Christian Huber
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1. Education

2009	University of California, Berkeley, CA *PhD in Earth and Planetary Sciences*. Thesis supervisor: Michael Manga. Thesis title: The importance of small-scale dynamics on large scale magmatic processes.
2004	Universite de Geneve, Switzerland *BSc in Physics*.
2001	Universite de Geneve, Switzerland *MSc in Geophysics* in collaboration with USGS, Menlo Park (B. Chouet).
1998	Universite de Geneve, Switzerland *BSc in Earth Sciences*.

2. Professional Appointments

2022 – now	*Professor*, Department of Earth, Environmental & Planetary Sciences, Brown University.
2018 – 2022	*Associate Professor*, Department of Earth, Environmental & Planetary Sciences, Brown University.
2016 – 2018	*Assistant Professor*, Department of Earth, Environmental & Planetary Sciences, Brown University.
2016 – 2016	*Associate Professor* (with tenure), School of Earth and Atmospheric Sciences, Georgia Institute of Technology.
2011 – 2016	*Assistant Professor*, School of Earth and Atmospheric Sciences, Georgia Institute of Technology.
2012 – 2016	*Adjunct Professor*, Civil and Environmental Engineering, Georgia Institute of Technology.
2009 – 2011	*Postdoctoral Fellow*, School of Earth and Atmospheric Sciences, Georgia Institute of Technology.

2005 – 2009 *Graduate Research Assistant*, Department of Earth and Planetary Sciences, UC Berkeley.

3. Publications

a. **Refereed journal articles** (+ undergraduate student advisee; *graduate student advisee; # postdoc advisee)

In Review (4)

Humphreys, M., Namur, O., Bohrson, W., Bouilhol, P, Cooper, G., Cooper, K., **Huber, C.**, Lissenberg, C., Morgado, E., Spera, F., Crystal mush processes and crustal magmatism, submitted to Nature Reviews Earth and Environment.

Dalton, C., **Huber, C.**, Herbert, T., and Si, W., Consequences of a Global Slowdown in Seafloor Spreading for Sea Level and Mantle Heat Loss, submitted to Gcubed.

*Florez, D., **Huber, C.**, Bachmann, O., Sigworth, A., Claiborne, L., and Miller, C., Repacking-Driven Compaction in the Spirit Mountain Batholith, Southern Nevada, in revision for Journal of Petrology.

Chatterjee, A.P., **Huber, C.**, Head, J. and Bachmann, O., Magma chambers on Mars and their controls on crustal structure and evolution, submitted to JGR-planets.

Published (98 journal articles + 2 book chapters)

100. Coonin, A., **Huber, C.**, Troch, J., Townsend, M., Scholz, K., and Singer, B., Magma chamber response to ice unloading: applications to volcanism in West Antarctic Rift System, in press Gcubed.

99. *Lark, L., **Huber, C**., Parmentier., M., and Head, J., Planetary interior configuration control on thermal evolution and geological history, in press JGR-planets.

98. **Huber, C.**, Parmentier, E.M., and *Florez, D., Particle sedimentation in a fluid at low Reynolds number: a generalization of hindered settling described by a two-phase continuum model, in press, Gcubed.

97. Bachmann, O., and **Huber, C.**, The volcanic/plutonic ratio in space and time, on Earth and beyond; how efficiently do magmas reach the surface during planetary evolution? Lithos, vol. 488-489, 2024.

96. Singer, B., Moreno-Yaeger, P., Townsend, M., **Huber, C.**, Cuzzone, J., Edwards, B.R., Romero, M., Orellana Salazar, Y., Marcott, S., Breunig, R., Ferrier, K.L., Scholz, K., Alloway, B., Tremblay, M.M., Stevens, S., Fustos, I., and Moreno, P.I., New Perspectives on Ice Forcing in Continental Arc Magma Plumbing Systems, JVGR, vol. 455, 2024.

95**.** *Florez, D., **Huber, C.**, Hoyos, S., Pec, M., Parmentier, E.M., Connolly, J.A.D., and Hirth, G., Repacking in Compacting Mushes at Intermediate Melt Fractions: Constraints from Numerical Modeling and Phase Separation Experiments on Granular Media, JGR-solid Earth, vol. 129, p. 1-22, 2024.

94. **Huber, C**., and Toramaru, A., Increase in magma supply to Sakurajima's shallow magma chamber over the past 500 years, Geology, 52, p. 235-239, 2024.

93. #Troch, J., **Huber, C.**, Kueter, N., Guillong, M., Ackerson, M.R., Ulmer, P., and Bachmann, O., The effect of water on alkali trace element diffusion (Li, Rb, Cs) in silicic melts, in GCA, vol. 365, p.101-113, 2024.

92. *Nathan, E., Head J.W., and **Huber, C**., Cratering and Tectonic History of the Largest Uranian Satellite, Titania: New Insights Enabled by Image Reprocessing, Planetary Science Journal, vol. 5, 2024.

91. +Scholz K., Townsend M., **Huber C.**, Troch J., Bachmann O., and +Coonin A., Investigating the Impact of an Exsolved H_2O-CO_2 Phase on Magma Chamber Growth and Longevity: A Thermomechanical Model, Gcubed, vol. 24, e2023GC011151, 2023.

90. Badt, N., **Huber, C.,** Hirth, G., and Tullis, T., The pressure- and temperature-dependence of thermal pressurization in localized faults, JGR-solid earth, vol. 128, e2023JB026558, 2023.

89. Faroughi, S. A., and **Huber, C.**, Parameterization of the Viscosity of Crystal-rich Magmas using Rheological State Variables, JVGR, 107856, 2023

88. *Lark, L., Head, J., and **Huber, C.**, Evidence for a carbon-rich Mercury from the distribution of low-reflectance material (LRM) associated with large impact basins, EPSL, 613, 118192, 2023

87. Tsai, V., **Huber, C.**, and Dalton, C., Towards the Geologic Parameterization of Seismic Tomography, GJI, 234 (2), 1447-1462, 2023

86. Buffo, J., Meyer, C., Chivers, C., Walker, C., **Huber, C.**, and Schmidt, B., Geometry of Freezing Impacts Ice Composition: Implications for Icy Satellites, JGR-Planets, 2023.

85. Hoyos, S., *Florez, D., Pec, M., and **Huber, C**., Crystal shape control on the repacking and jamming of crystal-rich mushes, GRL, 49, e2022GL100040, 2022.

84. Schlieder, T.D., Cooper, K.M., Kent, A.J.R., Bradshaw, R., and **Huber C.**, Thermal storage conditions and compositional diversity of magmas from the 1980 and 2004-5 eruptions of Mount St. Helens, USA, Journal of Petrology, vol. 63, 2022.

83. Cordell, D., Naif S., Troch, J., and **Huber, C**., Constraining magma reservoir conditions by integrating thermodynamic petrological models and bulk resistivity from magnetotellurics, Gcubed, vol. X, 2022.

82. *Rasht-Behesht, M., **Huber, C.**, Shukla, K., Karniadakis, G. E., Physics-informed Neural Networks (PINNs) for Wave Propagation and Full Waveform Inversions, JGR-solid Earth, vol. 127, 2022.

81. *Lark, L., Parman, S., **Huber, C.**, Parmentier, EM., and Head, J., Sulfides in Mercury's Mantle: Implications for Mercury's Interior as Interpreted from Moment of Inertia, GRL, vol. 49, e2021GL096713, 2022.

80. Cornet, J., Bachmann, O., Ganne, J., Fiedrich, A., **Huber C**., Deering, C.D., Feng, X., Assessing the effect of melt extraction from mushy reservoirs on compositions of granitoids: from a global database to a single batholith, Geosphere, special issue, p.1-15, 2022.

79. Cordell, D., Hill, G., Bachmann, O., Moorkamp, M., and **Huber, C.**, On the detectability of melt-rich lenses in magmatic reservoirs using magnetotellurics, JVGR, 107470, 2022.

78. Valdivia, P.A., Marshall, A.A., Brand, B.D., Manga, M., and **Huber, C**., Mafic explosive volcanism at Llaima volcano: 3D X-Ray microtomography reconstruction of pyroclasts to constrain shallow conduit processes, Bull. Volc, vol. 84, 1-18, 2022 .

77. Popa, R., Bachmann, O., and **Huber, C.,** To explode or not to explode? A volcanic decision largely predetermined by storage conditions, Nature Geoscience, vol. 14, 781-786, 2021.

76. #Troch., J., **Huber, C.**, and Bachmann, O., The physical and chemical evolution of magmatic fluids in near-solidus silicic magma reservoirs: implications for the formation of pegmatites, American Mineralogist, 107, 190-205, 2022.

75. *Buffo, J., Schmidt, B., **Huber, C**., and Meyer, C., Characterizing the Ice-Ocean Interface of Icy Worlds: Part I – Theory, Icarus, 360, 114318, 2021.

74. *Florez, D., **Huber, C**., Milliken, R., and +Berkson, J., Modeling Lunar Pyroclasts to Probe the Volatile Content of the Lunar Interior, JGR-planets, 126, e2020JE006645, 2021

73. *Lark, L., **Huber, C**., and Head, J.W., Anomalous Recurring Slope Lineae on Mars: Implications for Formation Mechanisms, *Icarus*, 114129, 2021.

72. *Buffo, J. J., Schmidt, B. E., **Huber, C,** Walker, C., Entrainment and dynamics of ocean-derived impurities within Europa's ice shell, *JGR-planets*, vol. 125, e2020JE006394, 2020.

71. Berton, M., *Nathan, E., #Girona, T., *Karani, H., **Huber, C.**, and Head, J., Effects of dissolved volatiles on the freezing dynamics of water spheres, *JGR-planets*, vol. 125, e2020JE006528, 2020.

70. *Rashtbehesht, S. and **Huber, C.**, Detectability of melt-rich lenses in magmatic reservoirs from teleseismic inversions, *JGR solid earth*, vol. 125, e2020JB020264, 2020.

69. #Townsend, M., and **Huber, C.**, A critical magma chamber size for volcanic eruptions, Geology, vol. 48, 2020.

68. **Huber, C**., Ojha, L., Lark, L., and Head, J., The shallow water cycle budget of Mars from Recurring Slope Lineae, *Icarus*, vol. 335, 2020.

67. **Huber, C.** Guenthner, W., and *Karani, H., A new correction for He loss applied to U-Th-He dating of iron oxide aggregates, published online in Gcubed, 2019.

66. **Huber, C.,** #Townsend, M., Degruyter, W., and Bachmann, O., Optimal depth of subvolcanic magma chamber growth controlled by volatiles and crust rheology, *Nature Geoscience,* vol. 12, 2019.

65. #Girona, T., Caudron, C., and **Huber, C**., Origin of the shallow volcanic tremor: the dynamics of gas pockets trapped beneath thin permeable media, *JGR*, 2019.

64. #Townsend, M.**, Huber, C.,** Degruyter, W., and Bachmann, O., Eruption frequency and reservoir growth during inter-caldera periods: insights from thermo-mechanical models with applications to Laguna del Maule, campi Flegrei, Santorini, and Aso, *Gcubed*, vol. 20, 2019.

63. DiPalma, P., Guyennon, N., Parmigiani, A., **Huber, C.**, Heβe, F., and Romano, E., Impact of porous media geometric properties on solute transport using direct pore-scale simulations, *Geofluids*, 2019.

62. *Li, M, **Huber, C**., Wei., J.., and Tao, W, Study on Nucleation Position and Wetting state transition for dropwise condensation on rough structures with different wettability using multiphase lattice Boltzmann method, *International Journal of Heat and Mass Transfer*, 2019.

61. Degruyter, W., Parmigiani, A., **Huber, C**., and Bachmann, O., How do volatiles escape their shallow magmatic hearth? Invited contribution to the Philosophical Transaction A, Royal Society of London, 2019.

60. Bachmann, O., and **Huber, C.**, The inner workings of crustal distillation columns; the physical mechanisms and rates controlling phase separation in magmatic systems, Journal of Petrology, 2018.

59. **Huber, C**., and Parmigiani, A., A physical model for three phase compaction in silicic magma reservoirs, *JGR*, https://doi.org/10.1002/2017JB015224, 2018.

58. *Buffo, J. J., Schmidt, B. E., **Huber, C**. *Multiphase Reactive Transport and Platelet Ice Accretion in the Sea Ice of McMurdo Sound, Antarctica.* Journal of Geophysical Research: Oceans. Vol. 123, p. 324-343, 2018;

57. #Girona, T., **Huber, C**., and Caudron, C., Sensitivity to lunar cycles prior to the 2007 phreatic eruption of Ruapehu volcano, *Nature Scientic Reports*, vol. 8, paper 1476, 2018.

56. *Karani, Hamid, Rashtbehesht, Majid, **Huber, Christian**, Magin, Richard L. *Onset of fractional-order thermal convection in porous media.* Physical Review E/Physical Review E. 2017; 96 (6)

55. Ojha, Lujendra, Chojnacki, Matt, McDonald, George D., Shumway, Andrew, Wolff, Michael J., Smith, Michael D., McEwen, Alfred S., Ferrier, Ken, **Huber, Christian**, Wray, James J., Toigo, Anthony, *Seasonal Slumps in Juventae Chasma, Mars.* Journal of Geophysical Research: Planets/Journal of Geophysical Research: Planets. 2017;

54. Degruyter, W., **Huber, C.**, Bachmann, O., Cooper, K. M., Kent, A. J. R. *Influence of Exsolved Volatiles on Reheating Silicic Magmas by Recharge and Consequences for Eruptive Style at Volcan Quizapu (Chile).* Geochemistry, Geophysics, Geosystems. 2017;

53. Di Palma, Paolo Roberto, Parmigiani, Andrea, **Huber, Christian**, Guyennon, Nicolas, Viotti, Paolo *Pore-scale simulations of concentration tails in heterogeneous porous media.* Journal of Contaminant Hydrology/Journal of Contaminant Hydrology. 2017; 205 : 47-56

52. **Huber, Christian**, Druhan, Jennifer L., Fantle, Matthew S. *Perspectives on geochemical proxies: The impact of model and parameter selection on the quantification of carbonate recrystallization rates.* Geochimica et Cosmochimica Acta/Geochimica et Cosmochimica Acta. 2017; 217 : 171- 192.

51. Parmigiani, A., Degruyter, W, Leclaire, S., **Huber, C**., Bachmann, O. *The mechanics of Shallow magma reservoir outgassing.* Geochemistry, Geophysics, Geosystems/Geochemistry, Geophysics, Geosystems. 2017;

50. *Li, M, **Huber, C**., Mu., Y.., and Tao, W., Lattice Boltzmann simulation of condensation in the presence of noncondensable gas, *International Journal of Heat and Mass Transfer*, vo. 109, p. 1004-1013.

49. *Su, Y., and **Huber, C**., The effect of non-linear decompression history on H2O/CO2 vesiculation in rhyolitic magmas, 2017, *Journal of Geophysical Research*, vol. 122, p. 2712-2723

48. *Karani, H., and **Huber, C**., Role of thermal disequilibrium on natural convection in porous media:Insights from pore-scale study, 2017, *Physical Review E*, vol. 95, 033123.

47. *Karani, H., and **Huber, C**., Transitional Behavior of convective patterns in free convection in porous media, 2017, *Journal of Fluid Mechanics - Rapids*, vol. 818, R3.

46. Sliwinski, J., Bachmann, O., Dungan, M., **Huber, C**., Deering, C., Lipman, P., Martin, L., and Liebske, C., The importance of pre-eruptive thermal rejuvenation in large silicic magma bodies: the case of the Masonic Part Tuff, Southern Rocky Mountain Volcanic Field, CO, USA, 2017, *Contributions to Mineralogy and Petrology*.

45. *Faroughi, S., and **Huber, C**., A predictive model for concentrated suspensions of rigid, randomly oriented spheroids, 2017, *Rheologica Acta*, p. 1-15.

44. Bachmann, O., and **Huber, C.,** Silicic magma reservoirs in the Earth's crust, 2016, *American Mineralogist* invited contribution for centennial issue, vol. 101, p. 2377-2404.

43. *Su, Y., **Huber,C.,** Bachmann, O., Zajacz, Z., Wright, H., and Vazquez, J., 2016, The role of crystallization-driven exsolution on the sulfur mass balance in volcanic arc magmas, *Journal of Geophysical Research*, vol. 121, p. 5624-5640.

42. #Bouvet de Maisonneuve, C., Costa, F., **Huber, C**., Vonlanthen, P., Bachmann, O., Dungan, M., 2016, How olivines record magmatic events? Insights from major and trace element zoning, *Contributions to mineralogy and petrology*, vol. 171, p1-20.

41. #Parmigiani, A., *Faroughi, S., **Huber, C**., Bachmann, O., and *Su, Y., 2016, Bubble accumulation and its role in the evolution of magma reservoirs in the upper crust, *Nature*, vol. 532, p. 492-495.

40. #Degruyter, W., **Huber, C**., Bachmann, O., Cooper, K., and Kent, A., 2016, Magma reservoir response to transient recharge events: the case of Santorini volcano (Greece), *Geology*, vol. 44, p. 23-26.

39. *Faroughi, S., and **Huber, C.,** 2016, A theoretical hydrodynamic modification on the soil texture analyses obtained from the hydrometer test, *Geotechnique*, vol. 66, p. 378-385.

38. *Palma, P., **Huber, C**., and Viotti, P., 2015, A new lattice Boltzmann model for interface reactions between immiscible fluids, *Advances in Water Resources*, vol. 82, p. 139-149.

37. Cooper, L., Bachmann, O., and **Huber, C**., 2015, Volatile budget of Tenerife phonolites inferred from textural zonation of S-rich hauynes, *Geology*, vol. 43, p. 423-426.

36. **Huber, C**., and *Su, Y., 2015, A pore-scale investigation of the dynamic response of saturated porous media to transient stresses, *Geofluids*, vol. 15, p. 11-23.

35. Druhan, J., Brown, S., and **Huber, C**., 2015, Isotopic gradients across fluid-mineral boundaries, *Reviews in Mineralogy and Geochemistry*, vol. 80, p. 355-391.

34. #Bouvet de Maisonneuve, Costa, F., Patia., H., and **Huber, C**., 2015, Mafic magma replenishment, unrest and eruption in a caldera setting: insights from the 2006 eruption of Rabaul (Papua New Guinea), *Geological Society, London*, Special Publication, vol. 422, p. 17-39.

33. *Karani, H., and **Huber, C**., 2015, Lattice Boltzmann formulation for conjugate heat transfer in heterogeneous media, *Physical Review E*, vol. 91, p023304.

32. *Faroughi, S., and **Huber, C**., 2015, Effective thermal conductivity of metal and non-metal particulate composites with interfacial thermal resistance at high volume fraction of nano to macro-sized spheres, *Journal of Applied Physics*, vol. 117, p. 055104.

31. *Faroughi, S., and **Huber, C**., 2015, unifying the relative hindered velocity in suspensions and emulsions of nondeformable particles, *Geophysical Research Letters*, vol. 42, p. 53-59.

30. *Faroughi, S., and **Huber, C**., 2015, A generalized equation for the rheology of emulsions and suspensions of deformable particles subjected to simple shear at low Reynolds number, *Rheologica Acta*, vol. 54, p. 85-108.

29. *Faroughi, S., and **Huber, C.,** 2014, Crowding-based rheological model for suspensions of rigid bimodal-sized particles with interfering size ratios, *Physical Review E*, vol. 90, 052303.

28. Gelman, S., Deering, C., Bachmann, O., **Huber, C**., and Gutierrez, F., 2014, Identifying crystal graveyards remaining after large silicic eruptions, *Earth and Planetary Sciences Letters*, vol. 403, p. 299-306.

27. #Degruyter, W., and **Huber C**., 2014, A model for eruption frequency of upper crustal silicic magma chambers, *Earth and Planetary Sciences Letters*, vol. 403, p. 117-130.

26. #Parmigiani, A., **Huber, C**., and Bachmann, O., 2014, Mush microphysics and the reactivation of crystal-rich magma reservoirs, *Journal of Geophysical Research*, vol. 119, p. 6308-6322.

25. **Huber, C.**, *Su, Y., Nguyen, C., #Parmigiani, A., Gonnermann, H., and Dufek, J., 2014, A new bubble dynamics model to study bubble growth, deformation and coalescence, *Journal of Geophysical Research*, vol. 119, p. 216-239.

24. **Huber, C**., #Shafei, B., and #Parmigiani, A., 2014, A new pore-scale model for linear and non- linear heterogeneous dissolution and precipitation, *Geochimica and Cosmochimica Acta*, vol. 124, p. 109-130.

23. **Huber, C**., #Parmigiani, A., Latt, J., and Dufek, J., 2013, Channelization of buoyant nonwetting fluids in saturated porous media, *Water Resources Research*, vol. 49, p. 6371-6380.

22. Nguyen, C., Gonnermann, H., Chen, Y., **Huber, C**., Maiorano, A., Gouldstone, A., and Dufek, J., 2013, *Geochemistry Geophysics and Geosystems*, vol. 14, p. 3616-3631.

21. **Huber, C**., Bachmann, O., Vigneresse, J.-L., Dufek, J., and #Parmigiani, A., 2012, A physical model for metal extraction and transport in shallow magmatic systems, *Geochemistry Geophysics and Geosystems*, vol. 13, p. 1-18.

20. Matthews, N., **Huber, C**., Pyle, D., and Smith, V., 2012, Timescale of magma recharge and reactivation of large silicic systems from Ti diffusion in quartz, *Journal of Petrology*, vol. 53, p. 1385-1416.

19. **Huber C**., Bachmann, O., and Dufek, J., 2012, Crystal-poor versus crystal-rich ignimbrites: a competition between stirring and reactivation, *Geology*, vol. 40, p. 115-118.

18. Bachmann, O., Deering, C., Ruprecht, J., **Huber, C**., Skopelitis, A., Schnyder, C., 2012, *Contributions to Mineralogy and Petrology*, vol. 163, p. 151-166.

17. Matthews, N., Pyle, D., Smith, V., Wilson, C., **Huber, C**, Van Hinsberg, V., 2012, *Contributions to Mineralogy and Petrology*, vol. 163, p. 87-107.

16. #Parmigiani, A., **Huber, C**., Bachmann, O., and Chopard, B., 2011, Pore-scale mass and reactant transport in multiphase porous media flows, *Journal of Fluid Mechanics*, vol. 686, p.40 – 76.

15. **Huber, C**., Dufek., J., and Chopard, B., 2011, A simple algorithm to enforce Dirichlet boundary conditions in complex geometries, *International Journal of Modern Physics C*, vol. 22, p. 1093-1105.

14. **Huber, C**., Cassata, W., and Renne, P., 2011, A lattice Boltzmann model for noble gas diffusion in solids: the importance of domain shape and diffusive anisotropy and implications for thermochronometry, *Geochimica et Cosmochimica Acta*, vol. 75, p. 2170-2186.

13. **Huber, C**., Bachmann, O., and Dufek, J., 2011, Thermo-mechanical reactivation of locked crystal mushes: melting-induced internal fracturing and assimilation processes in magmas, *Earth and Planetary Science Letters*, vol. 304, p. 443-454.

12. **Huber, C**., Chopard, B., and Manga, M., 2010, A lattice Boltzmann model for coupled diffusion, *Journal of Computational Physics*, vol. 229, p. 7956-7976.

11. **Huber, C**., Bachmann, O., and Dufek, J., 2010, The limitations of melting on the reactivation of silicic mushes, *Journal of Volcanology and Geothermal Research*, vol. 195, p. 97-105.

10. **Huber, C**., Bachmann, O., and Manga, M., 2010, Two competing effects of volatiles on heat transfer in crystal-rich magmas: thermal insulation vs defrosting, *Journal of Petrology*, vol. 51, p. 847-867.

9. Watkins, J., DePaolo, D., **Huber, C**., and Ryerson, F., 2009, Liquid composition-dependence of calcium isotope fractionation during diffusion in molten silicates, *Geochimica et Cosmochimica Acta*, vol. 73, p. 7341-7359.

8. **Huber, C.,** Bachmann, O, and Manga, M., 2009, Homogenization proceses in silicic magma chambers by stirring and mushification (latent heat buffering), *Earth and Planetary Science Letters*, vol. 283, p. 38-47.

7. Parmigiani, A., **Huber, C.,** Chopard, B., Latt, J., and Bachmann, o., 2009, Application of the multi distribution function lattice Boltzmann approach to thermal flows, *The European Journal Special Topics*, vol. 171, p. 37-43.

6. Watkins, J., Manga, M., **Huber, C**., and Martin, M., 2009, Diffusion-controlled spherulite growth in obsidian inferred from H2O concentration profiles, *Contributions to Mineralogy and Petrology*, vol. 157, p. 163-172.

5. **Huber, C.,** Watkins, J., and Manga, M., 2009, Steady shape of a miscible bubble rising below an inclined wall at low Reynolds numbers, European Journal of Mechanics-B/Fluids, vol. 28, p. 405-410.

4. **Huber, C**., Parmigiani. P., Chopard, B., Manga, M., and Bachmann, O., 2008, Lattice Boltzmann model for melting with natural convection, *International Journal of Heat and Fluid Flow*, vol. 29, p. 1469-1480.

3. Almendros, J., Chouet, B., Dawson, P., and **Huber, C**., 2002, Mapping the sources of the seismic wave field at Kilauea volcano, Hawaii, using data recorded on multiple seismic antennas, *Bulletin of the Seismological Society of America*, vol. 92, p. 2333-2351.

b. **Book Chapters (2)**

2. **Huber, C.,** *Su, Y., 2017, A pore-scale investigation of the dynamic response of saturated porous media to transient stresses, *Wiley*.

1. Dufek, J, **Huber, C**., and Karlstrom, L., 2013, Melt Generation and Magma chamber processes, in Modeling volcanic processes: The physics and mathematics of volcanism, edited by S.A. Fagents, T.K.P. Gregg and R.C. Lopez, Cambridge University Press.

c. Book/Monographs

Huber,C., Introduction to Numerical Modeling in Earth and Planetary Sciences, Oxford University Press, final edits (expected publication date 2025).

d. Invited Presentation (first author only)

50, C. Huber, June 2024, SZ4D Workshop invited presentation on magma chamber dynamics, Lamont-Doherty.
49, C. Huber, Spring 2024, Stanford, Geophysics seminar
48, C. Huber, Fall 2023, MIT, Geophysics seminar
47, C. Huber, Spring 2023, University of Geneva, dept. colloquium
46. C. Huber, Spring 2023, ETH, department colloquium
45. C. Huber, Spring 2023, Kyushu University department colloquium
44. C. Huber, November 2021, Rice University dept. seminar.
43. C. Huber, February 2021, MCS Webinar, Physical modeling in volcanology.
42. C. Huber, Dec 2020, GFZ Potsdam, Volcanology seminar.
41. C. Huber, Sept 2020, Caltech, Seismology seminar.
40. C. Huber, Sept. 2020, Boise State, Invited Lecture (physical volcanology).
39. C. Huber, July 2020, Seminar Smithsonian Institution
38. C. Huber, May 2020, Keynote Gordon Conference (Barcelona) – declined scheduling conflict

37. C. Huber, Department seminar WHOI, June 2019.
36. C. Huber, Department seminar, Harvard University, November 2018.
35. C. Huber, COG^3 seminar, MIT, September 2018.
34. C. Huber, Department seminar, University of Connecticut, September 2017.
33. C. Huber, BISSEPS seminar, Harvard University, November 2016.
32. C. Huber, Department Seminar, University of Oregon, October 2016.
31. C. Huber, Department Seminar, University of Illinois, September 2016.
30. C. Huber, Kuno Award Lecture, EGU, April 2016.
29. C. Huber, Invited lecture at the Isaac Newton Mathematical Institute "Melts in the Mantle" workshop, Cambridge, February 2016.
28. C. Huber. AGU Fall Meeting 2015, Invited speaker in session "Multiphase flow and transport processes in Earth Sciences".
27. C. Huber. Energy Sciences Institute, Yale, Symposium on Carbon Management, May 2015.
26. C. Huber. Department seminar, Harvard University, March 2015.
25. C. Huber. Geophysics department Seminar, Stanford University, November 2014.
24. C. Huber. Geology department Seminar, Stanford University, November 2014.
23. C. Huber. Goldschmidt 2014 (invited talk, declined conflicting schedule).
22. C. Huber. EGU Vienna 2014, two keynote talks.
21. C. Huber. Department Seminar, March 2014, U. British Columbia, Vancouver, CA.
20. C. Huber. Department Seminar, February 2014, DTM, Carnegie Institute for Science
19. C. Huber. AGU Fall 2013 (San Francisco, USA).
18. C. Huber. Goldschmidt 2013 (August, Florence, Italy), declined because of conflict in schedule.
17. C. Huber. AGU Fall 2012 (December San Francisco), 3 invited talks on magmatic pro- cess, maximum allowed invited talks being 2, declined one.
16. C. Huber. Department Seminar, University of Georgia, Geology Department, October 2012.
15. C. Huber. Goldschmidt, Montreal, CA, June 2012.
14. C. Huber. Gordon Conference, New Hampshire, July 2012 keynote, declined (conflicting schedule).
13. C. Huber. Department Seminar, Earth Institute Singapore, May 2012.
12. C. Huber. Geo-seminar, Civil Engineering, Georgia Tech, February 2012.
11. C. Huber. Lamont-Doherty, two talks: Volcanology seminar and Geodynamics seminar, November 2011.
10. C. Huber. Rice University, department seminar, February 2011.
9. C. Huber. AGU Fall 2010, Homogeneous crystal-rich vs zoned crystal-poor ignimbrites: how much strain accumulates in large magma reservoirs between a new magma recharge and eruption?.
8. C. Huber. Swiss Geoscience Meeting, Fribourg, November 2010.
7. C. Huber. Discrete Simulation of Fluid Dynamics, Rome 2010, Keynote: Lattice Boltzmann, a tailored modeling tool for Geosciences.
6. C. Huber. Vanderbilt University, department seminar, May 2010.
5. C. Huber. SCRIPPS, University of California San Diego, department seminar, April 2010.
4. C. Huber. Georgia Tech, department seminar, April 2010.
3. C. Huber. Oxford University, two talks, department seminar and geological fluid dyna- mics, February 2010.
2. C. Huber. Stanford University, two talks, two department seminars, March 2009.
1. C. Huber. U.C. Berkeley, department seminar, Spring 2009.

4. Service

a. To the department/university

- Director of Graduate Studies (summer 2024-now).
- Director of Undergraduate Studies (Spring 2024-Summer 2024)
- Currently serving in Advisory committees of 22 graduate students in DEEPS.
- Currently serving in 4 junior faculty member mentoring committees.
- Director of Graduate Studies (summer 2019-summer 2022).
- Geochemistry Faculty Search Committee member, Spring 2019.
- Organization of the Department Colloquium, Spring 2019.
- Organization of the Fall Undergraduate Field Trip, West Massachusetts and Connecticut, Sept. 2017.
- Organization of Department Colloquium, Fall 2017.
- Faculty Search Committee (Planetary Sciences), Fall 2017.
- Participant in the Leadership Alliance Program at Brown over the summer 2017 and 2019. 9week long internship with a focus to provide research experiences to undergraduates from under-represented backgrounds in STEM.
- Organized informal lectures (every other week) on numerical modeling for undergrad interns summer 2017 (upon request from them).

  ------- *Service from Georgia Tech* ----------
- 2011-2016: Undergraduate studies committee, School of Earth and Atmospheric Sciences (EAS), Georgia Tech (GT)
- 2013-2015: Chair of Undergraduate studies committee (EAS GT).
- 2014-2016: Chair of Scientific Computing Committee (EAS GT)
- 2013: Faculty Search committee member for 2 searches (EAS GT)
- Served in 20 Comprehensive examination committees at GT (EAS and Civil Engineering)
- Served in 30 Thesis defense committees at GT (EAS and Civil Engineering).
- Mentored 4 visiting scholars.

b. To the profession and community

- Editor Geophysical Research Letters (2019-).
- Working group member SZ4D (2020-2022)– Drivers of Magmatic Eruption Group
- Working group member of MCS – Modeling Collaboratory for Subduction zones
- AGU Bowen award Committee (2019-)
- 2016-2022: (7 times) Panelist for NSF.
- 2016: Invited to National Academy of Science panel on the future of volcanology.
- 2014:2016: Hosted a team of under-privileged HS student (3/year) and HS science teacher to summer internships (7 weeks each year) in my lab as part of the GIFT program at GT.
- 2012:2016: Outreach to local primary school Atlanta.
- Session convener: AGU (2010, 2014), Goldschmidt (2011), IAVCEI 2013, JpAGU 2020.
- Reviewer: NSF proposals from Geophysics, Hydrology, Petrology and Geochemistry and CAREER.

- Reviewer: JGR, GRL, EPSL, Physica A, Geology, PLoS ONE, Journal of Geosciences. Vadose Zone, Water Resources Research, Advances in Water Research, Journal of Computational Sciences, Nature, Nature, Geosciences, Science, International Journal of Heat and Mass Transfer, Transport in Porous Media, Environmental Science and Technology.(about 30 paper/year).

c. Academic honors

Hishashi Kuno Award, American Geophysical Union, 2015.

Class of 1940 Teaching Effectiveness Award, Georgia Institute of Technology, 2015.

NSF CAREER Award, 2015.

PRF ACS Young Investigator Award, 2012.

Paul Niggli Medal, Swiss Society of Mineralogy and Petrology, 2010.

Postdoctoral Fellowship, Swiss National Fund for Science, 2009-2011.

Louderback Award for outstanding scholarship, University of California Berkeley, 2009.

d. Teaching

a. At Brown

2024 (Spring)	Physical Volcanology	10 enrolled
2023 (Fall)	Modeling in Natural Sc.	14 enrolled
2022 (Fall)	Modeling in Natural Sc.	35 enrolled
2022 (Spring)	Continuum Physics with VT	6 enrolled
2021 (Fall)	Lattice Boltzmann in Geosc.	8 enrolled
2021 (Spring)	Physical Volcanology	7 enrolled
2020 (Fall)	Modeling in Natural Sc.	22 enrolled
2020 (Spring)	Continuum Physics with VT	17 enrolled
2019 (Fall)	GEOL2300 with BFK	4 enrolled
2019 (Spring)	Physical Volcanology	19 enrolled
2018 (Fall)	Modeling in Natural Sc.	38 enrolled
2018 (Spring)	Physical Hydrology	12 enrolled
2017 (Fall)	Modeling in Natural Sc.	27 enrolled
2017 (Spring)	Physical Volcanology	21 enrolled
2017 (Spring)	Melt extraction seminar	14 enrolled

b. At Georgia Tech

2016 (Spring)	Geodynamics	4 enrolled

2015 (Fall)	Earth System Modeling	14 enrolled
2014 (Fall)	Transport in Porous Media	7 enrolled
2014 (Fall)	Earth System Modeling	22 enrolled
2014 (Spring)	Lattice Boltzmann in Geosc.	10 enrolled
2014 (Spring)	Earth System Modeling	27 enrolled
2013 (Spring)	Transport in Porous Media	10 enrolled
2012 (Fall)	Lattice Boltzmann in Geosc.	4 enrolled
2012 (Fall)	Earth System Modeling	23 enrolled
2011 (Fall)	Earth System Modeling	22 enrolled

c. Graduate student and postdoctoral scholars advised

Current:
Henry Jurney (PhD advisor, Brown 2024-)
Uthkarsh Das (PhD advisor, Brown 2023-)
Nina Gilkyson (PhD advisor, Brown 2022-)

Former:
Laura Lark (PhD advisor, Brown 2018 - 2024), now postdoc at IPGP.
Darien Florez (PhD advisor, Brown 2018 -2023) now MIT Crosby Fellow.
Erica Nathan (PhD advisor, Brown 2018-2023), now staff scientist Exxon Mobil
Seyed Hossein Rasht-Behesht (PhD advisor, Brown 2016-2022), now staff scientist Exxon Mobil
Hamid Karani (PhD advisor, GT 2013-2017), now in private industry.
Yanqing Su (PhD advisor, GT 2012-2017), now faculty at Utah State University.
Salah Faroughi (PhD advisor, GT 2012-2016), now faculty at Texas State University.

Other members:
Babak Shafei (postdoc GT 2012-2013), now CEO of aquaNRG.
Andrea Parmigiani (postdoc GT, 2012-2014), now CFD expert for Numeca.
Caroline Bouvet de Maisonneuve (postdoc GT 2012-2013), faculty at EOS Singapore.
Wim Degruyter (postdoc GT, 2012-2015), faculty at Cardiff University, UK .
Tarsilo Girona (postdoc GT and Brown, 2015-2017), now Research Faculty, Fairbanks, AK.
Meredith Townsend (postdoc Brown, 2017-2019) – now faculty at Lehigh University
Juliana Troch (postdoc Brown, 2019 – 2020) – now faculty in Aachen, Germany.

d. Undergraduate student research mentoring

Abigail Ross (Georgia Tech, Fluid dynamics modeling for bubble separation in magmas) - 2015
Solana Huang (Brown University, Field work in Maine + sample preparation) – 2017
Kevin Trinh (Bowdoin University, Leadership Alliance - Field work and volcano monitoring) – 2017
Kate Scholz (Brown University, UTRA – magma chamber dynamics) – 2018
Laura Blackstone (Brown University, UTRA – volcano monitoring) – 2018
Guillermo Alvarez (Cornell University – Leadership Alliance – Eruptions on the Moon) – 2018
Julia Berkson (Brown University – Volatile diffusion in pyroclasts) – 2019
Jeanne Allen (Brown University – Icy satellite tectonics experiments) - 2019

Allie Coonin (Brown University, UTRA – connection between deglaciation and volcanism) – 2019 – undergraduate thesis 2021
Sage Cowit (Brown University, trace element diffusion in melts, with J. Troch) – 2020
Nina Gilkyson (Mt Holyoke, the physics of caldera eruptions) - 2020
Julia Berkson (Brown University, chromium diffusion in martian meteorite) – 2022
Erin Lincoln (Brown University, development of classroom exercises in physical volcanology) – 2022
Gregorio Posada (Brown University, Caldera eruptions) – summer 2024.