

**UNIVERSITY OF MAINE
TENURE AND PROMOTION APPLICATION**

PROPOSED RANK/TITLE: Professor

EFFECTIVE: 1 September 2018

I. FACE DATA

A. Name: Christopher Charles Gerbi

B. Present Rank: Associate Professor with tenure

C. College/Department: Earth and Climate Sciences

D. Professional Experience

Associate Professor, University of Maine, September 2012 – present

Assistant Professor, University of Maine, January 2007 – August 2012

Visiting Assistant Professor, Norwich University, July – December 2006

Visiting Assistant Professor, Bowdoin College, September 2005 – May 2006

E. Educational Background

Amherst College, Geology, A.B. summa cum laude, 1996

University of California, Davis, Geology, M.S., 1999

University of Maine, Earth Sciences, Ph.D., 2005

II. RECORD OF ACTIONS

A. Initial Probationary Appointment:

Effective 1 January 2007 for 18 months with one year credited

B. Reappointments:

Effective 1 September 2008 for one year

Effective 1 September 2009 for one year

Effective 1 September 2010 for one year

Effective 1 September 2011 for one year

C. Promotion:

Effective 1 September 2012 to Associate Professor with tenure

D. Recommendations for:

Recommending body	Recommendation (Yes/No/No action)	Signature	Date
Peer committee			
Dean			
Provost			
President			

E. Exceptions to Board of Trustees policy

None.

F. Transmittal letters

1. President
2. Provost
3. Dean

III. CANDIDATE'S PROFILE

A. DOCUMENTATION OF TEACHING (including advising)

Percentage of time devoted to teaching: 50%

Teaching approaches and activities

My primary goals as a teacher, mentor, and advisor have remained consistent during my time at UMaine: (1) to help students develop methods for constructing knowledge that will serve them well into the future, when their content needs will undoubtedly differ from those of today, and (2) to help students develop fundamental knowledge about Earth processes, the nature of science, communication, and educational practices. Modern concepts and rigorous content knowledge are essential to function as a professional in the fields our graduates will enter (e.g., teaching, research, consulting, governance), but equally important is ensuring that students will retain that knowledge in the future and be able to assimilate new concepts as science evolves.

To achieve the above goals, I employ the following strategies:

1. Utilize the process of “backwards design” in developing courses, wherein learning outcomes define the content parameters, course structure, and assessments.
2. Emphasize experiential, active, student-centered learning and knowledge construction.
3. Incorporate applications of content knowledge (e.g., generating interpretive posters for the new national monument).
4. Employ concept spiraling, in which we return to similar ideas throughout a course, adding a layer of complexity each time.
5. Provide opportunities for revision, rather than a single opportunity to complete a task.

Alignment with University and System curricular goals

The University of Maine Mission Statement reads, in part, “The university recognizes the increasingly global context of economic, social, scientific, technological, and political issues, as well as the evolving multicultural dimensions of contemporary society.” In my courses, we explicitly address the interconnectivity and global nature of Earth resources and societal issues related to Earth and climate science. For example, in Experiencing Earth (ERS151) we discuss the local-to-global connections between glaciers and sea level. In some years we investigate the impact of the combination of natural hazards and societal factors, including the role of cultural norms.

I address diversity and multicultural integration more in education classes (SMT503). There, we emphasize the importance of developing culturally-neutral assessments and maintaining an awareness of how student backgrounds can affect their learning. We also discuss strategies to overcome cultural barriers to learning. I incorporate those strategies in my other classes.

Work in association with K-12 educators and students

Having participated in an NSF GK-12 program as a graduate student and having taught middle and high school, I appreciate and seek to support the work of K-12 educators, as well as benefit from their insight into learning. In the past six years, I have continued my commitment to K-12 instruction by:

- Teaching SMT503 *Integrated Approaches in Earth Science Education I* [a graduate-level course primarily for students in the Master of Science in Teaching (MST) program, most of whom go on to be K-12 teachers]
- Teaching an additional graduate level pedagogy course (Fall 2017)
- Participating in numerous aspects of the Maine Physical Science Partnership (now the Maine STEM Partnership) and Noyce development program, run by the Center for Research in STEM Education (RiSE Center).
- Running multi-day professional development sessions and/or working with teachers to revise curricular material – in conjunction with the Maine Physical Science Partnership – for the past six summers.
- Providing laboratory and field research opportunities for five K-12 teachers.
- Providing several tours, mainly of the scanning electron microscope laboratory, to visiting classes.

Special efforts undertaken to enhance teaching effectiveness

I have maintained currency in pedagogical best practices through my association with the RiSE Center and K-12 teachers. I continue to provide out-of-classroom experiences to the extent possible. These include field trip for courses and mentoring undergraduates in research. In 2016 I was awarded a Faculty Incentive Grant to assist with course development and include a Maine Learning Assistant in ERS151.

The following high school and undergraduate students have participated in research projects in the past six years:

Student	Experience level	Period
Renée Clavette	Undergraduate	Fall 2017-
Natasha MacWalters	Undergraduate	Spring 2016-
Laura Mattas	Undergraduate	Spring 2016-
Jackie Bellefontaine	Undergraduate	Spring 2016
Zach Mason	Undergraduate	Spring 2015
Connor Scofield	Undergraduate	2014-2015
Anthony Feldman	Undergraduate	Summer 2014
Zachary Rogers	Undergraduate	2013-2014
Cal Hamilton	High school student	Summer 2013
Liam Kenefic	High school student/ Undergraduate	Summer 2013 through Summer 2014, Summer 2016
Paul Robinson	High school student	Summer 2012
Simon Hanson	Undergraduate	2011-2012
Jason Lively	Undergraduate	2011-2012

Summary of courses taught and enrollment

Course number	Course name	Average # of students	Taught (X) or teach (T) regularly
ERS151	Experiencing Earth	19	T
ERS200	Earth Systems	15	X
ERS330	Mineralogy	10	X
ERS451	Tectonics	11	T

ERS578	Metamorphic Petrology	8	X
ERS579	Topics in Structure and Petrology	4	T
ERS602	Proposal writing	7	T
ERS602	College Teaching in the Natural Sciences	4	
SMT503	Integrated approaches in Earth Science education I	8	T
HON324	Earth Hazards	7	

Special assignments or innovations

Developing and being involved in courses and curricular reform outside my discipline-based teaching assignments has allowed me to incorporate new perspectives, reach students I wouldn't otherwise reach, and develop new collaborations. These activities include:

- Seeking opportunities for work in courses to contribute outside the classroom. Two recent examples include ERS451 (Tectonics) drafting ideas for interpretive panels for the Katahdin Woods and Waters National Monument and a graduate seminar developing educational modules for undergraduate and high school classes.
- Participating in the School efforts to develop more comprehensive programmatic learning outcomes
- Teaching an Honors College tutorial course
- Participating in the review of the Honors College curriculum
- Teaching SMT503 as part of the Master of Science in Teaching Program
- Participating in one class session of NFA117 (Fall semesters): introducing new ERS majors to my laboratory and research program

Advising

My focus as an advisor is to help nurture and promote the student so s/he is in the best possible position to meet their post-graduation goals. Specific advising strategies necessarily vary from person to person and throughout their graduate career. In general, I encourage students to develop collaborations, serve as informal mentors to fellow students, assist with laboratory administration, attend conferences and field trips, and gain teaching experience. In addition, because their futures are unpredictable, I also encourage students to gain marketable skills that apply to fields outside the geosciences. For example, by becoming a skilled electron microscopist, students can pursue a career in materials science.

My advising commitments are in two units, the School of Earth and Climate Sciences and the RiSE Center (for the Master of Science in Teaching program). Since Fall 2011, I have served or am currently serving as (co-)advisor for nine students and as a committee member for sixteen others.

Name	Degree	Role	Graduation date (expected)
Kate Hruby	M.S.	Advisor	(2019)
Steven Bernsen	Ph.D.	Co-advisor	(2019)
Won Joon Song	Ph.D.	Co-advisor	(2018)
Graham Hummel-Hall	M.S.T	Advisor	(2017)
Stephanie Mills	Ph.D.	Advisor	Leaving the program in 2017 for personal reasons
Deborah Shulman	Ph.D.	Advisor	2016
Stephanie Mills	M.S.	Advisor	2015

Maura Foley	M.S.	Advisor	2015
Ben Frieman	M.S.	Co-advisor	2012
Calvin Mako	B.S.	Advisor	2012
Kimberley Miner	Ph.D.	Member	(2019)
Bora Song	Ph.D.	Member	(2018)
Casey Wilkins	M.S.T.	Member	(2018)
Peter Regan	M.Sc.	Member	(2017)
Derek Labarron	M.S.T.	Member	2017
Erik Anderson	M.S.	Member	2017
Milissa Knox	M.S.T.	Member	2016
Alden Cook	Ph.D.	Member	2016
Samuel Roy	Ph.D.	Member	2015
Patricia Millette	Ph.D.	Member	2014
Lauren Wheeler	M.S.	Member	2013
Kara Soule	M.S.T.	Member	2013
JohnRyan MacGregor	M.S.	Member	2012
John Foster	M.Sc.	Member	2012
Nancy Price	Ph.D.	Member	2012
Elizabeth Burroughs	M.S.T.	Member	2011

B. DOCUMENTATION OF SCHOLARSHIP AND PROFESSIONAL ACTIVITY

Percentage of time devoted to research: 50%

My research focuses on the mechanical properties of rocks and ice, with an ongoing but smaller component in education research and microanalysis. Prior to three years ago, my geoscience research was primarily related to rocks; since then, I have invested significant effort into expanding our analytical capabilities and collaborations to allow cryospheric studies. My research program complements those of other faculty members in the Geodynamics and Crustal Studies Group and in the Climate Change Institute, and my collaborations within UMaine continue with several members of the School and Senthil Vel in Mechanical Engineering. I see my role as bridging the gap between spatial scales, as well as between observations of naturally deformed materials and numerical models of deformation. Most of my work focuses on developing and assessing the impact of crystal-scale processes on the km-scale kinematics of ice and rock.

On the rock side, I have continued using micro- to meso-scale field-based observations and analytical results from rocks and minerals to predict and constrain the mechanical properties and processes of deep portions of Earth's crust. By studying the eroded and exposed roots of ancient mountain belts, such as the Appalachian and Grenville mountain ranges, we are gaining insight into processes operating in inaccessible regions of actively deforming crust. We use that information to develop conceptual and numerical models that seek to predict or explain features of Earth's crust and surface, including deformation, topography, fluid flow, seismic damage and properties, and the distribution of rock types. A strength of this approach, particularly in training students, is the integration of several different methodologies in a holistic approach to solving tectonic problems. One major project is nearing completion, with success in determining the causes of km-scale localized deformation in a large mountain belt. This project has led to developing new ideas about how shear zones form in Earth's continental crust. In the period described in this dossier, I have had continuous support from NSF.

My recently begun work on ice mechanics has resulted in two proposals funded on the first submission: one for a field-based study of the margin of an Alaskan glacier and one to develop a toolbox for planning radar and seismic campaigns, building on the toolboxes we developed for viscous and elastic deformation for rocks. This new research direction has been well received, with reviewer comments such as, “A proposal that could change the framework of understanding of ice dynamics.” and “This proposal should be funded, even if it's the only one you fund in this round.” In addition to the current work, I am part of a \$4M (UMaine share ~\$650,000) pending proposal to assess the stability of Thwaites glacier, which plays a significant role in ice mass balance in West Antarctica. One advance that has made this work possible is the development of capability to analyze the crystallographic structure of large ice samples (5x7 cm) with the electron microscope. I know of only one other lab in the world with this ability.

My subsidiary research efforts continue in a number of microanalysis projects and in education research. For the former, I work on projects related to geochemistry, petrology, climate change (tephrachronology), and anthropology. For the latter, I investigate (1) methodologies to effectively convey climate and climate change concepts to students and the general public and the (2) the effects of student understanding of basic physical science concepts and their application in an Earth science context.

Looking towards the future, the vision for my research program is to build increasingly stronger links between the observational and modeling communities, using natural observations to guide numerical models describing deformation in the geosphere and cryosphere. A major part of these efforts require improving access to models through the development of user-friendly interfaces. This approach will allow the community not only to better describe the processes that shape the solid Earth and ice, but also to predict changes that occur to the landscape and within the climate system.

1. Publications and Creative Works
(submitted or published since October 2011; student authors underlined)

Published peer-reviewed papers

17. Shulman, D.J., **Gerbi, C.**, Marsh, J.H., Yates, M.G., and Culshaw, N.G., in press, Timing and anatomy of granitic strain gradients in the Grenville Front Tectonic Zone, Ontario, Canada, *Geosphere*. [My Ph.D. student was the first author. I was fully involved in all aspects of the project generation and data analysis, and wrote/edited much of the text.]
16. Mills, S.G., **Gerbi, C.**, Marsh, J.H., Yates, M.G., Seaman, S.J., and White, J.C., 2017, Tectonic and chemical implications of cathodoluminescent microstructures in quartz, Parry Sound domain, Ontario, Canada, *Canadian Journal of Earth Sciences*, v. 54, p. 677–692, doi: 10.1139/cjes-2016-0168. [My M.S. student was the first author. I was fully involved in all aspects of the project generation, data analysis, and was the primary editor for much of the text.]
15. **Gerbi, C.**, Johnson, S.E., Shulman, D. and Klepeis, K., 2016, Influence of microscale weak zones on bulk strength, *Geochemistry, Geophysics, Geosystems*, v. 17, p. 4064–4077, doi: 10.1002/2016GC006551. [I conceived the paper, collected the data, ran the models, and wrote the manuscript.]
14. Vel, S.S., Cook, A., Johnson, S.E., and **Gerbi, C.**, 2016, Computational Homogenization and Micromechanical Analysis of Textured Polycrystalline Materials, *Computer Methods in Applied Mechanics and Engineering*, v. 310, p. 749–779, doi: 10.1016/j.cma.2016.07.037. [I consulted on the development of the methodologies presented in the paper and edited/commented on the text. I was co-PI on the grant that supported this work.]
13. Price, N.A., Johnson, S.E., Song, W.J., **Gerbi, C.**, Beane, R., and West, D., 2016, Recrystallization fabrics from sheared quartz ribbons with a strong pre-existing crystallographic preferred orientation, *Tectonophysics*, v. 682, p. 214–236, doi: 10.1016/j.tecto.2016.05.030. [I assisted with the data collection and interpretation, as well as commented on the text.]
12. Culshaw, N.G., Foster, J., Marsh, J.H., and Slagstad, T., and **Gerbi, C.**, 2016, Kiosk Domain, Central Gneiss Belt, Grenville Province, Ontario: a Labradorian palimpsest preserved in the ductile deep crust, *Precambrian Research*, v. 280, p. 249–278. [I consulted throughout the project and commented on the text.]
11. Melosh, B., Rowe, C.D., **Gerbi, C.**, Bate, C.E., and Shulman, D., 2016, The spin zone: Transient mid-crust permeability caused by coseismic brecciation, *Journal of Structural Geology*, v. 87, p. 47–63, doi:10.1016/j.jsg.2016.04.003. [I assisted with data collection and interpretation, as well as edited, in particular, the analytical section of the text.]
10. Culshaw, N.G., **Gerbi, C.**, Ratcliffe, L., 2015, Macro- and microstructural analysis of the North Tea Lake Mylonite Zone: an extensional shear zone in the Central Gneiss Belt, Grenville Province, Ontario, *Canadian Journal of Earth Sciences*, v. 52, p. 1027–1044, dx.doi.org/10.1139/cjes-2015-0009. [I collected the electron microscope data and was heavily involved in editing the text.]
9. **Gerbi, C.**, Johnson, S.E., Cook, A., Vel, S.S., 2015, Effect of phase morphology on bulk strength for power-law materials, *Geophysical Journal International*, v. 200, p. 374–389, doi: 10.1093/gji/ggu388. [I conceived the paper, ran the models, and wrote the

manuscript.]

8. Cook, A., Vel, S.S., **Gerbi, C.**, and Johnson, S.E., 2014, Computational analysis of nonlinear creep of polyphase aggregates: Influence of phase morphology, *Journal of Geophysical Research, Solid Earth*, v. 119, p. 6788-6906, doi:10.1002/2014JB011197. [I was heavily involved in conceiving and developing the methodology described and edited the text. The work took place on a grant on which I was co-PI.]
7. Marsh, J.H., Culshaw, N.G., and **Gerbi, C.C.**, 2013, Timing and conditions of poly-phase metamorphism within the Twelve Mile Bay shear zone: implications for the evolution of mid-crustal decollement zones and western Grenville tectonics, *International Geology Review*, v. 55, p. 525–547, doi: 10.1080/00206814.2013.773768. [I helped develop the project and collaborated on data interpretation; the work took place in conjunction with a grant awarded to me. I also assisted in editing the manuscript.]
6. Frieman, B., **Gerbi, C.**, and Johnson, S.E., 2013, The effect of microstructural and rheological heterogeneity on porphyroblast kinematics and bulk strength in porphyroblastic schists, *Tectonophysics*, v. 587, p. 63-78, doi: 10.1016/j.tecto.2012.11.007. [I was heavily involved in developing the project and interpreting the data. A co-advised M.S. student was first author, and I did substantial editing.]
5. Marsh, J. H., Grew, E. S., **Gerbi, C.**, Yates, M. G., and Culshaw, N.G., 2012, The petrogenesis of the garnet menzerite-(Y), end member $Y_2CaMg_2Si_3O_{12}$, and its bearing on the Y+HREE budget in granulite-facies rocks in the Parry Sound Domain, Grenville Province, Ontario, *Canadian Mineralogist*, v. 53, p. 73-99, doi: 10.3749/canmin.50.1.73. [The work took place in conjunction with a grant awarded to me; I edited the manuscript and assisted with the regional interpretations.]
4. **Gerbi, C.**, 2012, Evaluating the utility of a phase distribution parameter in calculating the bulk viscous strength of two-phase composites, *Journal of Structural Geology*, v. 39, p. 224-236, doi:10.1016/j.jsg.2012.02.008. [I conceived the paper, ran the models, and wrote the manuscript.]
3. Marsh, J.H., **Gerbi, C.**, Culshaw, N.G., Wooden, J.L., and Clark, C., 2012, New in-situ zircon ages from the southern Parry Sound Domain, Grenville Province, Ontario, Canada: Constraints on the timing of metamorphism, dike emplacement, and shearing along the Twelve Mile Bay shear zone, *Precambrian Research*, v. 192-195, p. 142-165, doi:10.1016/j.precamres.2011.10.017. [I helped develop the project and collaborated on data interpretation; the work took place in conjunction with a grant awarded to me. I also assisted in editing the manuscript.]
2. Price, N.A., Johnson, S.E., **Gerbi, C.**, and West, D.P., Jr., 2012, Identifying deformed pseudotachylyte and its influence on the strength and evolution of a crustal shear zone at the base of the seismogenic zone, *Tectonophysics*, v. 518-521, p.63-83, doi:10.1016/j.tecto.2011.11.011. [I assisted with the data collection and interpretation, as well as assisted in editing the text.]
1. Naus-Thijssen, F.M., Goupee, A., Johnson, S.E., Vel, S., and Gerbi, C., 2011, The influence of crenulation cleavage development on the bulk elastic properties and seismic wave velocities of phyllosilicate-rich rocks, *Earth and Planetary Science Letters*, v. 311, p. 212-224. [I assisted with the data collection and interpretation, as well as assisted in editing the text.]

Software and other products

- Cook, A., Vel., S., **Gerbi, C.**, and Johnson, S.E., 2014, Power-law Creep Toolbox (beta version), http://umaine.edu/mecheng/faculty-and-staff/senthil-vel/software/plc_toolbox/
- Cook, A., Vel., S., Johnson, S.E., **Gerbi, C.**, and Song, W.J., 2013, Elastic and Seismic Properties (ESP) Toolbox (beta version), http://umaine.edu/mecheng/faculty-and-staff/senthil-vel/software/ESP_Toolbox/
- Song, W.J., Cook, A., **Gerbi, C.**, Vel., S., Johnson, S.E., 2013, Elastic and Seismic Properties (ESP) Toolbox (beta version) Manual and Tutorial, http://umaine.edu/mecheng/faculty-and-staff/senthil-vel/software/ESP_Toolbox/

Abstracts and conference presentations

43. **Gerbi, C.**, Johnson, S.E., Shulman, D. and Klepeis, K., 2017, Influence of microscale weak zones on bulk viscous strength, *Geophysical Research Abstracts*, v. 19, EGU17-5770.
42. **Gerbi, C.**, Shulman, D.J., Foley, M.B., Culshaw, N.G., Marsh, J.H., and Yates, M.G., 2017, Anatomy of amphibolite facies strain gradients in granitoids of the Grenville Front Tectonic Zone, Ontario, Canada, *Geophysical Research Abstracts*, v. 19, EGU2017-5781.
41. Melosh, B., Rowe, C., and **Gerbi, C.**, 2015, Coseismic brecciation at fault stepovers and transient fluid pathways in a mid-crustal San Andreas analogue: The Pofadder Shear Zone, Namibia and South Africa, AGU Fall Meeting, abstract T12A-04.
40. Kurbatov, A., Dunbar, N.W., **Gerbi, C.C.**, Yates, M.G., Kalteyer, D., and McIntosh, W.C., Anantarctic tephra database (AntT), 2015, 2015 WAIS Divide Ice Core / SPICE Core Science Meeting.
39. **Gerbi, C.**, Culshaw, N.G., Shulman, D.J., Foley, M.B., and Marsh, J.H., 2015, Predicting km-scale shear zone formation, *Geophysical Research Abstracts*, v. 17, EGU2015-3097.
38. **Gerbi, C.**, Johnson, S.E., Cook, A.C., and Vel., S.S., 2015, Phase morphology and bulk strength in power-law materials *Geophysical Research Abstracts*, v. 17, EGU2015-3091
37. **Gerbi, C.**, Marsh, J.H., Johnson, S.E., Culshaw, N.G., Shulman, D.J., Song, W.J., and Foley, M.B., 2015, Rheological predictability in the viscous regime, *Geological Society of America Abstracts with Programs*. v. 47, n. 3, p.103.
36. Song, B.R., Johnson, S.E., Song, W.J., and **Gerbi, C.C.**, 2015, Damage microstructures in garnet and feldspar preserve coseismic cycles at mid-crustal depths in an ancient strike-slip fault system in south-central Maine, *Geological Society of America Abstracts with Programs*. v. 47, n. 3, p.134.
35. Foley, M.B., Shulman, D.J., **Gerbi, C.C.**, and Marsh, J.H., 2015, Processes leading to localization in the granitoid units of the Grenville Front tectonic zone, Ontario, CA, *Geological Society of America Abstracts with Programs*. v. 47, n. 3, p.103.
34. Roy, S.G., Koons, P.O., Tucker, G.E., Upton, P., Smith, S.M., and **Gerbi, C.C.**, 2014, Geomorphic Responses to Crustal Deformation: the Sensitivity of Surface Processes to Bedrock Displacement, Weakening, and Comminution Associated with Brittle Failure, Abstract EP53B-3643 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.

33. Roy, S.G., Koons, P.O., **Gerbi, C.C.**, Capps, D.K., Tucker, G.E., and Rogers, Z.A., 2014, Building Models in the Classroom: Taking Advantage of Sophisticated Geomorphic Numerical Tools Using a Simple Graphical User Interface, Abstract ED53B-3484 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
32. Song, W.J., Johnson, S.E., Price, N.A., Song, B.R., **Gerbi, C.C.**, and West, D.P. Jr., 2014, Seismogenic Cycles, Quartz Microstructures and Localization at the Frictional to Viscous Transition in an Exhumed, Large-Displacement, Seismogenic Strike-Slip Fault, Abstract T13A-4629 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
31. Song, W.J., **Gerbi, C.C.**, Johnson, S.E., Vel., S.S., 2014, Effects of Shear Zone Development on Seismic Anisotropy in the Lower Grenvillian Crust, Abstract S21C-4454 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
30. Johnson, S.E., Vel., S.S., Cook, A.C., Song, W.J., **Gerbi, C.C.**, Okaya., D.A., 2014, ESP Toolbox: A Computational Framework for Precise, Scale-Independent Analysis of Bulk Elastic and Seismic Properties, Abstract S23E-06 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
29. Kurbatov, A., Dunbar, N.W., Iverson, N.A., **Gerbi, C.C.**, Yates, M.G., Kalteyer, D., McIntosh, W., 2014, Antarctic tephra database (AntT), Abstract V31C-4760 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 15-19 Dec.
28. Kurbatov, A., Dunbar, N., **Gerbi, C.**, Iverson, N., Kalteyer, D., McIntosh, W., and Yates, M., 2014, Improving tephra source identification from tropical volcanoes in Antarctic ice core samples, *Abstracts with Program - Tephra 2014*.
27. Melosh, B., Rowe, C., and **Gerbi, C.**, 2014, Belly of the beast: detailed mapping in the deformation core of a quartz-plastic transitional zone fault, implications for deep fault seismicity on major strike slip faults, *Abstracts with Program - Structural Geology and Tectonics Forum*.
26. **Gerbi, C.**, Culshaw, N.G., Shulman, D.J., Foley, M.B., and Marsh, J.H., 2014, Parameterizing orogenically significant shear zone formation, *Abstracts with Program - Geological Association of Canada – Mineralogical Association of Canada*.
25. Regan, P., Culshaw, N. and **Gerbi, C.**, 2014, Transposition of a layered granulite by the progressive development of amphibolite facies shear zones, Twelve Mile Bay, Ontario: Techniques and results, *Abstracts with Program - Geological Association of Canada – Mineralogical Association of Canada Annual Meeting*.
24. Shulman, D., Foley, M., **Gerbi, C.**, and Culshaw, N., 2014, Shear Zones in the Grenville Front Tectonic Zone Part 2: The role of weakening mechanisms, *Abstracts with Program - Geological Association of Canada – Mineralogical Association of Canada Annual Meeting*.
23. Foley, M., Shulman, D., **Gerbi, C.**, and Culshaw, N., 2014, Shear zones in the Grenville Front Tectonic Zone Part 1: Causes of orogenic strain localization, *Abstracts with Program - Geological Association of Canada – Mineralogical Association of Canada Annual Meeting*.
22. Mills, S.G., **Gerbi, C.**, and Johnson, S.E. Cathodoluminescent quartz microstructures in granulites and amphibolites of the Central Gneiss Belt, Ontario, Canada, *Abstracts with Program - Geological Association of Canada – Mineralogical Association of Canada Annual Meeting*.
21. Johnson, S.E., Price, N.A., and **Gerbi, C.C.**, 2014, Coseismic damage and strain

- localization in large displacement, strike-slip fault/shear-zone systems: Observations from near the base of the seismogenic zone, *Abstracts with Program - Geological Association of Canada – Mineralogical Association of Canada Annual Meeting*.
20. Reusch, D.N., Anderson, W.A., Berry IV, H.N. and **Gerbi, C.**, 2014, Iapetan Crossing, Québec-Maine: Appalachian tectonics linked with carbon cycle dynamics, *Abstracts with Program - Geological Association of Canada – Mineralogical Association of Canada Annual Meeting*.
 19. Culshaw, N., **Gerbi, C.**, Marsh, J., and Regan, P., 2014, Nappe-Bounding Shear Zones Initiated On Syn-Tectonic, Pegmatite-Filled Extensional Shear Fractures During Deep-Crustal Nappe Flow In A Large Hot Orogen, *Geophysical Research Abstracts*, Vol. 16, EGU2014-2311, EGU General Assembly 2014.
 18. Melosh, B., Rowe, C., **Gerbi, C.**, Shulman, D., 2014, If it's broke, don't fix it: when can we use three-dimensional breccia clast rotations as a paleoseismic indicator?, GEOTOP 2014.
 17. Shulman, D.J., **Gerbi, C.C.**, and Culshaw, N.G., 2013, Causes of orogenic strain localization at the margin of the Grenville Front and Central Gneiss Belt, Ontario, Canada, Abstract T53B-2576 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.
 16. **Gerbi, C.**, Cook, A., Vel, S., and Johnson, S.E., 2013, Bulk and microscale rheological properties of polyphase power-law materials, *Geological Society of America Abstracts with Programs*, v. 45, n. 1, p. 88.
 15. Ingram, M., Macleod, D., Klepeis, K., **Gerbi, C.**, Yates, M., and Stowell, H.H., 2013, A comparison of microstructures and deformation textures inside and outside the lower crustal Doubtful Sound shear zone, Fiordland, New Zealand, *Geological Society of America Abstracts with Programs*, v. 45, n. 1, p.119
 14. Culshaw, N.G., **Gerbi, C.**, Marsh, J.H., and Regan, P., 2013, How important are shear zones in deformation of deep orogenic crust?, *Geological Society of America Abstracts with Programs*, v. 45, n. 1, p.87.
 13. Shulman, D.J., **Gerbi, C.**, and Culshaw, N.G., 2013, Causes of km-scale strain localization at the margin of the Grenville Front Tectonic Zone, and Central Gneiss belt, Ontario Canada, *Geological Society of America Abstracts with Programs*, v. 45, n. 1, p. 119.
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 9. Johnson, S.E., Vel, S., Cook, A., Price, N.A., and **Gerbi, C.**, 2012, The role of mechanical and thermal fracture in strain localization in upper- and mid-crustal seismogenic fault/shear-zone systems, *Geological Society of America Abstracts with Programs*, v. 44, n. 7, p. 222.
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- distribution in the middle to lower crust, *Structural Geology and Tectonics Forum*.
7. Frieman, B.M., **Gerbi, C.**, and Johnson, S.E., 2012, The effect of microstructure and rheological heterogeneity on kinematics and bulk strength in porphyroblastic schists, *Structural Geology and Tectonics Forum*.
 6. Price, N.A., Johnson, S.E., and **Gerbi, C.**, 2012, The structure of a shear zone at the base of the seismogenic zone, Norumbega fault system, Maine, *Structural Geology and Tectonics Forum*.
 5. Frieman, B.M., Johnson, S.E., and **Gerbi, C.**, 2012, Rheological heterogeneity, strain partitioning, shear stress coupling, and kinematics in porphyroblastic schists, *Geological Society of America Abstracts with Programs*, v. 44, n. 2, p. 106.
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2. Scholarly and Creative Work in Progress

Articles in preparation or review

- Gerbi, C.**, in preparation, Relevance of understanding dynamics to explain the kinematics of plate tectonics.
- Gerbi, C.**, Johnson, S.E., Culshaw, N.G., in preparation, The concept of a stress threshold for viscous localization.
- Johnson, S.E., Vel., S.S., Song, W.J., **Gerbi, C.**, Cook, A., in preparation, The quartz alpha-beta phase transformation: implications for grain-scale stresses, microcracking and seismic wave propagation.
- Johnson, S.E., Song, W.J., Price, N.A., **Gerbi, C.**, in preparation, Persistent memory of the earthquake cycle from quartz microstructures in a deeply exhumed continental strike-slip fault.
- Johnson, S.E., **Gerbi, C.**, Song, W.J., Song, B., Vel., S.S., Cook, A., in preparation, Localization and coupling of upper- and mid-crustal deformation in seismogenic fault/shear-zone systems (this paper pursues the idea that transient brittle deformation near the FVT facilitates long term fault/shear-zone localization and stabilization of mid-crustal shear zones by essentially providing a stress (strain rate) guide)
- Melosh, B., Rowe, C.D., Smit, L., **Gerbi, C.**, Macey, P., in review, Seismic cycle feedbacks in a mid-crustal shear zone, *Journal of Structural Geology*.
- Song, B.R., Johnson, S.E., Song, W.J., **Gerbi, C.**, and Yates, M., in preparation, Coseismic damage runs deep in continental strike-slip faults.
- Song, W.J., Johnson, S.E., and **Gerbi, C.**, in preparation, Brittle co-seismic deformation of quartz: Localization near the base of the seismogenic zone.

Song, W.J., Johnson, S.E., Price, N.A., Song, B.R., **Gerbi, C.**, and West Jr., D.P., in preparation, Seismogenic cycles, quartz microstructures and localization at the frictional-to-viscous transition in an exhumed, seismogenic, strike-slip fault, Maine.
Song, W.J., **Gerbi, C.**, Johnson, S.E., and Koons, P.O., in preparation, Determining the relative strengths of rocks from deformational geometry and implications for the rheology of the lower crust.

Primary projects

1. Building on the outcome of my CAREER grant work, I am testing the idea that stress thresholds are an essential component of strain localization in the viscous Earth, analogous to fault behavior in the upper parts of the crust and glaciers. This is a general concept, with potentially far-reaching implications.
2. My major field-based project is developing a picture of the dynamics of Jarvis glacier, in Alaska. We are combining geophysical, field, and electron beam observations with numerical modeling to evaluate the role crystallographic orientation plays in resisting ice flow. Results from this project will apply to other glaciers and to ice streams draining the polar ice sheets. The ice cores we retrieved this past spring are, as far as we know, only the second set of ice cores drilled into a glacier margin.
3. In conjunction with the Alaska work, we are building a numerical toolbox to provide radar and seismic geophysicists the ability to test the sensitivity of potential field campaign designs to expected variations in ice physical properties and geometry. This should result in more effective and efficient data collection with better targeting of the scientific questions.
4. Continuing work in Ontario and New England I continue to define the relative strengths of various rock types and the causes of km-scale localization under a range of conditions in Earth's crust.
5. We continue refining and developing new analytical protocols for the electron microscope. Current work includes electron backscatter diffraction of large ice samples and quantitative compositions of fine (~1-10 micron) volcanic ash.
6. I am completing the analysis of survey data related to student understanding of plate tectonics and to the transfer of physical principles to Earth science content areas.

3. Professional Presentations (author and presenter for all listed below)

Professional presentations at conferences or outside institutions

- 2017 European Geosciences Union annual meeting (1 talk, 1 poster)
- 2016 McGill University research seminar (invited talk)
University of Southern California research seminar (invited talk)
University of California, Santa Barbara research seminar (invited talk)
- 2015 European Geosciences Union annual meeting, Vienna, Austria (1 talk, 1 poster)
Geological Society of America Northeast Section meeting (talk)
- 2014 Geological Assoc. of Canada-Mineralogical Assoc. of Canada annual meeting (talk)
- 2013 University of Massachusetts research seminar (invited talk)
University of Vermont research seminar (invited talk)
Geological Society of America Northeast Section meeting (talk)
- 2012 Structural Geology and Tectonics Forum (poster)
Kavli Frontiers of Science Chinese-American symposium (poster)
- 2011 American Geophysical Union Fall Meeting (poster)

4. Other Scholarly Activity

- Member of writing committee for 2016-2017 development of Future Directions in Tectonics report.
- Member of scientific program team for 2014 Chinese-American Kavli symposium
- Invited participant in planning meetings for a structural geology digital database
- Co-chair of sessions at 2013 and 2015 Northeast section meeting of the Geological Society of America
- Co-chair/organizer of session at 2012 Structural Geology and Tectonics Forum

Conferences and workshops attended:

Meeting	Date	Location	Scope
European Geosciences Union annual meeting	Apr 2017	Vienna, Austria	International
American Geophysical Union Fall Meeting	Dec 2016	San Francisco, CA	International
Elmer/Ice workshop (software)	Nov 2015	Copenhagen, Denmark	International
European Geosciences Union General Assembly	Apr 2015	Vienna, Austria	International
Northeast section meeting of the Geological Society of America	Mar 2015	Bretton Woods, NH	Regional
Geological Association of Canada – Mineralogical Association of Canada annual meeting	May 2014	Fredricton, NB	International
Physics and Chemistry of Ice	Mar 2014	Hanover, NH	International
Ice microstructure, rheology and physical properties workshop	Oct 2013	Dunedin, NZ	International
Tectonics/structural geology database planning meeting	May 2013	Lawrence, KS	Regional
Geological Society of America Northeast section meeting	Mar 2013	Bretton Woods, NH	Regional
Chinese-American Kavli Frontiers of Science symposium	Oct 2012	Irvine, CA	International
Structural geology and Tectonics forum	Jun 2012	Amherst, MA	National
Keck Geology Consortium annual meeting	Apr 2012	Williamstown, MA	National
American Geophysical Union Fall Meeting	Dec 2011	San Francisco, CA	International

Reviews and panel service:

- 2017 Panel: NSF-Tectonics (scheduled for Nov. 2017)
Papers (1): *Tectonics*
Proposals (8): NSF
- 2016 Papers (4): *Nature Geoscience, Earth and Planetary Science Letters, G-Cubed, Lithos*
Proposals (5): NSF
- 2015 Papers (2): *Geosphere, Journal of Structural Geology*
Proposals (5): NSF
- 2014 Papers (4): *Journal of Microscopy, Tectonics, Journal of Metamorphic Geology, Journal of Structural Geology*
Proposals (4): NSF
- 2013 Papers (2): *Journal of Metamorphic Geology, Lithosphere*
Proposals (2): NSF
- 2012 Papers (7): *Journal of Metamorphic Geology, Earth and Planetary Science Letters, Journal of Structural Geology, Geology, Tectonics*
Proposals (4): NSF
- 2011 Papers (1): *Tectonophysics*
Proposals (1): NSF

Field trips, field work, and field conferences attended:

Trip leader/topic or conference	Date	Location
Bedrock fieldwork	Aug 2017	Ontario, Canada
Geological Society of Maine field trip	July 2016	Central Maine
Bedrock fieldwork	Jul 2015	Ontario, Canada
Friends of the Norumbega field trip	Jul 2014	Central Maine
Bedrock fieldwork	Jun 2014	Ontario, Canada
Bedrock fieldwork	Jul 2012	Ontario, Canada

Laboratory administration

I continue to co-manage the electron microscopy laboratory in Bryand Global Sciences Center that was funded by a NSF Major Research Instrumentation grant. We have actively sought to incorporate a broad spectrum of projects in the lab, including those from the units of Earth and Climate Sciences, the Climate Change Institute, Anthropology, and Chemical Engineering. We accommodate external (consulting) projects, identify samples for members of the public upon request, and provide tours to visiting groups. Data from the lab appears in several published papers every year.

Research group meetings: Attend geodynamics, glaciology, and crustal studies groups

Memberships:

American Geophysical Union, Mineralogical Society of America, Geological Society of Maine

5. Statement on the Status of Candidate's Scholarly and Creative Work

All of the journals in which I have published have an international following and represent a range of specializations. Since 2012, my papers have garnered 237 citations, with increasing citations over that period. My inclusion in efforts such as the Kavli symposium, structural geology database planning, and the Future Directions of Tectonics writing committee testify to the recognition of my contributions to the community.

C. DOCUMENTATION OF RESEARCH/TRAINING GRANTS

(Grants and proposals listed below were applied for or active since October 2011)

Title	Status				Source	UMaine	Duration
	Fund.	Decl.	Pend.	Role		Amount	
NSFPLR-NERC: Thwaites Glacier sensitivity to rheological feedbacks on lateral and englacial shear		X		sr. pers.	NSF-Antarctic	~\$648,765	1 Oct 2017 – 30 Sep 2022
<p>Joint project with UK, Dartmouth, and CRREL scientists, part of a special call from NSF and NERC to study this glacier. My role was to relate geophysical and ice core measurements to anisotropy of the ice fabric and incorporate that anisotropy into numerical models.</p>							
Collaborative Research: Computational methods supporting joint seismic and radar inversion for ice fabric and temperature in streaming flow	X			PI	NSF-Antarctic	\$195,011	1 Jun 2017 – 31 May 2019
<p>I will oversee the project, which began in June and is collaborative with the University of Washington. Brings together experts in radar, seismic, and materials science to develop a toolbox for assessing radar and seismic signals passing through ice with heterogeneous physical properties.</p>							
Collaborative Research: Imprinting Concepts of Paleoclimate Research (iCPR)		X		sr. pers.	NSF DUE-IUSE	\$223,073	1 Jan 2017 – 31 Dec 2020
<p>This proposal sought to integrate undergraduates in paleoclimate research via summer schools. I was to serve as project evaluator.</p>							
Collaborative Research: Influence of natural ice microstructure on rheology in general shear: in-situ studies in the Alaska Range	X			PI	NSF-Arctic	\$420,937	1 Jan 2016 – 31 Dec 2018
<p>I oversee the project, which evaluates whether crystallographic fabric in the margins of streaming ice plays a significant role in its force balance. I am directly involved in the crystallographic analysis and numerical modeling.</p>							
Origin and vertical extent of damage zones around continental strike-slip faults	X			Co-PI	NSF-Tectonics	\$314,337	1 Feb 2014 – 31 Jan 2018
<p>This project aims to describe and quantify the degree and effect of microstructural damage around large strike-slip faults. I oversee the electron beam data collection and analysis and collaborate on the numerical modeling.</p>							
REU Site: A multidisciplinary research experience on Denali glaciers, their landscape impact, and climate		X		sr. pers.	NSF EAR-REU	\$861,524	1 April 2015 – 31 March 2019
<p>This program would provide undergraduates a research experience in Denali National Park, combining paleoclimate studies with dissemination to the public. My role was as program evaluator.</p>							

Building Rural STEM Educator Capacity through Partnership	X	sr. pers.	NSF EHR	\$299,998	1 September 2014 – 31 August 2015
Provided professional development for pre- and in-service K-12 teachers. I developed and ran Earth Science components.					
Collaborative research: Developing an Antarctic tephra database for interdisciplinary paleoclimate research (AntT)	X	co-PI	NSF Antarctic Research	\$365,095	1 July 2012 – 31 July 2017
Project sought to build a database of tephra characteristics as recorded in ice cores. My role was to assist with the electron beam characterization of the samples.					
CAREER: Identifying the dominant controls on strain localization in the lower crust	X	PI	NSF Tectonics	\$475,642	15 April 2012 – 31 Mar 2018
Sole PI. This project seeks to identify the major reasons that large shear zones form in deep orogenic crust. I have overseen all aspects of the project, including field work, electron beam data collection, and numerical modeling.					
Integrated analytical-computational analysis of microstructural influences on seismic anisotropy	X	co-PI	NSF Tectonics	\$298,171	6 Jan 2011 – 31 Dec 2014
Project used a combination of analytical and numerical modeling strategies to characterize the seismic anisotropy signature of various rock types and microstructures. My primary roles were to oversee the collection of data from natural samples and consult on the software development.					
Quantifying syntectonic weakening in deep orogenic crust	X	PI	NSF-Tectonics	\$238,686	1 June 2008 – 30 Jun 2012
Sole PI. This study characterized a large shear zone in Ontario, identifying the mechanical causes leading to its formation.					

D. DOCUMENTATION OF DEPARTMENT/CAMPUS/COLLEGE SERVICE

Percentage of time devoted to service: no specified assignment

Department

Graduate coordinator (2016-present). I am in my second year as the SECS graduate coordinator, which also entails being the chair of the graduate committee and representative to the Graduate Board.

Peer review and policy committee (member since 2014 – except during sabbatical Spring 2016 – chair, Fall 2015). In addition to the regular reviews for faculty in SECS and the addition of several new research faculty, we revised the peer review guidelines in Fall 2015.

Website development (May 2009-present).

My role was/is to perform most of the site administration, including the transition to the current format, posting news items, and training new users.

Chair, Edward Sturgis Grew Professorship in Petrology and Mineralogy search committee.

I chaired the 2014-2015 search committee for a new faculty member, resulting in the hiring of Alicia Cruz-Uribe.

Curriculum development and assessment. After serving as chair of the curriculum committee through 2012, I remained part of the committee through 2015. One of the major curriculum initiatives during the past several years fell outside the committee structure in open meetings about evaluating and modifying the master curriculum. I participated regularly in those discussions. A second initiative, program assessment, began as an outgrowth of the curriculum committee, but then became formalized in the committee structure. I was part of the early efforts to develop the program assessment, and wrote the first draft plan.

Space management. In 2014-2015, we developed plans for possible renovation of Bryand to accommodate larger classes. I led the effort to draft floor plans and obtain estimates of the work from Facilities.

College

NSFA curriculum committee (through May 2012)

Reviewed course proposal and modifications and any other proposals brought to the committee.

University

Honors Council (November 2008-August 2017); *NSFA Honors Secretary*

Regular meetings for the Dean to seek advice on issues related to Honors College academics and administration. As the NSFA Secretary, I was the point person for students from the College seeking information about the Honors program.

Honors College curriculum committee (2016-present)

In addition to participating in regular discussions about issues arising, I participated in broader discussions about the structure of the honors curriculum and potential role of science courses in the core.

Peer committees

I served or serve on the following peer committees for faculty outside SECS, in my role as a member of the RiSE Center and Honors College:

- 2017 to present – general Honors peer committee
- 2016 to present – Sally Malloy (Honors-MBS; *chair*)
- 2015 to present – Josh Roiland (Honors-CMJ)
- 2015 – Michelle Smith (SBE; promotion and tenure review)
- 2013 – Mackenzie Stetzer (Physics and Astronomy)

RiSE Center

I have participated in various ad hoc and standing committees for the RiSE Center since prior to receiving tenure. Examples include summer work with K-12 teachers on curriculum development, running professional development sessions, leadership team meetings, and participating on the curriculum review board.

E. DOCUMENTATION OF PUBLIC SERVICE

Mentor for the Summer 2017 Mandela Program, which brings young African leaders to the United States.

Visited 4th grade classroom for presentation/discussion about plate tectonics (Spring 2017).

Presented at the Maine high school physics and physical science teachers meeting (May 2015)

Organized and ran a component of the Maine Science Olympiad (Spring 2014)

Provide occasional tours of scanning electron microscope lab to school groups (~2-4 per year).

Provide occasional consultation with members of the general public about mineral or rock identification (~5 per year).

F. DOCUMENTATION OF SPECIAL RECOGNITION/AWARDS

- NSFA Graduate Mentor Award (2014)
- Selected as a Kavli Frontiers of Science Fellow (2012)
- Electron microscope laboratory highlighted in EDAX industry newsletter (Fall 2012 and 2016)

IV. EVALUATIONS OF TEACHING

A. STUDENT EVALUATIONS OF TEACHING

This summary has been verified by

Title _____ Date _____

1. Summary of quantitative student evaluations: see following page

In the past four years, I have received above-average evaluations for all tabulated questions in a course ten times; overall, 84% of my tabulated evaluations are above the college averages. Not including ERS200, a team-taught course that commonly resulted in lower scores for all instructors, over 90% of my scores are above the college average.

SUMMARY OF COURSES TAUGHT & STUDENTS' EVALUATIONS AT UMAINE

Term and Year	Course		Section Enrollment	Mean Evaluation Rating														
	ID Number	Credits (Load)		This Course*					College Average									
				Q13	Q22	Q9	Q15	Q5	Q19	N**	Q13	Q22	Q9	Q15	Q5	Q19		
Fall 2011	ERS200	4 (0.75)	~17	4.88	4.86	5.00	4.86	5.00	5.00	5.00	8	4.23	4.12	4.57	4.26	4.39	4.40	
Fall 2011	ERS578	4	10	4.78	4.33	5.00	4.67	5.00	4.56	9	4.55	4.31	4.78	4.41	4.49	4.41		
Spring 2012	ERS330	4	25	4.85	4.70	4.95	4.61	4.95	4.85	20	4.23	4.12	4.57	4.26	4.39	4.40		
Spring 2012	ERS602-001	1	10	4.90	4.60	5.00	4.10	4.90	4.78	10	4.55	4.31	4.78	4.41	4.49	4.41		
Fall 2012	ERS200	4 (0.75)	~17	4.31	4.38	4.54	4.54	4.69	4.62	13	4.35	4.06	4.64	4.21	4.36	4.36		
Fall 2012	ERS602-007	3 (1.5)	7	5.00	4.71	5.00	4.86	5.00	4.71	7	4.52	4.31	4.74	4.51	4.55	4.40		
Fall 2012	SMT503	3	10	4.90	4.60	4.90	4.90	4.90	4.70	10	4.52	4.31	4.74	4.51	4.55	4.40		
Spring 2013	ERS451	3	13	4.77	4.54	5.00	4.92	4.92	4.85	13	4.35	4.06	4.64	4.21	4.36	4.36		
Spring 2013	ERS602-001	1	8	4.88	4.88	5.00	4.25	4.88	4.38	8	4.52	4.31	4.74	4.51	4.55	4.40		
Fall 2013****	ERS200	4 (0.75)	~17	3.53	1.00	3.87	1.50	4.80	2.00	15	4.40	4.11	4.64	4.24	4.36	4.38		
Fall 2013	ERS602-0008	2	3	4.75	4.50	5.00	5.00	5.00	4.75	4	4.57	4.38	4.77	4.51	4.63	4.54		
Spring 2014	ERS581	1	4	5.00	3.50	5.00	4.00	5.00	4.50	4	4.57	4.38	4.77	4.51	4.63	4.54		
Spring 2014	ERS602-006	3	4	5.00	4.83	5.00	5.00	5.00	4.60	6	4.57	4.38	4.77	4.51	4.63	4.54		
Fall 2014	ERS200	4 (0.75)	~17	4.25	3.75	4.67	4.67	4.58	4.67	12	4.43	4.15	4.65	4.30	4.43	4.41		
Fall 2014	ERS579	1	8	4.71	4.71	4.86	5.00	4.86	4.43	7	4.64	4.42	4.74	4.54	4.59	4.49		
Fall 2014	SMT503	3	11	4.67	4.44	5.00	4.78	4.67	4.44	9	4.64	4.42	4.74	4.54	4.59	4.49		
Spring 2015	ERS451	3	11	5.00	4.73	5.00	4.82	4.91	5.00	11	4.43	4.15	4.65	4.30	4.43	4.41		
Spring 2015	HON 324	3	7	4.86	4.43	5.00	***	4.71	***	7	4.43	4.15	4.65	4.30	4.43	4.41		
Spring 2015	ERS581	1	5	4.80	4.40	5.00	4.40	5.00	4.20	5	4.64	4.42	4.74	4.54	4.59	4.49		
Fall 2015	ERS200	4(1)	~17	4.31	4.46	4.23	4.69	4.31	4.85	13	4.43	4.15	4.69	4.31	4.42	4.43		
Fall 2015	ERS579	3	3	5.00	4.67	5.00	4.33	5.00	5.00	3	4.50	4.41	4.80	4.48	4.57	4.53		
Fall 2016	ERS151	4	20	4.80	4.20	5.00	4.10	4.80	4.45	20	4.34	3.85	4.59	3.91	4.28	4.21		
Fall 2016	ERS602	2(1)	8	4.71	4.43	4.86	4.29	5.00	4.57	7	4.64	4.47	4.83	4.57	4.60	4.61		
Fall 2016	SMT503	3	15	4.81	4.71	5.00	4.79	5.00	4.85	15	4.64	4.47	4.83	4.57	4.60	4.61		
Spring 2017	ERS451	3	12	4.78	4.78	4.89	4.33	4.78	4.67	9	4.45	4.15	4.72	4.31	4.45	4.43		
Spring 2017	ERS581	1	5	5.00	4.80	5.00	5.00	5.00	4.60	5	4.64	4.47	4.83	4.57	4.60	4.61		

* Bold indicates evaluation better than college average.

** Number of students in this course section responding.

*** Question not asked on Honors evaluation form

**** Fall 2013 ERS200 Questions 15, 19, and 22 had only one or two student responses

Question 13: Overall, how would you rate the instructor?

Question 22: What was your overall rating of this course?

Question 9: Did the instructor show respect for the questions and opinions of the students?

Question 15: How would you rate the subject matter of this course?

Question 5: How much were students encouraged to think for themselves?

Question 19: Were students required to apply concepts to demonstrate understanding?

2. Summary of qualitative student evaluations

Fall 2011

ERS200: “Always answers que[s]tions, simplifies concepts, and makes understanding easier!”

ERS578: “Great class, I learned a lot of information attending a class with graduate students in which class time was often spent discussion ideas within the subject matter”

Spring 2012

ERS602: “Instructor was knowledgeable, helpful and enthusiastic about the subject matter. Material was explained well and critique of students work was very helpful.”

ERS330: “Chris is a great teacher whose interest in great teaching is extremely evident.”
“Chris is an excellent teacher with a large knowledge base. He is creative in presenting concepts. He always was very genuine in answering questions & caring about the quality of his work.”

Fall 2012

ERS200: “Was always willing to answer questions. Looking forward to other classes with him.”

ERS602: “I wish I had taken this course earlier in my academic career, before I burned out on courses. Chris is very talented at making people think. That requires a great deal of work and knowledge.”

Spring 2013

ERS451: “Chris is clearly well involved with education research and it shows. The way he sets his class and interacts with students is conducive to deeper understanding of the material. A great teacher in this class.”

Fall 2013

ERS602: “This was an excellent course. The series of papers we read were very helpful and I feel that rthey really allowed me to deepen my understanding of this subject.”

Fall 2014

ERS579: “This class was great because I was able to broaden my perspective on my research and study. I realized again all fields of science are connected and understanding different points of view on my research is important.”
“It was a great class and I especially like the inten[t]ion of the course to explore critical issues, fundamental core concepts, and big ideas in Earth science.”

Spring 2015

HON324: “Thank you for a great semester”

ERS451: “Great class, very interesting and worth taking!”
“Chris is a fantastic teacher who always focuses on the student's knowledge.

Students are really required to think for themselves, and I have tried to emulate this great teaching style in my assistant teaching job. I'm glad Chris teaches at this university.”

“One of the best classes I've taken at the university. The teaching style gets students engaged and involved.”

“Tectonics is unique in that thoughtful discussion, intelligent discourse, and constant question are the main method of learning instead of being talked at for 50 minutes. Which is excellent.”

Fall 2015

ERS200: “I learned a lot from this class and enjoyed it.”

ERS579: “Great class. Assignments were engaging + allowed me to explore relevant rheological issues without being overwhelming or beyond understanding.”
“I thoroughly enjoyed the class. It was made relatable to my subject of study”

Spring 2017

ERS451: “Loved this class. Definitely one of my favorites. I learned a lot + loved your teaching style”

ERS581: “Dr. Gerbi consistently provided our class with easily-digestible assignments and stunningly insightful comments on our work. He has a gift for breaking down complex issues into easily-understood components and delivering feedback with respect, clarity, and thoughtfulness.”

“Great course. Extremely valuable....Awesome feedback from professor & classmates.”

B. OTHER EVALUATIONS OF TEACHING

1. Peer evaluations of teaching

From 2016 four-year peer review letter: “Chris takes his teaching seriously, and is constantly striving to improve his effectiveness and that of the School and a whole.....not only is Chris knowledgeable and effective in teaching, he is also deeply concerned with “great teaching”...”

2. Teaching awards

Not applicable

3. Teaching of graduate students in the classroom and thesis advising

One measure of graduate mentoring is the career path of past students. My advisees and co-advisees who have graduated in the past six years are in the following positions:

Deborah Shulman	Resource coordinator, RiSE Center, UMaine
Stephanie Mills	In Ph.D. program, UMaine
Maura Foley	Completed M.S.T. in 2017; now teaching at an independent school in Connecticut
Ben Frieman	Completed Ph.D. at Colorado School of Mines
Calvin Mako	In Ph.D. program at Virginia Tech

I view the number of graduate committees (6 Ph.D. and 10 M.S./M.S.T.) on which I have served since Fall 2011 as a sign that current and past students appreciate my efforts and recommend me to their peers.

Student publications

In concert with our program, I strongly encourage students to publish their work. As noted in the list of publications above, ten published or in press articles and seven manuscripts in preparation include a student author. The student is first author on six of the published papers and four of the papers in preparation.