

**Dr. Laura E. Webb**

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**EDUCATION**

PhD in Geological and Environmental Sciences, Stanford University, Stanford, California, 1999.  
Doctoral Dissertation: "Exhumation of high and ultrahigh-pressure rocks in the Qinling–Dabie Orogen, eastern China and the Yagan–Onch Hayrhan metamorphic core complex, southern Mongolia." M.O. McWilliams, advisor. W.G. Ernst, S.A. Graham, and B.R. Hacker (UCSB), committee members.

BS in Geology, University of California, Los Angeles, *cum laude*, 1994.

**APPOINTMENTS**

Associate Professor, Department of Geology, University of Vermont, Burlington, Vermont, Fall 2014–present.

Assistant Professor, Department of Geology, University of Vermont, Burlington, Vermont, 2008–2014.

Graduate Faculty, University of Vermont, Burlington, Vermont, 2009–present.

**PREVIOUS RESEARCH AND WORK EXPERIENCE**

Research Assistant Professor, Department of Earth Sciences, Syracuse University, Syracuse, NY, 2004–2012.

Syracuse University Noble Gas Isotopic Research Laboratory Manager, Department of Earth Sciences, Syracuse University, Syracuse, NY, 2000–2008.

<sup>40</sup>Ar/<sup>39</sup>Ar Laboratory Manager, University of Geneva, Switzerland, 1999–2000.

2016-



and to explore curriculum design strategies that will engage students in thinking about sustainability from a multidisciplinary perspective.  
Nominated for the 2011 Kroepsch-



University of Vermont Faculty Senator, Department of Geology. 2018–2022; 2009–2010.

Member of Selection Panel for the Simon Scholarship at UVM. Spring 2022. Reviewed candidate applications and conducted candidate interviews.

National Science Foundation Geoinformatics Program review panel member, December, 2021.

Acting Director of Graduate Studies, Department of Geology, Fall 2021. Liaison between Geology Department and Graduate College; contact person for student inquiries into program.

AGeS2 Program—Awards for Geochronology Student Research—Review Panel member, 2020 and 2021. Funding 2 (r( Fa)1-)6 (s)-002 T2 (ram)TJ0 Tc 0 Tw 6.45 0 Td(—)Tj0.001u ( R)4mp(tud)1rTd(a)4

Session organizer and convener, "Bridging Two Continents: Comparative Studies of Accretionary Orogenesis in the Central Asian Orogenic Belt, North American Cordillera, and Other Orogenic Belts". Joint meeting of the Geological Society of America (GSA) and the Geological Society of China (GSC), 2015 GSA Annual Meeting, Baltimore, Maryland, November 2015.  
NSF EarthScope 2015 National Meeting organizingdgaB

- February 2016, University of Wisconsin, Madison, "Slippery when wet: Confessions of an intraplate fault zone."
- March 2015, University of Massachusetts, Amherst, "How to look older than your age: Phanerozoic life in the fastlane of the East Gobi Fault Zone."
- October 2014, invited lecture on  $^{40}\text{Ar}/^{39}\text{Ar}$  geochronology, Geological Society of America short course "EarthScope: Geochronology and the Earth Sciences", 2014 GSA Annual Meeting, Vancouver, Canada.
- March 2012, McGill University GEOTOP Seminar, "The Epic Saga of Tavan Har: Phanerozoic Continental Growth, Collisional Orogenesis, and Intraplate Deformation in Southeastern Mongolia."
- March 2012, University of New Hampshire Randolph W. Chapman Colloquium, "The Epic Saga of Tavan Har: Phanerozoic Continental Growth, Collisional Orogenesis, and Intraplate Deformation in Southeastern Mongolia."
- September 2009, Department of Geology, Colby College, "P-T-t-D Paths of Metamorphic Tectonites and Making the Leap from Micron to Plate Scale."
- October 2008, Department of Geology, Middlebury College, "Can subduction be undone? Examining the role of microplate rotation in the exhumation of high and ultrahigh-pressure rocks in Papua New Guinea."
- April 2008, Syracuse University College of Arts and Sciences Frontiers of Science Lecture Series, "How do plate boundaries evolve on Earth?"
- February 2008, Department of Geology, University of Vermont, "What's under the rug? Unraveling the tectonic history of southeastern Mongolia."
- November 2006, Department of Geology & Geography, West Virginia University, "Unraveling complex intraplate deformation in southeastern Mongolia."

## PUBLICATIONS IN PEER-REVIEWED JOURNALS

*Student authors indicated in italics. # denotes papers presenting data from UVM Argon Geochronology Laboratory.*

- #*Braza, M.*, McQuarrie, N., Robinson, D.M., and **Webb, L.E.**, under review. Temperature, deformation, and mass transfer in a hot orogen: Insights from thermokinematic forward models for far western Nepal. Submitted to *Tectonics*.
- #*Tam, E.*, **Webb, L.E.**, *Aiken, C.*, Kim, J., and Klepeis, K., *accepted manuscript*. Formation of the Green Mountain Anticlinorium in northern Vermont at ca. 420 Ma. *Memoir—Geological Society of America: Laurentia: An Evolving Continent*.
- #*Brombin, V.*, *Pettitt, E. A.*, Fahnestock, M. F., Casalini, M., **Webb, L. E.**, Bryce, J. G., and Bianchini, G., 2021. New geochemical and geochronological data on the Cenozoic Veneto Volcanic Province: Geodynamic inferences. *Lithos*, doi.org/10.1016/j.lithos.2021.106507.
- #*Caswell, B.*, Gilotti, J.A., **Webb, L.E.**, McClelland, W.C., *Wright, K.*, Piepjohn, K., and von Gosen, W., 2021.  $^{40}\text{Ar}/^{39}\text{Ar}$  Dating of Paleoproterozoic shear zones in the Ellesmere-Devon Crystalline Terrane, Nunavut, Canadian Arctic, *Canadian Journal of Earth Sciences*, v. 58, no. 10, p. 1073-1084. DOI 10.1139/cjes-2020-0197.
- #*Boemmels, J.R.*, Crespi, J.M., **Webb, L.E.**, and Fosdick, J.C., 2021.  $^{40}\text{Ar}/^{39}\text{Ar}$  and LA-ICP-MS U-Pb geochronology for the New England portion of the Early Cretaceous New England-Quebec



igneous province: Implications of the postrift evolution of the eastern North American margin. *American Journal of Science*, v. 321, p. 365-391. DOI 10.2475/03.2021.03.

#Locmelis, M., Moroni, M., Denyszyn, S., **Webb, L.**, Fiorentini, M., Sessa, G., Caruso, S., Mathur, R., Nanzad, B., 2020. On the formation of magmatic sulfide systems in the lower crust by long-lived mass transfer through the lithosphere: Insights from the Valmaggia pipe, Ivrea Verbano Zone, Italy. *Terra Nova*. DOI: 10.1111/ter.12499.

Schaen, A.J., Jicha, B.R., Hodges, K.V., Vermeesch, P., Stelten, M.E., Mercer, C.M., Phillips, D., Rivera, T.A., Jourdan, F., Matchan, E.L., Hemming, S.R., Morgan, L.E., Kelley, S.P., Cassata, W.S., Heizler, M.T., Vasconcelos, P.M., Benowitz, J.A., Koppers, A.P., Mark, D.F., Niespolo, E.M., Sprain, C.J., Hames, W.E., Kuiper, K.F., Turrin, B.D., Renne, P.R., Ross, J., Nomade, S., Guillou, H., **Webb, L.E.**, Cohen, B.A., Calvert, A.T., Joyce, N., Ganerød, M., Wijbrans, J., Ishizuka, O., He, H., Ramirez, A., Pfänder, J.A., Lopez-Martínez, M., Qiu, H., and Singer, B.S., 2020. Interpreting and reporting  $^{40}\text{Ar}/^{39}\text{Ar}$  geochronologic data. *GSA Bulletin*. doi.org/10.1130/B35560.1.

#Klepeis, K.A., **Webb, L.E.**, *Blatchford, H.J.*, Jongens, R., Turnbull, R., and Schwartz, J.J., 2019, The age and origin of Miocene–Pliocene fault reactivations in the upper plate of an incipient subduction zone, Puysegur Margin, New Zealand. *Tectonics*, v. 38, doi.org/10.1029/2019TC005674.

#Klepeis, K.A., **Webb, L.E.**, *Blatchford, H.*, Schwartz, J., Jongens, R., Turnbull, R., and Stowell, H., 2019, Deep slab collision during Miocene subduction causes uplift along crustal-scale reverse

implications for timing and modes of polyphase intracontinental deformation, Earth and Planetary Science Letters, v. 392, p. 1-15, doi: 10.1016/j.epsl.2014.01.016.

***Note: Below are those prior to tenure and promotion to Associate Professor:***

*Ashley, K.T., Webb, L.E., Spear, F.S., and Thomas, J.B., 2013, P-T-D histories from quartz: A case study of the application of the TitaniQ thermobarometer to progressive fabric development*

- Lewis, A.R., Marchant, D.R., Baldwin, S.L., and Webb, L.E., 2006, The age and origin of the Labyrinth, western Dry Valleys, Antarctica: evidence for extensive middle Miocene subglacial floods and freshwater discharge to the Southern Ocean, Geology, v. 34, p. 513–516.*
- Fitzgerald, P., Baldwin, S., Webb, L.E., and O'Sullivan, P., 2006, Interpretation of (U-Th)/He single grain ages from slowly cooled crustal terranes: A case study from the Transantarctic Mountains of southern Victoria Land, Chemical Geology, v. 225, p. 91–120.*
- Baldwin, S.L., Monteleone, B., Webb, L.E., Fitzgerald, P.G., Grove, M and Hill, E.J., 2004, Pliocene eclogite exhumation at plate tectonic rates in eastern Papua New Guinea,*

## WHITE PAPERS

Crespi, J., Klepeis, K., Williams, M., Thomas, W., **Webb, L.**, Gale, M., Kim, J., and Becker, L., 2011, EarthScope in the New England Appalachians: Structural inheritance and the long-term strength of continental lithosphere. National Science Foundation Joint EarthScope-GeoPRISMS Science Workshop for Eastern North America.

Baldwin, S., Fitzgerald, P., Curewitz, D., Mann, P., Hacker, B., **Webb, L.**, Abers, G., Little, T., Wallace, L., Devey, C., Hoernle, K., Speckbacher, R., and Behrmann, J., 2010, Rift Initiation and Evolution within an Active Plate Boundary Zone: The Woodlark Rift of Papua New Guinea. National Science Foundation GeoPRISMS Rift Initiation and Evolution (RIE) initiative.

## PUBLISHED (REFERREED) ABSTRACTS OF CONFERENCE PRESENTATIONS

*Student authors indicated in italics. # denotes presentations including data from UVM Argon Geochronology Laboratory.*

Klepeis, K., **Webb, L.E.**, Miranda, E., and Schwartz, J., 2022. D

#*Browning-Hanson, J., Viète, D.R., Webb, L.E., Piccoli, P.M., 2020. Resolving the rifting of Rodinia: Detrital geochronologic evidence for spatial and temporal prevalence of sub-orogenic tectonothermal activity in the Appalachian–Caledonian system. Geological Society of America Abstracts with Programs. Vol 52, No. 6, doi: 10.1130/abs/2020AM-383875-* W e

*#Tam, E., Webb, L.E., and Aiken, C., 2018. Geochronologic Constraints on the Timing of*







conjugate margins, within core complexes and eclogite-bearing gneiss domes of the Woodlark rift system of eastern Papua New Guinea, (EOS, Transactions, American Geophysical Union).

- Ashley K.T., Webb, L.E., Spear, F.S., and Thomas, J.B., 2012, P-T-D Histories and Reequilibration of Ti in Quartz: Using the TitaniQ Thermobarometer in Poly-Deformed Tectonic Terranes, Mineralogical Magazine, 1436, Goldschmidt conference, Montreal, Quebec, Canada.*
- Spear, F.S., Ashley K.T., Webb, L.E., and Thomas, J.B., 2012, Tectonic implications of short metamorphic episodes, Goldschmidt Conference, Montreal, Quebec, Canada.*
- Ruksznis, A., Kim, J., Klepeis, K., and Webb, L.E., 2012, Integration of structural analysis, EMI, and GPR surveys, and hydrogeology in the Plainfield quadrangle, central Vermont, (Geological Society of America Northeastern Section – 47<sup>th</sup> Annual Meeting).*
- McNiff, C.M., Klepeis, K., Webb, L.E., and Kim, J., 2012, Geometric variability and spatial extent of an Acadian dome and basin fold interference pattern in NW Vermont, (Geological Society of America Northeastern Section – 47<sup>th</sup> Annual Meeting).*
- Webb, L.E., Taylor, J.P., Heumann, M.J., Johnson, C.L., Stypula, M.J., and Kylander-Clark, A.R.C., 2011, Permo-Triassic collisional orogenesis and transition to intraplate sinistral shear in southeastern Mongolia, (EOS, Transactions, American Geophysical Union).*
- Baldwin, S.L., Zirkparvar, N.A., Webb, L.E., Kula, J., Metcalf, J.R., Fitzgerald, P.G., and Catalano, J.P., 2011, The isotopic record of subduction and exhumation within the (U)HP terrane of Papua New Guinea, 9<sup>th</sup> International Eclogite Conference, Czech Republic.*
- Catalano, J.P., Baldwin, S.L., Fitzgerald, P.G., and Webb, L.E., 2011, The isotopic record of subduction and exhumation within the (U)HP terrane of Papua New Guinea, 9<sup>th</sup> International Eclogite Conference, Czech Republic.*
- Fitzgerald, P.G., Baldwin, S.L., Miller, S.R., Little, T.A., Webb, L.E., Metcalf, J.R., and Perry, S.E., 2011, Apatite fission track and (U-Th)/He dating in the world's youngest UHP terrane: The Woodlark rift of southeastern Papua New Guinea, Mineralogical Magazine, p. 852.*
- Webb, L.E., Taylor, J.P., Heumann, M.J., Johnson, C.L., Stypula, M.J., and Hagen-Peter, G.A., 2010, Thermochronologic Records of Intraplate Deformation in the Northern East Gobi Fault Zone, Mongolia (EOS, Transactions, American Geophysical Union).*
- Ashley K.T., Webb, L.E., Spear, F.S., and Thomas, J.B., 2010, Constraining P-T-t-D Histories with the TitaniQ Thermobarometer: Preliminary Findings from the Strafford Dome, Vermont (EOS, Transactions, American Geophysical Union).*
- Stypula, M.J., and Webb, L.E., 2010, Microstructural and U-Pb Zircon Constraints on the Relationship between Partial Melting and Ductile Shear in the East Gobi Fault Zone, Southeast Mongolia (EOS, Transactions, American Geophysical Union).*
- Baldwin, S., Zirkparvar, N.A., Catalano, J.P., Fitzgerald, P.G., Webb, L.E., and Little, T., 2010, Reconstructing the Mid-Miocene to Recent evolution of the Woodlark Rift (EOS, Transactions, American Geophysical Union).*
- Catalano, J.P., Baldwin, S., Fitzgerald, P.G., Webb, L.E., and Hollocher, K., 2010, Temporal and geochemical constraints on active volcanism in southeastern Papua New Guinea (EOS, Transactions, American Geophysical Union).*
- Baldwin, S.L., Webb, L.E., Fitzgerald, P.G., Zirkparvar, N.A., and Catalano, J.P., 2010, From subduction to rifting: The Late Cretaceous–Cenozoic tectonic evolution of eastern Papua New*



- Webb, L.E.**, Baldwin, S.L., Little, T.A., and Fitzgerald, P.G., 2008, Is Microplate Rotation Driving HP–UHP Exhumation in Eastern Papua New Guinea? (Geological Society of America *Abstracts with Programs*, Geological Society of America Abstracts with Programs, v. 40, n. 6, p. 551). **INVITED.**
- Webb, L.E.**, Johnson, C.L., Minjin, C., 2007, Thermochronology of early Mesozoic shear in the East Gobi Fault Zone, Mongolia (EOS, Transactions, American Geophysical Union).

Leech, M.L., **Webb, L.E.**, and Yang, T., 2005, Diachronous histories for the Dabie-Sulu orogen from high-temperature geochronology (Geological Society of America *Abstracts with Programs*, v. 37, n. 7, p. 57)

*Affolter, M.D.*, Johnson, C.L., and **Webb, L.E.**, 2005, Tectonic History of the East Gobi Basin (Geological Society of America *Abstracts with Programs*, v. 37, n. 7, p. 442).

Fitzgerald, P., Baldwin, S., Muñoz, J.-A., **Webb, L.**, and *Schwabe, E.*, 2005, Exhumation of the Pyrean intracontinental collisional orogen: New thermochronologic constraints from the central Pyrenees (Geological Society of America *Abstracts with Programs*, v. 37, n. 7, p. 346)

**Webb, L.E.**, Baldwin, S.L., Little, T.A., and Fitzgerald, P.G., 2005, A pivoting microplate model for subduction eversion and exhumation of UHP terranes (7<sup>th</sup> International Eclogite Conference, Austria, Mitt.Österr.Miner.Ges. 150, p. 164).

Baldwin, S.L., **Webb, L.E.**, and *Monteleone, B.*, 2005, Late Miocene–Pliocene eclogites of eastern Papua New Guinea: the youngest known HP/UHP terrane on Earth (7<sup>th</sup> International Eclogite Conference, Austria, Mitt.Österr.Miner.Ges. 150, p.16).

*Monteleone, B.*, Baldwin, S., **Webb, L.** & Fitzgerald, P., 2005, Constraints on Eclogite Facies Metamorphism in Southeastern Papua New Guinea from in situ Ion Microprobe U-Pb and REE Analyses (15<sup>th</sup> Annual Goldschmidt Conference, Abstract Volume, A60).

Johnson, C.L., and **Webb, L.E.**, 2005, Cenozoic Reactivation of the East Gobi Fault Zone, 20th Symposium, Himalaya-Karakorum-Tibet Workshop (HKT20), Aussois, France, (Geologie Alpine, Memoire H.S., n. 44, p.94-95).

**Webb, L.E.**, Johnson, C.L., Minjin, Ch., Sersmaa, G., *Affolter, M.*, and Manchuk, N, 2004, Mesozoic and Cenozoic Intracontinental Deformation in Southeastern Mongolia, (EOS, Transactions, American Geophysical Union, v. 85 (47), F1698).

Johnston, C.L., **Webb, L.E.**, 2005, Cenozoic Reactivation of the East Gobi Fault Zone, 20th Symposium, Himalaya-Karakorum-Tibet Workshop (HKT20), Aussois, France, (Geologie Alpine, Memoire H.S., n. 44, p.94-95).



**Webb, L.E.**, Hacker, B.R., Ratschbacher, L., and Dong S., 1996. Structural and geochronological constraints on the exhumation of high- and ultrahigh-pressure rocks in the Qinling–Dabie Orogen, China. (Penrose Conference: Exhumation Processes: Normal Faulting, Ductile Flow, and Erosion. Penrose Conference, Greece.)

Hacker, Bradley R., Ratschbacher, L., **Webb, L.E.**, and Dong S., 1995, What brought them up? Exhumation of ultrahigh-pressure rocks in the Dabie Mountains of eastern China. (EOS, Transactions, American Geophysical Union; v. 76).

**Webb, L.E.**, Hacker, B.R., Ratschbacher, L., and Dong S., 1995, Structures and kinematics of exhumation from 40 km; the Dabie Shan ultrahigh-pressure rocks, E. China (Geological Society of America *Abstracts with Programs*, v. 27).

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Microstructures to Orogenic Processes. Went on to a PhD program at Virginia Tech, post-doc at UT Austin, and now a visiting professor at University of Pittsburgh.

Joshua Taylor, (BS St. Lawrence University, MS Syracuse University), Syracuse University, PhD in Earth Sciences (co-advisor with P.G. Fitzgerald), May 2011. Tectonic History of the East Gobi Fault Zone, Southeastern Mongolia: An Integrated Study Using Structural Geology, Geochronology, and Thermochronology. Currently employed at ExxonMobil Exploration Company.

#### **GRADUATE STUDENT THESIS COMMITTEES**

Siga Juozelskis, University of Vermont, Department of Geology, MS expected in 2023, Addressing Vermont's Intensifying Landslide and Mass-wasting Problem with the Cotton Brook Landslide in Waterbury, Vermont. Advisor: Keith Klepeis.

John Mark Brigham, Syracuse University, Department of Earth Sciences. PhD Candidate. Petrology and geochemistry of ultramafic rocks in the New England Appalachians, Quebec, and Newfoundland (title TBD). Advisor: Suzanne Baldwin.

K.C. Bijay, University of Vermont, Civil and Environmental Engineering, PhD, 2022. Investigation of Production Enhancement in Deep Geothermal Systems. Advisor: Ehsan Ghazanfari. Committee chairperson.

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- Maquire IV, Henry, MS, 2018. Application of Geostatistical and Geochronological Methods to Stratigraphic Problems in the Lower Cambrian Monkton Formation. Advisor: Charlotte Mehrrens.
- Julia Runcie, University of Vermont, Ecological Planning Program, Rubenstein School of Environment and Natural Resources. MS, 2017. Environmental assessment guiding recreation at Travertine Hot Springs ACEC. Advisor: Dean Wang
- Gina Accorsi, University of Vermont, Department of Geology, MS, 2017. Geochemical and XRD fingerprinting of conflict minerals, Advisor: John M. Hughes.
- Mike Ingram, University of Vermont, Department of Geology, MS, 2016. The Effects of Heterogeneity in the Lower Crust on Strain Partitioning and Fabric Development During Extension U-37.51 n



- Jessica Terrien, Syracuse University, Department of Earth Sciences, PhD, 2012. Thermochronology and Geophysical Modeling of the Santa Catalina Metamorphic Core Complex, Arizona. Advisor: Suzanne Baldwin.
- Charles Trodick, University of Vermont, Department of Geology, MS, 2011. Sediment Generation Rates in the Potomac River Basin. Advisor: Paul Bierman.
- Eric Portenga, University of Vermont, Department of Geology, MS, 2010. Using  $^{10}\text{Be}$  to constrain erosion rates of bedrock outcrops globally and in the central Appalachian Mountains. Advisor: Paul Bierman.
- Janelle McAtamney, University of Vermont, Department of Geology, MS, 2010. Synthesizing the tectonic evolution of the Magallanes foreland basin during the Late Cretaceous backarc basin inversion using structural and stratigraphic evidence from Bahia Brookes, southern Patagonia, Chile. Advisor: Keith Klepeis.
- Matthew Heumann, University of Utah, Department of Geology and Geophysics, PhD, 2010. Tectonic history and subsequent basin development along the East Gobi Fault Zone in southeastern Mongolia. Advisor: Cari Johnson.
- Brian Monteleone, Syracuse University, Department of Earth Sciences, PhD, 2006. Timing and conditions of formation of the D'Entrecasteaux Islands, Southeastern Papua New Guinea. Advisor: Suzanne Baldwin.

#### **ADVISING OF UNDERGRADUATE RESEARCH**

- Ryan Mistur, Geology BA, 2022. FESEM study of a potential meteorite found in Vermont.
- Brenda Waters, Continuing Education, 2021–2022. Microstructural analyses and  $^{40}\text{Ar}/^{39}\text{Ar}$  geochronology of the Dry Hill Thrust in the Berkshire Massif.
- Zach Dreiker, Geology BS, 2020. Paleozoic deformation in the Berkshire Massif.
- Kyle McCarthy, Geology BS, 2020. Microstructural analyses and  $^{40}\text{Ar}/^{39}\text{Ar}$  geochronology of shear zones along the NE margin of the (o)-i(g)1lw



Semple, Ian, Syracuse University, Department of Earth Sciences, BS, Spring 2008. "Early Mesozoic overprinting of Paleozoic protoliths during shear zone formation in the southeast Gobi, Mongolia". Advising period: Summer–Fall 2007. Supported by National Science Foundation Research Experience for Undergraduates supplement to grant EAR-0537165.