Recent trachytes from the northern Cordilleran volcanic province, northwestern British Columbia [supported by Whitaker Foundation Faculty-Student Research Grant]
- 2002-2003** **Shaun Brown** (Dickinson College, B.Sc. Honors thesis): Geochemical characterization of ash samples from Korovin volcano, Atka Island, Alaska [co-supervisor with Dr. Gene Yogodzinski, U. of South Carolina]

**2000-01**      **Anna Bye** (GVSU undergraduate): An investigation of glacial influence on volcanic stratigraphy and morphology at Ruby Mountain volcano, northwestern British Columbia, Canada [funded by Michigan Space Grant Consortium (MSGC); North Central Region Geological Society of America (GSA), MSGC, and AGU abstracts]

**Andrew McCarthy** (GVSU undergraduate): Stratigraphy of volcanic rocks at Volcanic Creek, northwestern British Columbia, Canada: implications for Quaternary geology [funded by MSGC; MSGC and AGU abstracts]

**1999-2000**      **Cari Roughley** (GVSU undergraduate): Petrologic study of xenoliths from Prindle volcano, Alaska: reconstructing the lithospheric stratigraphy beneath Prindle volcano [funded by MSGC; Geological Association of Canada and MSGC abstracts]

**Anna Bye** (GVSU undergraduate): An investigation of the eruption environment of the Watts Point lava flow, southwestern British Columbia, Canada [funded by MSGC; American Geophysical Union (AGU) and MSGC abstracts; paper in Geological Survey of Canada (GSC) *Current Research*]

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**SELECTED GRANTS and GRANT PROPOSALS**


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- 2008-2006** National Science Foundation Petrology and Geochemistry Division EAR-0439707: RUI/Collaborative Proposal: Using the Products of Volcano-Ice Interaction to Constrain Paleo-Ice Conditions (awarded \$155,000 for 3 years)
- 2007** Dickinson College Dana Summer Internship: U-Th/He dating of xenoliths from British Columbia at University of Arizona (with student A.-J. Selene; awarded \$968)
- 2005** Dickinson College Faculty-Student Research Grant: Origin of magmatic inclusions from Centre Hills volcano, Montserrat, West Indies (with student C. Endress; awarded \$12,640)
- 2004** Dickinson College Dana Summer Internship: U-Th/He dating of xenoliths from British Columbia at Yale (with student A. Biscontin; awarded \$968)
- Dickinson College Whitaker Faculty-Student Research Grant: Testing hypotheses for the environment of eruption of the Pointer Ridge pyroclastic deposit, Hoodoo Mountain volcano, BC, Canada: volcanic explosions into the air or beneath ice? (with students M. Nogier and K. Wetherell; awarded \$16,216)
- 2003** National Science Foundation Petrology and Geochemistry Division: RUI: Petrological Imaging of the Lithosphere Beneath the Nass Volcanic Field, Northwestern North American Cordillera (applied for \$153,832; NOT FUNDED).
- Dickinson College Whitaker Faculty-Student Research Grant: Comparison of field and mineralogical characteristics of trachytic volcanism in the northern Cordilleran volcanic province, British Columbia, Canada (with student K. Wetherell; awarded \$17,715)
- 2002** Michigan Space Grant Consortium Research Seed Grant: Constraints from volcano-ice deposits on Cordilleran ice sheet fluctuations during the Wisconsin glaciation, northwestern British Columbia: integrating field-based and satellite observations with GIS (awarded \$19,268 with matching funds from GVSU— *declined due to change in employment*)
- 2001** GVSU Robert and Mary Pew Faculty Teaching and Learning Center Teaching Renewal and Development grant to support travel to 2001 GSA Annual Meeting, Boston, MA (\$500)
- GVSU Research and Development Office Grant-in-aid in support of travel for presentations at Eleventh Annual Goldschmidt Conference, Hot Springs, VA (\$500)
- 2000** Pew Faculty Teaching and Learning Center Presidential Teaching Initiative Grant: Revitalizing Course Curricula and Program Coherency in the Department of Geology, GVSU (awarded \$15,000)
- GVSU Science and Mathematics Division Matching Grant: An investigation of glacial influence on volcanic stratigraphy and morphology at Ruby Mountain volcano, NW British Columbia, Canada (\$2500 to support student MSGC grant)
- GVSU Science and Mathematics Division Matching Grant: Stratigraphy of volcanic rocks at Volcanic Creek, NW British Columbia, Canada: implications for Quaternary geology (\$2500 to support MSGC grant)



- 1999** GVSU Science and Mathematics Division Matching Grant: An investigation of the eruptive environment for the Watts Point lava flow, SW British Columbia, Canada (\$2500 to support MSGC grant)
- GVSU Science and Mathematics Division Matching Grant: Petrologic study of xenoliths from Prindle volcano, Alaska: reconstructing the lithospheric stratigraphy beneath Prindle volcano (\$2500 to support MSGC grant)
- 1997-98** National Science and Engineering Research Council (NSERC) LITHOPROBE SNORCLE Transect: Petrological imaging of the Northern Cordilleran continental lithosphere Part III: Synthesis and analysis (co-written with PI J.K. Russell; \$29,500 CDN)
- 1996-97** NSERC LITHOPROBE SNORCLE Transect: Petrological imaging on the Northern Cordilleran continental lithosphere Part II: petrological evidence for composition and structure of the continental lithosphere beneath the Yukon-Tanana, Cache Creek and Stikine terranes (co-written with PI J.K. Russell; \$26,000 CDN)
- 1995-96** NSERC LITHOSPHERE SNORCLE Transect: Petrological imaging of the Northern Cordilleran continental lithosphere using crustal xenoliths from Recent volcanoes (co-written with PI J.K. Russell; \$21,000 CDN)

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**CONFERENCES/SPECIAL SESSIONS/SYMPOSIA ORGANIZED**

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- 2008 Guest Editor, *Journal of Volcanology and Geothermal Research* Special Issue on Volcano-Ice Interactions
- 2007 Co-organizer for Second Volcano-Ice Interactions conference, Vancouver, BC, Canada, 19-22 June
- 2005 Co-organizer for Fall AGU Special Session on Volcano-Ice Interactions, San Francisco, CA, December
- Guest Editor, *Lithos* vol. 87, No 1-2, Special Issue: Mantle to magma: lithospheric and volcanic processes in western North America Special Issue
- 2004 Co-organizer for GAC-MAC Special Session on Cordilleran Volcanism, May, Vancouver, BC