

Curriculum Vitae

Rebecca A. Lange
Department of Earth and Environmental Sciences
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Education

1983 B.A. in Geology, University of California, Berkeley
1989 Ph.D. in Geology, University of California, Berkeley

Professional Positions

1989-1991 Postdoctoral Research Associate, Princeton University
1991-1997 Assistant Professor, University of Michigan
1997-2004 Associate Professor, University of Michigan
2004-present Professor, University of Michigan
2010-2014 Department Chair, University of Michigan
2017-present Alexander N. Halliday LSA Collegiate Professor

Honors and Elected Office

1995 F. W. Clarke Medal, Geochemical Society
1997 Class of 1923 Memorial Teaching Award, University of Michigan
2003 College of LSA Excellence in Education, University of Michigan
2007 Fellow, Mineralogical Society of America
2013 E. Ingerson Lecturer, Geochemical Society
2014 Fellow, Geochemical Society and European Association of Geochemistry
2015-2017 President (Vice- and Past-), Mineralogical Society of America

Professional Service

1993-1996 Publications Committee Member, Mineralogical Society of America
1995-1998 Programs Committee, Geochemical Society
1995-1998 Associate Editor, *American Mineralogist*
1996 Committee to review the NSF Petrology and Geochemistry Program
1998-2001 Books Board Editor, American Geophysical Union
1999-2000 MSA Award Committee, Mineralogical Society of America
2001-2003 Bowen Award Committee, Chair ('02,'03), American Geophysical Union
2003-2004 NSF Panel for Petrology and Geochemistry Program
2000-2005 Treasurer, Geochemical Society
2003-2006 Council Member, Mineralogical Society of America
2005-2007 Associate Editor, *Journal of Geophysical Research (Solid Earth)*
2011 NSF Panel: Committee of Visitors
2011 DeptReview Committee, Space & Earth Sciences, U. Washington, Seattle
2011-2013 Clarke Medal Committee, Geochemical Society, Chair 2013
2012 Dept Review Committee, Geological Sciences, U. Oregon, Eugene
2011-2013 Bowen Award Committee, American Geophysical Union
2015 Dept Review Committee, Carnegie Geophysical Laboratory, April 22-24
2016 Dept Review Committee, Geological Sciences, U. North Carolina, Chapel Hill
2017-2019 Geological Society of America: review of graduate student proposals
2019 Dept Review Committee, Earth Sciences, U. Minnesota, Minneapolis

2021-2023 Principal Editor (Petrology), *Elements*
2021 Dept Review Committee, Dept of Earth Sciences, University of Toronto, Canada

University Service

1992, 1994 Career Symposium for Graduate Students - Rackham
1995 Rackham Predoctoral Fellowship Committee
1997 Joint Student-Faculty LSA Committee on Undergraduate Clubs
1999 ROTC subcommittee to LSA Executive Committee
1998-2001 LSA Curriculum Committee
2004-2006 LSA Dean's Advisory Committee on Gender in the Natural Sciences
2004-2007 Faculty Senate Assembly
2007-2009 LSA Nominating Committee (Chair, 2009)
2012 EMAL internal review committee
2012-2014 Provost Committee: Global Challenges Third Century Initiative
2015 NextProf Committee (co-organizer)
2015-2017 Advisory Committee for ADVANCE
2016-2018 LAUNCH committees for ADVANCE
2018 LSA Nominating Committee (Chair)
2012-2021 Presidential Postdoctoral Review Committee
2016-2021 NextProf Committee (lead organizer)
2021 LAUNCH committee member (Physics faculty member)

Departmental Service

1991-1996 Ombudsperson
1991-2008 Supervisor of Thin Section Laboratory
1993-1995 Executive Committee
1995-1996.1 Departmental Lecture Series
1997-2000 Faculty Liaison to Undergraduate Geology Club
1999 Organized 10 yr Alumni Reunion at Camp Davis
1999-2001 Executive Committee
2001 Faculty Search Committee (Marine Geologist)
2000-2004 Undergraduate Advisor
2002-2004 Curriculum Committee, member
1997-2005 Director, Camp Davis field station
2005-2006 Executive Committee
2006-2007 Turner Postdoctoral Fellow Committee (Chair, 2007)
2006 Promotions Committee (Udo Becker)
2006-2007 Faculty Award Nominations
2008-2009 Promotions Committee (Jackie Li)
2007-2010 Associate Chair for Graduate Affairs; Curriculum Committee Member
2015 Promotions Committee (Jackie Li)
2015-2016 Faculty Award Nominations Committee
2016 Promotions Committee (Rose Cory and Ingrid Hendy)
2016-2018 Undergraduate Advisor
2016-2017 Senior Mentor (Rose Cory)
2016-present Senior Mentor (Selena Smith)
2018 Acting Chair for Promotions of Jeff Wilson and Brian Arbic
2018-2019 Faculty Search Committee, member (Geophysics and Geochronology)
2016-present EMAL oversight committee
2019-2021 Faculty Award Nominations

Invited Lectures (other Universities)

1. University of Wisconsin, Madison, WI, April 1989
2. Purdue University, Lafayette, IN, April 1989
3. California Institute of Technology, Pasadena, CA, May 1989
4. Northwestern University, Evanston, IL, October 1989
5. University of California, Santa Cruz, January 1990
6. Harvard University, Cambridge, MA, March 1990
7. University of Oregon, Eugene, OR, October 1991
8. Princeton University, Princeton, NJ, April 1992
9. Michigan State University, East Lansing, MI, May 1992
10. University of Michigan, Condensed Matter Physics Group, March, 1992
11. University of New Mexico, Albuquerque, NM, November 1994
12. New Mexico Institute of Technology, Socorro, NM, November 1994
13. University of Washington, Seattle, WA, January 1995
14. Case Western Reserve University, Cleveland, OH, February 1995
15. University of Puerto Rico, Mayaguez, February 1995
16. Northern Illinois University, DeKalb, IL, September, 1995
17. Smith College, Northampton, MA, February, 1996
18. University of Cincinnati, Cincinnati, OH, April, 1996
19. University of California, Los Angeles, CA, April 1996
20. University of Oregon, Eugene, OR, November 1996
21. Arizona State University, Tempe, AZ, April 1997
22. Bowling Green State University, Bowling Green, OH, November, 1997
23. University of Arizona, Tucson, AZ, September, 1999
24. University of New Mexico, Albuquerque, NM, November, 2000
25. University of Illinois, Chicago, IL November, 2000
26. Yale University, New Haven, CT, March, 2001
27. University of Ottawa, Ottawa, Canada, March, 2001
28. University of Minnesota, Minneapolis, MN, April 2001
29. Michigan Technological University, Houghton, MI, April 2001
30. University of Chicago, Chicago, IL, April 2001
31. University of Hannover, Hannover, Germany, May 2001
32. Boston University, Boston, Massachusetts, January, 2002
33. Harvard University, Boston, Massachusetts, April, 2002
34. Lamont Doherty Geological Observatory, New York, March 2004
35. Michigan State University, East Lansing, Michigan, September, 2004
36. University of Washington, Seattle, Washington, October, 2005/April 2006
37. Stanford University, Stanford, California, April 10, 2006
38. University of Toronto, Ontario, Canada, November 17, 2006
39. University of California, Davis, May 9, 2007
40. University of Oregon, Eugene, Oregon, March 5, 2008
41. Case Western Reserve, Cleveland, Ohio, April 9-10, 2008
42. Smithsonian Institution, Washington D.C., June 3, 2009
42. Johns Hopkins University, February 17, 2011
43. Carnegie Geophysical Laboratory, Washington D.C., May 2, 2011
44. University of Minnesota, Minneapolis, MN, Oct. 3, 2013
45. Tulane University, Tulane, LA, Nov. 1 2013
46. United States Geological Survey, Menlo Park, CA March 31, 2015

47. Washington University, St. Louis, MO Sept. 10, 2015
48. Wayne State University, Detroit, March 30, 2016
49. Virginia Polytechnic Institute, Blacksburg, VA April 15, 2016
50. Indiana University, Bloomington, IN, April 25, 2016
51. Carnegie Geophysical Laboratory, Washington D.C., Nov. 21, 2016

Community Outreach

- 1993, May, Guest Lecture, *Monroe High School Senior Graduation Ceremony*
1997, March, Faculty Lecturer for Alumni trip to Costa Rica
1997, May, Lecture on Volcanoes to *Ann Arbor Women's Club*
2000, November, Lecture on Volcanoes to *Seniors Learning in Retirement*
2000, May, Lecture on Volcanoes to *Glacier Way Nursing Home*
2001, February, Lecture on Volcanoes to *Ann Arbor Farm and Garden Assoc.*
2002, February, Lecture on Volcanoes to *Ann Arbor Science Research Club*

Research Grants – External

22. National Science Foundation

The origin of voluminous, hydrous, high-SiO₂ rhyolites at Long Valley, CA: high-resolution (spatial and temporal) numerical thermal models and new experimental constraints
Lead P.I. = Rebecca A. Lange (co-PI = Eric Hetland)
4/1/2019-3/31/2022: \$389,430 to UM

21. National Science Foundation

Alkaline-Earth Carbonate Melts at Deep Earth Conditions
Co-P.I. = Rebecca A. Lange (Lead PI= Aaron Wolf, co-PI = Jie Li)
4/1/2018-3/31/2021: \$680,031 to UM

20. National Science Foundation

Experimental calibration of the olivine-melt Ni thermometer under hydrous conditions: application to hygrometry, oxybarometry and olivine phenocryst growth rates
P.I. = Rebecca A. Lange
1/1/2016-12/31/2018: \$340,000 to UM

19. National Science Foundation

Extension of plagioclase-liquid hygrometer to rhyolites and Sr and Ba partitioning studies: new phase equilibrium experiments on hydrous rhyolite
P.I. = Rebecca A. Lange
1/1/2013-12/31/2015: \$355,191 to UM

18. National Science Foundation

Collaborative Research: High Pressure Experimental Melt Density
P.I. = Rebecca A. Lange
5/1/2009-4/30/2012: \$317,319 to UM

17. National Science Foundation

The thermodynamic properties of MgCO₃-CaCO₃-FeCO₃-Na₂CO₃-K₂CO₃-Li₂CO₃ liquids: new measurements
P.I. = Rebecca A. Lange
7/1/2007-6/30-/2010: \$214,467

16. National Science Foundation
SOTA 2007 and GSA Field Forum in Chile: Support for graduate students and Latin American participation
P.I. = Rebecca A. Lange (co-PIs: Anita Grunder and Rosemary Hickey-Vargas)
5/1/2006-4/30/2007: \$50,000
15. National Science Foundation
Development of an ultrasonic acoustic interferometer for silicate liquids in an internally heated pressure vessel
P.I. = Rebecca A. Lange
9/1/2005-8/31/2008: \$281,284
14. National Science Foundation
Frequency sweep acoustic interferometry: measurements of silicate melt compressibility and density at high temperature and high pressure
P.I. = Rebecca A. Lange
1/1/2005-12/31/2007: \$400,000
13. National Science Foundation
Volcanic time scales, eruption rates, and compositional diversity at a continental arc
P.I. = Rebecca A. Lange (co-P.I. = Chris M. Hall)
7/1/2004-6/30/2007: \$288,015
12. National Science Foundation
The K' of highly compressible liquids
P.I. = Rebecca A. Lange
7/1/2003-6/30/2006: \$178,000
11. National Science Foundation
Ultrasonic velocity measurements on silicate liquids
P.I. = Rebecca A. Lange
1/1/2001-12/31/2003: \$247,851
10. National Science Foundation
Quantification of the eruptive flux along the western Mexican volcanic arc
P.I. = Rebecca A. Lange (co-P.I. = Chris M. Hall)
1/1/2000-12/31/2003; \$238,230
9. National Science Foundation
Acquisition of a new electron microprobe at the University of Michigan
P.I. = Eric Essene (co-PIs= Rod Ewing, Rebecca Lange, Youxue Zhang)
1/1/2000-12/31/2001; \$540,630
8. National Science Foundation
U.S.-Germany cooperative research: Thermodynamic and transport properties of silicate melts and glasses.
P.I.s = Youxue Zhang (co-PI = Rebecca A. Lange)
4/1/1999-9/21/2001; \$21,260
7. National Science Foundation
Acquisition of an ultra high temperature ultrasonic acoustic interferometer

P.I. = Rebecca A. Lange
8/1/99-7/31/01; \$22,410

6. National Science Foundation
The transport properties of volatile-bearing silicate melts.

P.I. = Rebecca A. Lange
7/1/97-6/30/00; \$164,413

5. National Science Foundation
Acquisition of a rapid-quench cold-seal pressure apparatus

P.I. = Rebecca A. Lange
1/1/96-12/31/96; \$16,610

4. National Science Foundation CAREER Award (first year of CAREER awards)
The buoyancy drive of carbonatite melts in the lithosphere

P.I. = Rebecca A. Lange
7/1/95-6/30/98; \$125,000

3. National Science Foundation
The density and compressibility of hydrous silicate liquids

P.I. = Rebecca A. Lange
8/1/94-7/31/96; \$105,000

2. National Science Foundation
Acquisition of a differential scanning calorimeter and viscometer/dilatometer

P.I. = Rebecca A. Lange
6/1/93 - 5/31/94; \$33,060

1. National Science Foundation
Silicate melt density: effect of Al^{3+} , Fe^{3+} , Ti^{4+} coordination change

P.I. = Rebecca A. Lange
1/1/93-12/31/94; \$90,000

Students/Postdocs Supervised (100% unless otherwise indicated)

Undergraduate Honors Theses:

Laura Forman	1996 (University of Pennsylvania law school)
Martin Howrylak	1998 (University of Michigan business school)
Emily Johnson	2002 (PhD student at University of Oregon)

Masters Students:

Robert Cooper (50 %)	1995 (MBNA bank manager, Maine)
Fred Ochs	1996 (teaches math/chemistry at community college, WI)
Kate Lewis-Kenedi	2003 (PhD student at Duke University)
Travis Tenner	2005 (PhD student at University of Minnesota)
Ryan Gabelman	2017
Bryanne Gordon	current

Ph.D. Students:

Sharon Feldstein	1998 (Full-time mother of four; living in Israel)
Jean Tangeman	1998 (Research scientist at 3M corporation)
Qiong Liu	2005 (Associate Professor at Peking University, China)

Holli Frey	2005 (Associate Professor at Union College, NY)
Steven Ownby	2007 (Scientist at Shell Oil Corporation, Houston, TX)
Stephen Crabtree	2010 (Asst. Prof., University of Minnesota, Morris)
Xuan Guo	2012 (Postdoctoral Fellow at University of Science and Technology, China)
Laura Waters	2013 (Assistant Professor, New Mexico Tech, Socorro, NM)
Xiaofei Pu	2018 (Research Scientist, Idaho National Laboratory)
Sean Hurt	2018 (Assistant Professor, Hot Springs College, AK)
James Jolles	2020 (Research associate, University of Michigan)
Meredith Calegario	2020 (Postdoctoral Fellow, University of Michigan)
Sarah Brehm	2021 current (defense date: May 2021)
Juliana Mesa	2021 current (defense date: July 2021)

Post-doctoral Fellow:

Yuhui Ai	2003-2005 (scientist at EdgeTech Inc., Florida)
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Member, Ph.D. Thesis Committee

1. Sharon Feldstein, Department of Geological Sciences (chair; completed 1998)
2. Jean Tangeman, Department of Geological Sciences (chair; completed 1998)
3. Cassie Paslick, Department of Geological Sciences (member, completed 1995)
4. Jason Cooley, Department of Physics (member; completed 1997)
5. Liping Wang, Department of Geological Sciences (completed 1999)
6. Peter Tropper, Department of Geological Sciences (completed 1999)
7. Dan Barfod, Department of Geological Sciences (completed 1999)
8. Bob Klein, Department of Geological Sciences (member, completed 1996)
9. Andrew Darling, Department of Archeology/Anthropology (member; completed 1997)
10. Pinbo Zhou, Department of Geological Sciences (member; terminated 2001)
11. Xiaozhong Luo, Department of Geological Sciences (member, completed 1999)
12. Libby Preuher, Department of Geological Sciences (completed 1999)
13. Donggao Zhao, Department of Geological Sciences (member, completed 1999)
14. Weiming Zhou, Department of Geological Sciences (member, completed 2000)
15. Arlo Weil, Department of Geological Sciences (member, completed 2001)
16. Ted Clark, Department of Chemistry (member; completed 1997)
17. Yang Liu, Department of Geological Sciences (member; completed 2002)
18. John Carlson, Department of Physics (member; completed 2002)
19. Casey Donahue, Department of Geological Sciences (member; completed 2002)
20. Holli Frey, Department of Geological Sciences (chair; completed 2005)
21. Chuck Carrigan, Department of Geological Sciences (member; completed 2004)
22. Zeb Page, Department of Geological Sciences (member; completed 2005)
23. Qiong Liu, Department of Geological Sciences (chair; completed 2005)
24. Katie Davis, Department of Geological Sciences (member; completed 2005)
25. Halan Wang, Department of Geology, U. of Toronto (external member, completed 2006)
26. Feng Wang, Department of Physics (member, completed 2007)
27. Steven Ownby, Department of Geological Sciences (chair, completed 2007)
28. Hejiu Hui, Department of Geological Sciences (member, completed 2007)
29. Yang Chen, Department of Geological Sciences (member; completed 2008)
30. Ni Sun, Department of Geological Sciences (member, completed 2008)
31. Nico DeKoker, Department of Geological Sciences (member; completed 2008)
32. Matthew Mannon, Department of Geological Sciences (member; completed 2008)
33. Stephen Crabtree, Department of Geological Sciences (chair; completed 2010)

34. Sarah Rilling, Department of Geological Sciences (member; completed 2009)
35. John Naliboff, Department of Geological Sciences (member; completed 2009)
36. Christopher Stefano, Department of Geological Sciences (member; completed 2010)
37. Xuan Guo, Department of Geological Sciences (chair; completed 2012)
38. Laura Waters, Department of Earth and Environmental Sciences (chair; completed 2013)
39. Elizabeth Tanner, Department of Earth and Env. Sciences (member; completed 2014)
40. Jiachao Liu, Department of Earth and Environmental Sciences (member; completed 2015)
41. Tom Hudgins, Department of Earth and Environmental Sciences (member; completed 2015)
42. Laura Bilenker, Department of Earth and Environmental Sciences (member; completed 2015)
43. Zeyu Li, Department of Earth and Environmental Sciences (member; completed 2015)
44. Petr Yakovlev, Department of Earth and Environmental Sciences (member; completed 2015)
45. Yi Yu, Department of Earth and Environmental Sciences (member; completed 2017)
46. Peng Ni, Department of Earth and Environmental Sciences (member; completed 2017)
47. Xiaofei Pu, Department of Earth and Environmental Sciences (chair; completed 2018)
48. Sean Hurt, Department of Earth and Environmental Sciences (chair; completed 2018)
49. Nikita La Cruz, Department of Earth and Environmental Sciences (member; completed 2019)
50. James Jolles, Department of Earth and Environmental Sciences (chair; completed 2020)
51. Meredith Calogero, Dept of Earth and Environmental Sciences (co-chair; completed 2020)
52. Sarah Brehm, Department of Earth and Environmental Sciences (chair)
53. Juliana Mesa, Department of Earth and Environmental Sciences (chair)
54. Sha Chen, Department of Earth and Environmental Sciences (member)

Teaching Evaluations (Q1: quality of course, Q2: quality of lecturer); scale 1-5 (5=excellent)

Year	Term	Number	Type	Name	Credits	Resp.	Enrol.	Q1	Q2
1992	Winter	GS-310	Lecture/Lab	Petrology	4	50%	13	4.2	4.1
1992	Summer	GS-440	Field	Field Camp	8	33%	17	4.5	4.4
1992	Fall	GS-205	Lecture	Dynamic Earth	2	50%	49	4.1	4.3
1993	Winter	GS-507	Lecture/Lab	Adv. Igneous	4	100%	4	5.0	4.8
1993	Winter	GS-205	Lecture	Dynamic Earth	2	50%	69	3.3	3.8
1993	Summer	GS-440	Field	Field Camp	8	33%	21	3.8	4.1
1993	Fall	GS-107	Lecture	Earth.&Volc.	1	100%	121	4.2	4.3
1994	Winter	GS-205	Lecture	Dynamic Earth	2	50%	54	3.7	3.9
1994	Winter	GS-455	Lecture/Lab	Determ. Methods	4	50%	4	4.4	4.6
1994	Winter	GS-310	Lecture/Lab	Petrology	4	50%	14	4.1	4.4
1994	Summer	GS-440	Field	Field Camp	8	33%	12	4.0	4.8
1994	Fall	GS-107	Lecture	Earth.&Volc.	1	100%	125	3.9	4.0
1995	Winter	GS-205	Lecture	Dynamic Earth	2	100%	56	3.9	4.2
1995	Winter	GS-455	Lecture/Lab	Determ. Methods	4	11%	7	4.3	4.5
1995	Winter	GS-507	Lecture/Lab	Adv. Igneous	4	100%	4	4.8	5.0
1995	Summer	GS-440	Field	Field Camp	8	33%	22	4.0	4.3
1996	Winter	GS-205	Lecture	Dynam. Earth	2	100%	54	3.9	4.1
1996	Winter	GS-455	Lecture/Lab	Determ. Methods	4	11%	6	4.8	4.8
1996	Winter	GS-310	Lecture/Lab	Petrology	4	100%	8	4.2	4.3
1996	Summer	GS-440	Field	Field Camp	8	33%	22	3.6	4.2
1996	Fall	GS-271	First-Yr Sem.	Natural Hazards	3	100%	25	4.3	4.3
1997	Winter	GS-205	Lecture	Dynam. Earth	2	100%	49	4.0	4.4
1997	Winter	GS-455	Lecture/Lab	Determ. Methods	4	50%	8	4.0	4.1
1997	Winter	GS-507	Lecture/Lab	Adv. Igneous	4	100%	4	4.9	4.9
1997	Summer	GS-440	Field	Field Camp	8	50%	13	4.4	4.9
1997	Fall	GS-455	Lecture/Lab	Determ. Methods	4	50%	5	4.5	4.9
1998			<i>SABBATICAL LEAVE</i>						

Year	Term	GS-Number	Lecture/Lab Type	Petrology Name	Credits	Resp.	Enrol.	Q1	Q2
1999	Winter	GS-310	Lecture/Lab	Petrology	4	100%	11	4.4	4.4
1999	Winter	GS-507	Lecture/Lab	Adv. Igneous	4	100%	4	3.8	4.0
1999	Winter	GS-107	Lecture	Earth.&Volc.	1	100%	431	3.6	3.9
1999	Fall	GS-107	Lecture	Earth.&Volc.	1	100%	142	4.0	4.3
1999	Fall	GS-147	First-Yr Sem.	Natural Hazards	3	100%	20	5.0	5.0
2000	Winter	GS-107	Lecture	Earth.&Volc.	1	100%	148	4.0	4.2
2000	Fall	GS-147	First-Yr Sem.	Natural Hazards	3	100%	20	4.9	4.9
2001	Winter	GS-310	Lecture/Lab	Petrology	4	50%	12	4.9	4.9
2001	Winter	GS-507	Lecture/Lab	Adv. Igneous	4	100%	9	4.6	4.7
2001	Fall	GS-147	First-Yr Sem.	Natural Hazards	3	100%	20	4.9	4.9
2002	Winter	GS-310	Lecture/Lab	Petrology	4	100 %	17	4.8	4.9
2002	Winter	GS-107	Lecture	Earth & Volc.	1	100 %	120	3.9	4.1
2002	Summer	GS-147	First-YrSem.	Natural Hazards	3	100 %	7	4.7	4.7
2002	Summer	GS-116	Lecture/Field	Intro Geology	6	50 %	12	4.3	4.0
2003	Winter	GS-310	Lecture/Lab	Petrology	4	50%	15	4.0	4.1
2003	Summer	GS-116	Lecture/Field	Intro Geology	6	50 %	11	4.3	4.4
2003	Fall	GS-507	Lecture/Lab	Adv. Igneous	4	100 %	7	4.9	4.8
2004	Winter	GS-310	Lecture/Lab	Petrology	4	50 %	12	4.6	4.8
2004	Summer	GS-147	First-YrSem.	Natural Hazards	3	100 %	3	4.0	4.7
2005	Winter	<i>SABBATICAL LEAVE</i>							
2005	Summer	GS-116	Lecture/Field	Intro Geology	6	50%	21	4.4	4.5
2005	Fall	GS-507	Lecture/Lab	Adv. Igneous	4	100 %	4	3.8	3.8
2006	Winter	GS-310	Lecture/Lab	Petrology	4	100%	6	3.8	4.5
2006	Fall	GS-120	Lecture/Lab	National Parks	4	100%	47	3.7	3.9
2007	Winter	GS-147	First-YrSem	Natural Hazards	3	100%	20	4.6	4.9
2007	Winter	GS-107	Lecture	Earth & Volc.	1	100%	211	4.1	4.5
2007	Fall	GS-120	Lecture/Lab	National Parks	4	100%	42	4.0	4.3
2008	Winter	GS-310	Lecture/Lab	Petrology	4	100%	11	4.4	4.8
2008	Fall	GS-120	Lecture/Lab	National Parks	4	100%	46	4.0	4.6
2009	Winter	GS-310	Lecture/Lab	SolidEarthGeoch	4	100%	13	4.2	4.0
2009	Fall	GS-120	Lecture/Lab	National Parks	4	100%	22	4.3	4.9
2010	Winter	GS-310	Lecture/Lab	SolidEarthGeoch	4	100%	14	4.8	4.9
2010	Fall	GS-120	Lecture/Lab	National Parks	4	100%	31	4.0	4.6
2011	Winter	GS-310	Lecture/Lab	SolidEarth Geoch	4	100%	10	4.8	4.8
2011	Fall	EAR-120	Lecture/Lab	National Parks	4	100%	66	4.0	4.5
2012	Summer	EAR-116	Field	Intro Geology	5	50%	22	4.7	4.8
2013	Winter	EAR-310	Lecture/Lab	SolidEarth Geoch	4	100%	20	4.3	4.9
2013	Summer	EAR-116	Field	Intro Geology	5	50%	23	4.8	4.9
2014	Winter	EAR-310	Lecture/Lab	SolidEarth Geoch	4	100%	19	4.8	4.9
2014	Summer	EAR-116	Field	Intro Geology	5	50%	23	4.7	4.9
		<i>SABBATICAL LEAVE (2015)</i>							
2015	Summer	EAR-440	Field	Geo Field Methods	5	50%	19	4.6	4.2
2016	Winter	EAR-310	Lecture/Lab	SolidEarth Geoch	4	100%	25	4.3	4.2
2016	Summer	EAR-440	Field	Geo Field Methods	5	50%	17	3.9	4.9
2016	Fall	EAR-120	Lecture/Lab	National Parks	4	100%	67	4.2	4.8
2017	Winter	EAR-310	Lecture/Lab	SolidEarth Geoch	4	100%	16	4.9	5.0
2017	Summer	EAR-440	Field	Geo Field Methods	5	50%	10	4.0	4.7
2017	Fall	EAR-120	Lecture/Lab	National Parks	4	100%	67	4.1	4.5
2018	Winter	EAR-310	Lecture/Lab	SolidEarth Geoch	4	100%	7	4.8	4.8
2018	Summer	EAR-116	Field	Geo Field Methods	5	50%	17	4.4	4.3

Year	Term	Number	Type	Name	Credits	Resp.	Enrol.	Q1	Q2
2018	Fall	EAR-120	Lecture/Lab	National Parks	4	100%	81	3.5	4.1
2019	Winter	EAR-412	Lecture/Lab	SolidEarth Geoch	4	100%	16	4.8	4.6
2019	Summer	EAR-116	Field	Geo Field Methods	5	50%	17	4.6	4.7
2019	Fall	EAR-120	Lecture/Lab	National Parks	4	100%	77	4.1	4.4
2019	Fall	EAR-435	Field Trip	Sierra Nevada	1	100%	12	4.8	5.0
2020	Winter	EAR-412	Lecture/Lab	SolidEarth Geoch	4	100%	7	n.a.	n.a.
2020	Summer	EAR-296	Remote Field	Intro Geo Field	5	16%	35	n.a.	n.a.
2020	Fall	EAR-120	Lecture/Lab	National Parks	4	100%	120	4.6	4.9

Peer-Reviewed Publications (Google Scholar Citations: 5209; h-index= 40; i10-index=65)

*student author

1. Lange RA, Carmichael ISE and Stebbins JF (1986) Phase transitions in leucite (KAlSi₂O₆), orthorhombic KAlSiO₄, and their iron analogues (KFeSi₂O₆, KFeSiO₄). *American Mineralogist*, 71: 937-945. (62 citations)
2. Lange RA and Carmichael ISE (1987) Densities of Na₂O-K₂O-CaO-MgO-FeO-Fe₂O₃-Al₂O₃-TiO₂-SiO₂ liquids: new measurements and derived partial molar properties. *Geochimica et Cosmochimica Acta*, 51: 2931-2946. (697)
3. Lange RA and Carmichael ISE (1989) Ferric-ferrous equilibria in Na₂O-FeO-Fe₂O₃-SiO₂ melts: effects of analytical techniques on derived partial molar properties. *Geochimica et Cosmochimica Acta*, 53: 2195-2204. (79)
4. Lange RA and Carmichael ISE (1990) Thermodynamic properties of silicate liquids with an emphasis on density, thermal expansion and compressibility. In, Nicholls, J. and Russell, K. (Eds.) Mineralogical Society of America, *Reviews in Mineralogy: Modern Methods of Igneous Petrology*, vol. 24: 25-64. (387)
5. Lange RA and Carmichael ISE (1990) Hydrous basaltic andesites associated with minette and related lavas in western Mexico. *Journal of Petrology*, 31: 1225-1259. (84)
6. Lange RA and Carmichael ISE (1991) A potassic volcanic front in western Mexico: the lamprophyric and related lavas of San Sebastian. *Geological Society of America Bulletin*, 103: 928-940. (99)
7. Lange RA, DeYoreo JJ and Navrotsky A (1991) Scanning calorimetric measurements of heat capacity during incongruent melting of diopside. *American Mineralogist*, 76: 904-912. (55)
8. Lange RA and Navrotsky A (1992) Heat capacities of Fe₂O₃-bearing silicate liquids. *Contributions to Mineralogy and Petrology*, 110: 311-320. (123)
9. Lange RA and Navrotsky A (1993) Heat capacities of TiO₂-bearing silicate liquids: evidence for anomalous changes in configurational entropy with temperature: *Geochimica et Cosmochimica Acta*, 57: 3001-3011. (68)
10. Lange RA, Carmichael ISE and Renne PR (1993) Potassic volcanism near Mono Basin, California: evidence for high water and oxygen fugacities inherited from subduction. *Geology*, 21: 949-952. (41)

11. Lange RA, Cashman KV and Navrotsky A (1994) Direct measurements of the distribution of latent heat during crystallization and melting of a ugandite and an olivine basalt. *Contributions to Mineralogy and Petrology*, 118: 169-181. (58)
12. Lange RA (1994) The effect of H₂O, CO₂ and F on the density and viscosity of silicate melts. In, Carroll, M. and Holloway, J.R. (Eds.) Mineralogical Society of America, *Reviews in Mineralogy: Volatiles in Magmas*, vol. 30: 331-169. (277)
13. DeYoreo JJ, Lange RA and Navrotsky A (1995) Scanning calorimetric determinations of the heat contents of diopside-rich systems during melting and crystallization. *Geochimica et Cosmochimica Acta*, 59, 2701-2707. (12)
14. Carmichael ISE, Lange RA and Luhr JF (1996) Quaternary minettes and associated lavas of Mascota, western Mexico: a consequence of plate extension above a subduction modified mantle wedge. *Contributions to Mineralogy and Petrology*, 124, 302-333. (151)
15. Lange RA and Carmichael ISE (1996) The Aurora volcanic field, California-Nevada: oxygen fugacity constraints on the development of andesitic magma. *Contributions to Mineralogy and Petrology*, 125, 167-185. (41)
16. Lange RA (1996) Temperature independent thermal expansivities of sodium aluminosilicate melts between 713 and 1835 K. *Geochimica et Cosmochimica Acta*, 60, 4989-4996. (44)
17. *Feldstein SN, Lange RA, Vennemann T and O'Neil JR (1996) Ferric-ferrous ratios, H₂O contents and D/H ratios of phlogopite and biotite from lavas of different tectonic regimes. *Contributions to Mineralogy and Petrology*, 126, 51-66. (52)
18. •Paslick CR, Halliday AN, Lange RA, James D and Dawson JB (1996) Indirect crustal contamination: evidence from isotopic and chemical disequilibria in minerals from alkali basalts and nephelinites from northern Tanzania. *Contributions to Mineralogy and Petrology*, 125, 277-292. (33)
19. Lange RA (1997) A revised model for the density and thermal expansivity of K₂O-Na₂O-CaO-MgO-Al₂O₃-SiO₂ liquids between 701 and 1896 K: extension to crustal magmatic temperatures. *Contributions to Mineralogy and Petrology*, 130, 1-11. (217)
20. *Ochs FA and Lange RA (1997) The partial molar volume, thermal expansivity and compressibility of dissolved H₂O in NaAlSi₃O₈ liquid: new measurements and an internally consistent model. *Contributions to Mineralogy and Petrology*, 129, 155-165. (133)
21. *Tangeman JA and Lange RA (1998) The effect of Al³⁺, Fe³⁺, Ti⁴⁺ on the configurational heat capacity of sodium silicate liquids. *Physics and Chemistry of Minerals*, 26, 83-99. (50)
22. *Ochs FA and Lange RA (1999) The density of hydrous magmatic liquids. *Science*, 283, 1314-1317. (323)
23. *Feldstein SN and Lange RA (1999) Pliocene potassic magmas from the Kings River region, Sierra Nevada, California: evidence for melting a hot, veined, refractory sub-arc mantle during extension. *Journal of Petrology*, 40, 1301-1320. (105)
24. Lange RA, Carmichael ISE, and Hall CM (2000) ⁴⁰Ar/³⁹Ar chronology of the Leucite Hills,

- Wyoming: eruption rates, erosion rates, and an evolving temperature structure of the underlying mantle. *Earth and Planetary Science Letters*, 174 329-340. (27)
25. *Tangeman JA, Lange RA, and *Forman L (2001) Ferric-ferrous equilibria in K_2O - FeO - Fe_2O_3 - SiO_2 melts. *Geochimica et Cosmochimica Acta*, 65: 1809-1819. (42)
 26. *Tangeman JA and Lange RA (2001) Determination of the limiting fictive temperature of silicate glasses from calorimetric and dilatometric methods: application to low-temperature liquid volume measurements. *American Mineralogist*, 86: 1331-1344. (13)
 27. *Liu Q and Lange RA (2001) The partial molar volume and thermal expansivity of TiO_2 in alkali silicate melts: systematic variation with Ti coordination. *Geochimica et Cosmochimica Acta*, 65: 2379-2393. (47)
 28. Lange RA (2002) Constraints on the minimum, pre-eruptive volatile concentrations in the Columbia River flood basalts. *Geology*, 30: 179-182. (41)
 29. Lange RA (2002) Comment on: Supercooled liquid diopside melt: confirmation of temperature-dependent expansivity using container-based dilatometry by J. Gottsmann and D.B. Dingwell. *Contributions to Mineralogy and Petrology*, 142: 753-758. (6)
 30. Lange RA (2003) The fusion curve of albite revisited and the compressibility of $NaAlSi_3O_8$ liquid with pressure. *American Mineralogist*, 88: 109-120. (33)
 31. Liebske C, Behrens H, Holtz F and Lange RA (2003) The influence of pressure and composition on the viscosity of andesite melts. *Geochimica et Cosmochimica Acta*, 67: 473-485. (107)
 32. *Liu Q and Lange RA (2003) New density measurements on carbonate liquids and the partial molar volume of the $CaCO_3$ component. *Contributions to Mineralogy and Petrology*, 146: 370-381. (57)
 33. *Frey HM, Lange RA, Hall CM, and Delgado-Granados H (2004) Magma eruption rates constrained by $^{40}Ar/^{39}Ar$ chronology and GIS for the Ceboruco-San Pedro volcanic field, western Mexico. *Geological Society of America Bulletin*, 116: 259-276. (93)
 34. Ai Y and Lange RA (2004) An ultrasonic frequency-sweep interferometer for liquids at high temperature and pressure 1. Acoustic model. *Journal of Geophysical Research*, 109: B12203, doi: 10.1029/2003JB002842. (16)
 35. Ai Y and Lange RA (2004) An ultrasonic frequency-sweep interferometer for liquids at high temperature and pressure 2. Mechanical assembly, signal processing, and application. *Journal of Geophysical Research* 109: B12204, doi:10.1029/2004JB003062. (15)
 36. *Lewis-Kenedi CB, Lange RA, Hall CM, and Delgado-Granados H (2005) The eruptive history of the Tequila volcanic field, western Mexico: ages, volumes and relative proportions of lava types. *Bulletin of Volcanology*, 67: 391-414. (61)
 37. Carmichael ISE, *Frey HM, Lange RA, Hall CM (2006). The Pleistocene cinder cones surrounding Volcán Colima, Mexico revisited: ^{40}Ar - ^{39}Ar ages, eruptive volumes, oxidation states and sulfur content. *Bulletin of Volcanology*, 68: 407-419. (43)

38. *Liu Q and Lange RA (2006) The partial molar volume of Fe₂O₃ in alkali silicate liquids: evidence for an average Fe³⁺ coordination near five. *American Mineralogist*, 91: 385-393. (40)
39. Carmichael ISE, Lange RA, Hall CM and Renne PR (2006) Faulted and tilted Pliocene olivine tholeiite lavas near Alturas, NE California, and their bearing on the uplift of the Warner Range. *Geological Society of America Bulletin*, 118: 1196-1211. (35)
40. *Ownby S, Delgado Granados H, Lange RA, Hall CM (2007) Volcán Tancítaro, Michoacán, Mexico: ⁴⁰Ar/³⁹Ar constraints on its history of sector collapse. *Journal of Volcanology and Geothermal Research*, doi:10.1016/j.jvolgeores.2006.10.009 (49)
41. *Liu Q, *Tenner TJ and Lange RA (2007) Do carbonate liquids become denser than silicate liquids at pressure? Constraints from the fusion curve of K₂CO₃ to 3.2 GPa. *Contributions to Mineralogy and Petrology*, 153: 55-66. (43)
42. Frey HM, Lange RA, Hall CM, Delgado-Granados H, Carmichael ISE (2007) A Pliocene ignimbrite flare-up along the Tepic-Zacoalco Rift corridor: further evidence for the initial stages of rifting of the Jalisco Block (Mexico) away from North America. *Geological Society of America Bulletin*, 119: 49-64. (66)
43. Lange RA (2007) The density and compressibility of KAlSi₃O₈ liquid to 6.5 GPa. *American Mineralogist*, 92: 114-123. (27)
44. *Tenner TJ, Lange RA and Downs RT (2007) The albite fusion curve re-examined: new experiments and the density and compressibility of high albite and NaAlSi₃O₈ liquid. *American Mineralogist*, 92, 1573-1585. (50)
45. *Liu Q, Ai Y and Lange RA (2007) Acoustic velocity measurements on Na₂O-TiO₂-SiO₂ liquids: evidence for a highly compressible TiO₂ component related to five-coordinated Ti. *Geochimica et Cosmochimica Acta*, 71, 4314-4326. (18)
46. Ai Y and Lange RA (2008) New acoustic velocity measurements on CaO-MgO-Al₂O₃-SiO₂ liquids: reevaluation of the volume and compressibility of CaMgSi₂O₆-CaA₁₂Si₂O₈ liquids to 25 GPa. *Journal of Geophysical Research*, 113, B4, B04203. (56)
47. Ai Y and Lange RA (2008) Theoretical analyses and numerical simulations of the torsional modes for two acoustic viscometers with preliminary experimental tests. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, 55, p. 648-658. (16)
48. *Ownby SE, Lange RA and Hall CM (2008) The eruptive history of the Mascota volcanic field, western Mexico: age and volume constraints on the origin of andesite among a diverse suite of lamprophyric and calc-alkaline lavas. *Journal of Volcanology and Geothermal Research*, v. 177, p. 1077-1091. (29)
49. Lange RA, *Frey HM and *Hector J (2009) A new thermodynamic model for the plagioclase-liquid hygrometer-thermometer. *American Mineralogist* v. 94, p. 494-506. (247)

50. *Ownby SE, [Lange RA](#), Delgado-Granados H and Hall CM (2011) The origin of andesite in the deep crust and eruption rates in the Tancítaro-Nueva Italia region of the central Mexican arc. *Geological Society of America Bulletin*, v. 123, p. 274-294. (39)
51. *Frey HM and [Lange RA](#) (2011) Phenocryst complexity in andesites and dacites from the Tequila volcanic field, Mexico: resolving the effects of degassing vs. magma mingling. *Contributions to Mineralogy and Petrology*, v. 162, p. 415-445. (44)
52. *Crabtree SM and [Lange RA](#) (2011) Complex phenocryst textures and zoning patterns in andesites and dacites: evidence of degassing-induced crystallization? *Journal of Petrology*, v. 52, p. 3-38. (53)
53. *Crabtree SM and [Lange RA](#) (2012) An evaluation of the effect of degassing on the oxidation state of hydrous arc magmas: a comparison of pre- and post-eruptive Fe²⁺ concentrations. *Contributions to Mineralogy and Petrology*, v. 163, p. 209-224. (33)
54. Thomas CW, Liu Q, Agee CB, Asimow PD and [Lange RA](#) (2012) Multi-technique equation of state for Fe₂SiO₄ melt and the density of Fe-bearing silicate melts from 0-160 GPa. *Journal of Geophysical Research*, v. 117, B10206, doi:10.1029/2012JB009403. (65)
55. *Waters LE and [Lange RA](#) (2013) Crystal-poor, multiply saturated rhyolites (obsidians) from the Cascade and Mexican arcs: evidence of degassing-induced crystallization of phenocrysts. *Contributions to Mineralogy and Petrology*, v. 166, p. 731-754. (19)
56. *Guo X, [Lange RA](#) and Ai Y (2013) The density and compressibility of CaO-FeO-SiO₂ liquids at one bar: evidence for four-coordinated Fe²⁺ in the CaFeO₂ component. *Geochimica et Cosmochimica Acta* v. 120, p. 206-219. (23)
57. *Frey HM, [Lange RA](#), Hall CM, Nelson SA and Delgado-Granados H (2014) ⁴⁰Ar/³⁹Ar geochronology of Volcán Tepetitlic, western Mexico: implications for the origin of zoned rhyodacite-rhyolite liquid erupted explosively from an andesite stratovolcano after a prolonged hiatus. *Geological Society of American Bulletin*, v. 126, p. 16-30. (9)
58. *Guo X, [Lange RA](#) and Ai Y (2014) Density and sound speed measurements on model basalt (An-Di-Hd) liquids at one bar: new constraints on the partial molar volume and compressibility of the FeO component. *Earth and Planetary Science Letters*, v. 388, p. 283-292. (17)
59. *Waters LE and [Lange RA](#) (2015) An updated calibration of the plagioclase-liquid hygrometer-thermometer applicable to basalts through rhyolites: *American Mineralogist*, v. 100, 2172-2184. (153)
60. *Waters LE, Andrews B, and [Lange RA](#) (2015) Rapid crystallization of phenocrysts in silicic melts during fluid-saturated ascent: phase-equilibrium and decompression experiments. *Journal of Petrology*, v. 56, 981-1006 (36)
61. *O'Leary MC, [Lange RA](#) and Ai Y (2015) The compressibility of CaCO₃-Li₂CO₃-Na₂CO₃-K₂CO₃ liquids: application to natrocarbonatite and CO₂-bearing nephelinite liquids from Oldoinyo Lengai. *Contributions to Mineralogy and Petrology*, v. 170, no. 3, DOI: 10.1007/s004-10-015-1157-0 (12)

62. Zhang HL, Solheid PA, Lange RA, von der Handt A, and Hirschmann, M (2015) Accurate determination of $\text{Fe}^{3+}/\Sigma\text{Fe}$ of andesitic glass by Mössbauer spectroscopy. *American Mineralogist*, v. 100, 1967-1977. (13)
63. *Waters LE and Lange RA (2016) No effect of H_2O degassing on the oxidation state of silicic magmas. *Earth and Planetary Science Letters*, v. 447, p. 48-59. (32)
64. *Li Z, Li J, Lange RA, Liu J, and Militzer B (2017) Determination of calcium carbonate and sodium carbonate melting curves up to Earth's transition zone pressures with implications for the deep carbon cycle. *Earth and Planetary Science Letters*, v. 457, p. 395-402. (34)
65. *Pu X, Lange RA, and Moore G (2017) A comparison of olivine-melt thermometers based on D_{Mg} and D_{Ni} : the effect of melt composition, temperature and pressure with applications to MORBS and hydrous arc basalts. *American Mineralogist*, v. 102, p. 750-765 (15)
66. *Waters LE and Lange RA (2017) The dependence of Fe-Mg partitioning between orthopyroxene and rhyolite melt on dissolved H_2O in the melt. *Contributions to Mineralogy and Petrology*, v. 172:42, p.1-13. (9)
67. *Waters LE and Lange RA (2017) Why aplites freeze and rhyolites erupt: controls on the eruption of high- SiO_2 (eutectic) melts. *Geology*, v. 45, p. 1019-1022. (8)
68. Hui H, Hess K-U, Zhang Y, Nicols ARL, Peslier AH, Lange RA, Dingwell DB and Neal CR (2018) Cooling rates of lunar orange glass beads. *Earth and Planetary Science Letters*, v. 503, p. 88-94. (7)
69. *Hurt, SM and Lange RA (2019) The density of Li_2CO_3 - Na_2CO_3 - K_2CO_3 - Rb_2CO_3 - Cs_2CO_3 - CaCO_3 - SrCO_3 - BaCO_3 liquids: new measurements, ideal mixing and systematic trends with composition. *Geochimica et Cosmochimica Acta*, v. 248, p. 123-137. (5)
70. *Jolles J and Lange RA (2019) High-resolution Fe-Ti oxide thermometry applied to single-clast pumices from the Bishop Tuff: a re-examination of compositional variations in phenocryst phases with temperature. *Contributions to Mineralogy and Petrology*, v. 174:70 (43 p) [<https://doi.org/10.1007/s00410-019-1597-z>] (4)
71. *Calogero M, Hetland E and Lange RA (2020) High-resolution numerical modeling of heat and volatile transfer from basalt to wall rock: application to the crustal column beneath Long Valley caldera, CA. *Journal of Geophysical Research, Solid Earth*
72. *Brehm S and Lange RA (2020) Rapid phenocryst growth in xenolith-bearing basalts from the Big Pine volcanic field, CA: application of olivine-melt oxybarometry, thermometry, and hygrometry at the liquidus. *Geochemistry, Geophysics, Geosystems*, 21, e2020GC009264
73. *Pu X., Moore GM, Lange RA, Touran JP, Gagnon E (2021) Experimental evaluation of a new H_2O -independent thermometer based on olivine-melt Ni partitioning at crustal pressure. *American Mineralogist*, v.106, p. 235-250.

Accepted or Submitted

74. *Jolles J and Lange RA (accepted, pending revisions) Origin of Bishop Tuff compositional gradients with temperature: constraints on mineral-melt-fluid reactions in its parental mush. *Journal of Petrology*

75. *Mesa J and Lange RA (accepted, pending revisions) Origin of alkali olivine basalts and hawaiites in the western Mexican arc: evidence of rapid phenocryst growth and magma mixing during ascent along fractures. *Geosphere*

76. *Jolles J and Lange RA (in review) Temperatures and water contents of Long Valley, CA basalts: application of olivine-melt thermometry and hygrometry at the liquidus
Journal of Volcanology and Geothermal Research