

RAJDEEP DASGUPTA

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EDUCATION

- Ph.D. (Geology), University of Minnesota, USA. 2006
- M.Sc. (Applied Geology), Jadavpur University, India. 2000
- B.Sc. (Geological Sciences), Jadavpur University, India. 1998

RESEARCH INTERESTS

Physical and chemical processes of the Earth and other planetary interiors and their surface manifestations, with a particular emphasis on the role of melting and differentiation on the origin and evolution of the Earth and other terrestrial planets including the origin and cycles of life-essential volatile elements.

CURRENT APPOINTMENT

07/20-present: MAURICE EWING ENDOWED CHAIR IN EARTH SYSTEMS SCIENCE – Dept. of Earth,
Environmental and Planetary Sciences, Rice University
07/15-present: PROFESSOR – Dept. of Earth, Environmental and Planetary Sciences, Rice University

PAST APPOINTMENTS

07/13-06/15: ASSOCIATE PROFESSOR – Department of Earth Science, Rice University
07/08-06/13: ASSISTANT PROFESSOR – Department of Earth Science, Rice University
09/06-06/08: POSTDOCTORAL FELLOW – Lamont-Doherty Earth Observatory (LDEO), Columbia University
06/06-08/06: POSTDOCTORAL RESEARCH ASSOCIATE – Geology & Geophysics, University of Minnesota
06/05-05/06: RESEARCH ASSISTANT – Department of Geology & Geophysics, University of Minnesota
09/04-05/05: DOCTORAL DISSERTATION FELLOW – Graduate School, University of Minnesota
06/03-08/04: RESEARCH ASSISTANT – Department of Geology & Geophysics, University of Minnesota
06/02-05/03: GRADUATE FELLOW – Department of Geology & Geophysics, University of Minnesota
09/01-05/02: TEACHING ASSISTANT – Department of Geology & Geophysics, University of Minnesota
09/00-08/01: CSIR-UGC JUNIOR RESEARCH FELLOW – Geological Sciences, Jadavpur University

OTHER POSITIONS HELD

01/19-present: CO-EDITOR IN CHIEF – *Earth and Planetary Science Letters*
02/13-present: ASSOCIATE EDITOR – *Geochimica et Cosmochimica Acta*
10/18-present: STEERING COMMITTEE MEMBER – NASA RCN – NExSS
04/19-present: STEERING COMMITTEE MEMBER – NASA RCN – PCE3
03/08-06/18: VISITING SCIENTIST – Lunar and Planetary Institute, Universities Space Research Association
07/08-06/18: ADJUNCT ASSOCIATE RESEARCH SCIENTIST – LDEO, Columbia University
11/15-11/18: COUNCILOR – *Mineralogical Society of America*

AWARDS AND HONORS

Since PhD

- Jubilee Chair Professorship, *Indian Academy of Sciences – Bengaluru, India* 2022
- Maurice Ewing Endowed Chair in Earth Systems Science, *Rice University* 2020
- Fellow, *Mineralogical Society of America* 2019
- Charles W. Duncan Achievement Award for Outstanding Faculty, *Rice University* 2018
- Distinguished alumni award, *Jadavpur University* 2017
(in commemoration of the 60th year of the university)
- James B. Macelwane Medal, *American Geophysical Union* 2014
- Fellow, *American Geophysical Union* 2014
- Faculty Early CAREER Award, *US National Science Foundation* 2013
- Hisashi Kuno Award 2012
American Geophysical Union - Volcanology, Geochemistry, Petrology section
- F. W. Clarke Medal, *Geochemical Society* 2011
- Packard Fellowship for Science and Engineering 2010
The David and Lucile Packard Foundation
- “Fast Moving Fronts” author of Thomson Reuter 2010
Thomson Reuter
- LDEO POSTDOCTORAL RESEARCH FELLOWSHIP 2006
Lamont-Doherty Earth Observatory, Columbia University

Prior to PhD

- DOCTORAL DISSERTATION FELLOWSHIP 2004
University of Minnesota
- DOCTORAL DISSERTATION RESEARCH GRANT 2004
University of Minnesota
- MURTHY-NORUK FELLOWSHIP 2003
Department of Geology & Geophysics, University of Minnesota
- DENNIS FELLOWSHIP 2002
Department of Geology & Geophysics, University of Minnesota
- OUTSTANDING TEACHING ASSISTANT AWARD 2002
Department of Geology & Geophysics, University of Minnesota
- UNIVERSITY GOLD MEDAL 2000
Jadavpur University (FIRST rank at M.Sc. in Applied Geology)
- S. N. BANDO MEMORIAL GOLD MEDAL 2000
Jadavpur University (HIGHEST aggregate of marks among all the M.Sc. candidates)
- D. N. DUTTA MEMORIAL GOLD MEDAL 2000
Jadavpur University (HIGHEST marks among all the M.Sc. candidates)
- PROMOTHO NATH BOSE MEMORIAL MEDAL 2000
Jadavpur University (FIRST rank in M.Sc. in Applied Geology)
- CSIR-UGC JUNIOR RESEARCH FELLOWSHIP 1999
Council of Scientific & Industrial Research and
University Grants Commission, Govt. of India (*Qualified in National Eligibility Test (NET) – a joint CSIR-UGC (India) test for research fellowship (JRF) and eligibility for lectureship in EARTH-ATMOSPHERIC-PLANETARY AND OCEAN SCIENCES*)
- NATIONAL SCHOLARSHIP 1998
Government of India (*FIRST rank in the B.Sc. Examination in Geological Sciences, Jadavpur University*)
- UNIVERSITY GOLD MEDAL, *Jadavpur University (FIRST rank in B.Sc. in Geological Sciences)* 1998

PUBLICATIONS

PEER-REVIEWED ARTICLES

Google Scholar

Total citations: 9020

Average citations per article: 92.04

H-index: 45; i-10 index: 82

m-index: 2.50

ISI Web of Science (ResearcherID: C-7252-2009)

ORCID 0000-0001-5392-415X

Total citations: 6831

Average citations per article: 69.53

H-index: 41

m-index: 2.40

[§]POST-DOCS, [†]GRAD STUDENTS, [‡]UNDERGRADS, AND [¶]INTERNS OF DASGUPTA GROUP
AND *UNDERGRADS/GRADS MENTORED AT OTHER INSTITUTIONS

[n] indicates the number of citations based on Google Scholar

Accepted/In press

100. [§]Payré, V. & **Dasgupta, R.** (accepted). The effects of phosphorus on partial melting of the martian mantle and compositions of the martian crust. *Geochimica et Cosmochimica Acta*. doi:10.1016/j.gca.2022.03.034 [0]
99. **Dasgupta, R.**, [†]Chowdhury, P., [‡]Eguchi, J., [§]Sun, C., [†]Saha, S. (2022). Volatile-bearing partial melts in the lithospheric and sub-lithospheric mantle on Earth and other rocky planets. *Reviews in Mineralogy and Geochemistry* **87**. doi:10.2138/rmg.2022.87.12 [0]
2022
98. [†]Chowdhury, P., **Dasgupta, R.**, Phelps, P. R., Costin, G. & Lee, C-T. A. (2022). Oxygen fugacity range of subducting crust inferred from fractionation of trace elements during fluid-present slab melting in the presence of anhydrite versus sulfide. *Geochimica et Cosmochimica Acta*. doi:10.1016/j.gca.2022.02.030 [0]
97. [§]Izidoro, A., **Dasgupta, R.**, Raymond, S., Deienno, R., Bitsch, B. & Isella, A. (2022). Planetesimal rings as the cause of the Solar System's planetary architecture. *Nature Astronomy* **6**, 357-366. doi:10.1038/s41550-021-01557-z [2]
96. Raymond, S. N., [§]Izidoro, A., Bolmont, E., Dorn, C., Selsis, F., Turbet, M., Agol, E., Barth, P., Carone, L., **Dasgupta, R.**, Gillon, M. & Grimm, S. L. (2022). An upper limit on late accretion and water delivery in the TRAPPIST-1 exoplanet system. *Nature Astronomy* **6**, 80-88. doi:10.1038/s41550-021-01518-6 [4]
2021
95. Lerner, A. H., Muth, M. J., Wallace, P. J., Lanzirotti, A., Newville, M., Gaetani, G. A., [†]Chowdhury, P. & **Dasgupta, R.** (2021). Improving the reliability of Fe- and S-XANES measurements in hydrous and anhydrous silicate glasses: recognizing and correcting beam damage and identifying Fe-oxide nanolites in melt inclusions. *Chemical Geology* **586**, 120610. doi:10.1016/j.chemgeo.2021.120610 [2]
94. Bajgain, S., Mookherjee, M. & **Dasgupta, R.** (2021). Earth's core could be the largest terrestrial carbon reservoir. *Communications Earth & Environment* **2**, 165. doi:10.1038/s43247-021-00222-7 [1]
93. [†]Grewal, D. S., **Dasgupta, R.** & Aithala, S. (2021). The effect of carbon concentration on its core-mantle partitioning behavior in inner Solar System rocky bodies. *Earth and Planetary Science Letters* **571**, 117090. doi:10.1016/j.epsl.2021.117090 [2]
92. [§]Izidoro, A., Bitsch, B. & **Dasgupta, R.** (2021). The effect of a strong pressure bump in the Sun's natal disk: Terrestrial planet formation via planetesimal accretion rather than pebble accretion. *The Astrophysical Journal* **915**, 62. doi:10.3847/1538-4357/abfe0b [8]
91. [†]Chowdhury, P., **Dasgupta, R.**, Phelps, P. R., Lee, C-T. A. & Anselm, R. A. (2021). Partitioning of chalcophile and highly siderophile elements (HSEs) between sulfide and carbonated melts – Implications for HSE systematics of kimberlites, carbonatites, and melt metasomatized mantle domains. *Geochimica et Cosmochimica Acta* **305**, 130-147. doi:10.1016/j.gca.2021.05.006 [1]
90. [†]Grewal, D. S., **Dasgupta, R.**, Hough, T. & Farnell, A. (2021). Rates of protoplanetary accretion and differentiation set nitrogen budget of rocky planets. *Nature Geoscience* **14**, 369-376. doi:10.1038/s41561-021-00733-0 [8]
89. [†]Grewal, D. S., **Dasgupta, R.** & Marty, B. (2021). A very early origin of isotopically distinct nitrogen in the inner Solar System protoplanets. *Nature Astronomy* **5**, 356-364. doi:10.1038/s41550-020-01283-y [11]

88. †Saha, S., Peng, Y., **Dasgupta, R.**, Mookherjee, M. & Fischer, K. M. (2021). Assessing the presence of volatile-bearing mineral phases in the cratonic mantle as a possible cause of mid-lithospheric discontinuities. *Earth and Planetary Science Letters* **553**, 116602. doi:10.1016/j.epsl.2020.116602 [8]
2020
87. †Lara, M. & **Dasgupta, R.** (2020). Partial melting of a depleted peridotite metasomatized by a MORB-derived hydrous silicate melt – Implications for subduction zone magmatism. *Geochimica et Cosmochimica Acta* **290**, 137-161. doi:10.1016/j.gca.2020.09.001 [5]
86. †Sun, C. & **Dasgupta, R.** (2020). Thermobarometry of CO₂-rich, silica-undersaturated melts constrains cratonic lithosphere thinning through time in areas of kimberlitic magmatism. *Earth and Planetary Science Letters* **550**, 116549. doi:10.1016/j.epsl.2020.116549 [8]
85. †Payré, V., Siebach, K. L., **Dasgupta, R.**, Udry, A., Morrison, S. M. & Rampe, E. B. (2020). Constraining ancient magmatic evolution on Mars using crystal chemistry of detrital igneous minerals in the sedimentary Bradbury group, Gale crater, Mars. *Journal of Geophysical Research – Planets* **125**, e2020JE006467. doi:10.1029/2020JE006467 [10]
84. †Grewal, D. S., **Dasgupta, R.**, & †Farnell, A. (2020). The speciation of carbon, nitrogen, and water in magma oceans and its effect on volatile partitioning between major reservoirs of the Solar System rocky bodies. *Geochimica et Cosmochimica Acta* **280**, 281-301. doi:10.1016/j.gca.2020.04.023 [22]
83. †Ding, S., **Dasgupta, R.** & †Tsuno, K. (2020). The solidus and melt productivity of nominally anhydrous Martian mantle constrained by new high pressure-temperature experiments – Implications for crustal production and mantle source evolution. *Journal of Geophysical Research – Planets* **123**, e2019JE006078. doi:10.1029/2019JE006078 [3]
82. †Muth, M., †Duncan, M. S., **Dasgupta, R.** (2020). The effect of variable Na/K on CO₂ solubility in slab-derived rhyolitic melts. In Manning, C., Lin, A., and Mao, W. (Eds.) *Carbon in Earth's Interior, Geophysical Monograph* **249**, 195-208. doi:10.1002/9781119508229.ch17 [2]
81. †Eguchi, J., Seales, J. & **Dasgupta, R.** (2020). Great oxidation and Lomagundi events linked by deep cycling and increased degassing of carbon. *Nature Geoscience* **13**, 71-76. doi:10.1038/s41561-019-0492-6 [31]
80. †Chowdhury, P. & **Dasgupta, R.** (2020). Sulfur extraction via carbonated melts from sulfide-bearing mantle lithologies – Implications for deep sulfur cycle and mantle redox. *Geochimica et Cosmochimica Acta* **269**, 376-397. doi:10.1016/j.gca.2019.11.002 [10]
2019
79. †Chu, X., Lee, C-T. A., **Dasgupta, R.** & Cao, W. (2019). The contribution to exogenic CO₂ by contact metamorphism at continental arcs: A coupled model of fluid flux and metamorphic decarbonation. *American Journal of Science* **319**, 631-657. doi:10.2475/08.2019.01 [4]
78. **Dasgupta, R.** & †Grewal, D. S. (2019). Origin and early differentiation of carbon and associated life-essential volatile elements on Earth. In Orcutt, B., Daniel, I., and **Dasgupta, R.** (Eds.) *Deep Carbon: Past to Present*. Cambridge University Press, Cambridge, pp. 4-39. doi:10.1017/9781108677950.002 [15]
77. Lee, C-T. A., Jiang, H., **Dasgupta, R.** & Torres, M. (2019). A framework for understanding whole Earth carbon cycling. In Orcutt, B., Daniel, I., and **Dasgupta, R.** (Eds.) *Deep Carbon: Past to Present*. Cambridge University Press, Cambridge, pp. 313-357. doi:10.1017/9781108677950.011 [29]
76. †Saha, S. & **Dasgupta, R.** (2019). Phase relations of a depleted peridotite fluxed by a CO₂-H₂O fluid – Implications for the stability of partial melts versus volatile-bearing mineral phases in the cratonic mantle. *Journal of Geophysical Research: Solid Earth* **124**, 10089-10106. doi:10.1029/2019JB017653 [5]
75. †Chowdhury, P. & **Dasgupta, R.** (2019). Effect of sulfate on the basaltic liquidus and sulfur concentration at anhydrite saturation (SCAS) of hydrous basalts – Implications for sulfur cycle in subduction zones. *Chemical Geology* **522**, 162-174. doi:10.1016/j.chemgeo.2019.05.020 [17]
74. †Grewal, D. S., **Dasgupta, R.**, †Holmes, A., Costin, G., †Li, Y., †Tsuno, K. (2019). The fate of nitrogen during core-mantle separation on Earth. *Geochimica et Cosmochimica Acta* **251**, 87-115. doi:10.1016/j.gca.2019.02.009 [24]

73. Fuentes, J., Crowley, J., **Dasgupta, R.** & Mitrovica, J. (2019). The influence of plate tectonic style on melt production and CO₂ outgassing flux at mid-ocean ridges. *Earth and Planetary Science Letters* **511**, 154-163. doi:10.1016/j.epsl.2019.01.020 [10]
72. †Grewal, D. S., **Dasgupta, R.**, †Sun, C., †Tsuno, K. & Costin, G. (2019). Delivery of carbon, nitrogen, and sulfur to the silicate Earth by a giant impact. *Science Advances* **5**, eaau3669. doi:10.1126/sciadv.aau3669 [49]
71. Bajgain, S. K., Mookherjee, M., **Dasgupta, R.**, Ghosh, D. & Karki, B. B. (2019). Nitrogen in the Earth's outer core. *Geophysical Research Letters* **46**, 89-98. doi:10.1029/2018GL080555 [8]
70. †Sun, C. & **Dasgupta, R.** (2019). Slab-mantle interaction, carbon transport, and kimberlite generation in the deep upper mantle. *Earth and Planetary Science Letters* **506**, 38-52. doi:10.1016/j.epsl.2018.10.028 [38]

2018

69. †Eguchi, J. & **Dasgupta, R.** (2018). Redox state of the convective mantle from CO₂-trace element systematics of oceanic basalts. *Geochemical Perspective Letters* **8**, 17-21. doi:10.7185/geochemlet.1823 [15]
68. †Ding, S. & **Dasgupta, R.** (2018). Sulfur inventory of ocean island basalt source regions constrained by modeling the fate of sulfide during decompression melting of a heterogeneous mantle. *Journal of Petrology* **59**, 1281–1308. doi:10.1093/petrology/egy061 [18]
67. †Tsuno, K., †Grewal, D. S. & **Dasgupta, R.** (2018). Core-mantle fractionation of carbon on Earth and Mars: the effects of sulfur. *Geochimica et Cosmochimica Acta* **238**, 477-495. doi:10.1016/j.gca.2018.07.010 [25]
66. †Carter, L. B. & **Dasgupta, R.** (2018). Decarbonation in the Ca-Mg-Fe carbonate system at mid-crustal pressure as a function of temperature and assimilation with arc magmas – Implications for long-term climate. *Chemical Geology* **492**, 30-48. doi:10.1016/j.chemgeo.2018.05.024 [18]
65. †Eguchi, J. & **Dasgupta, R.** (2018). A CO₂ solubility model for silicate melts from fluid saturation to graphite or diamond saturation. *Chemical Geology* **487**, 23-38. doi:10.1016/j.chemgeo.2018.04.012 [20]
64. †Saha, S., **Dasgupta, R.** & †Tsuno, K. (2018). High pressure-temperature phase relations of a depleted peridotite fluxed by CO₂-H₂O-bearing siliceous melts and the origin of mid-lithospheric discontinuity. *Geochemistry, Geophysics, Geosystems* **19**, 595-620. doi:10.1002/2017GC007233 [17]
63. **Dasgupta, R.** (2018). Volatile bearing partial melts beneath oceans and continents – where, how much, and of what compositions? *American Journal of Science* **318** (1), 141-165. doi:10.2475/01.2018.06 [38]
62. †Ding, S., †Hough, T. & **Dasgupta, R.** (2018). New high pressure experiments on sulfide saturation of high-FeO* basalts with variable TiO₂ contents – Implications for the sulfur inventory of the lunar interior. *Geochimica et Cosmochimica Acta* **222**, 319-339. doi:10.1016/j.gca.2017.10.025 [22]

2017

61. †Li, Y., **Dasgupta, R.**, †Tsuno, K. (2017). Carbon contents in reduced basalts at graphite saturation: Implications for the degassing of Mars, Mercury, and the Moon. *Journal of Geophysical Research – Planets* **122**. doi:10.1002/2017JE005289 [26]
60. †Duncan, M. S. & **Dasgupta, R.** (2017). Rise of Earth's atmospheric oxygen controlled by efficient subduction of organic carbon. *Nature Geoscience* **10**, 387-392. doi:10.1038/NGEO2939 [69]
59. †Duncan, M. S., **Dasgupta, R.**, †Tsuno, K. (2017). Experimental determination of CO₂ content at graphite saturation along a natural basalt-peridotite melt join: Implications for the fate of carbon in terrestrial magma oceans. *Earth and Planetary Science Letters* **466**, 115-128. doi:10.1016/j.epsl.2017.03.008 [29]
58. †Eguchi, J. & **Dasgupta, R.** (2017). CO₂ content of andesitic melts at graphite saturated upper mantle conditions with implications for redox state of oceanic basalt source regions and remobilization of reduced carbon from subducted eclogite. *Contributions to Mineralogy and Petrology* **172**, 12. doi:10.1007/s00410-017-1330-8 [19]
57. †Ding, S. & **Dasgupta, R.** (2017). The fate of sulfide during decompression melting of peridotite – implications for sulfur inventory of the MORB-source depleted upper mantle. *Earth and Planetary Science Letters* **459**, 183-195. doi:10.1016/j.epsl.2016.11.020 [25]

2016

56. †Mallik, A., **Dasgupta, R.**, [§]Tsuno, K., †Nelson, J. (2016). Effects of water, depth and temperature on partial melting of mantle wedge fluxed by hydrous sediment melt in subduction zones. *Geochimica et Cosmochimica Acta* **195**, 226-243. doi:10.1016/j.gca.2016.08.018 [37]
55. †Carter, L. B. & **Dasgupta, R.** (2016). Effect of melt composition on crustal carbonate assimilation – Implications for the transition from calcite consumption to skarnification and associated CO₂ degassing. *Geochemistry, Geophysics, Geosystems* **17**, 3893–3916. doi:10.1002/2016GC006444 [25]
54. [§]Li, Y., **Dasgupta, R.**, [§]Tsuno, K., Monteleone, B. & Shimizu, N. (2016). Carbon and sulfur budget of the silicate Earth explained by accretion of differentiated planetary embryos. *Nature Geoscience* **9**, 781-785. doi:10.1038/ngeo2801 [55]
- 2015
53. [§]Le Roux, V., **Dasgupta, R.** & Lee, C-T. A. (2015). Recommended mineral-melt partition coefficients for FRTEs (Cu), Ga, and Ge during mantle melting. *American Mineralogist* **100**, 2533-2544. doi:10.2138/am-2015-5215 [29]
52. Garapić, G., †Mallik, A., **Dasgupta, R.**, & Jackson, M. G. (2015). Petrologic character of high ³He/⁴He mantle – Primitive, depleted, or re-enriched? *American Mineralogist* **100**, 2066-2081. doi:10.2138/am-2015-5154 [15]
51. †Carter, L. B. & **Dasgupta, R.** (2015). Hydrous basalt-limestone interaction at crustal conditions: Implications for generation of ultracalcic melts and outflux of CO₂ at volcanic arcs. *Earth and Planetary Science Letters* **427**, 202-214. doi:10.1016/j.epsl.2015.06.053 [29]
50. †Duncan, M. S. & **Dasgupta, R.** (2015). Pressure and temperature dependence of CO₂ solubility in hydrous rhyolitic melt – Implications for carbon transfer to mantle source of volcanic arcs via partial melt of subducting crustal lithologies. *Contributions to Mineralogy and Petrology* **169**, 1-19. doi:10.1007/s00410-015-1144-5 [21]
49. †Mallik, A., †Nelson, J. & **Dasgupta, R.** (2015). Partial melting of fertile peridotite fluxed by a hydrous rhyolite at 2-3 GPa: Implications for mantle wedge hybridization by sediment melt and generation of ultra-potassic magmas in convergent margins. *Contributions to Mineralogy and Petrology* **169**, 1-24. doi:10.1007/s00410-015-1139-2 [74]
48. [§]Li, Y., **Dasgupta, R.**, [§]Tsuno, K. (2015). The effects of sulfur, silicon, water, and oxygen fugacity on carbon solubility and partitioning in Fe-rich alloy melt-silicate melt systems at 3 GPa and 1600 °C – Implications for core-mantle differentiation and degassing of magma oceans and reduced planetary mantles. *Earth and Planetary Science Letters* **415**, 54-66. doi:10.1016/j.epsl.2015.01.017 [55]
47. [§]Tsuno, K. & **Dasgupta, R.** (2015). Fe-Ni-Cu-C-S phase relations at high pressures and temperatures – The role of sulfur in carbon storage and diamond stability at mid- to deep- upper mantle. *Earth and Planetary Science Letters* **412**, 132-142. doi:10.1016/j.epsl.2014.12.018 [46]
46. [§]Filiberto, J. & **Dasgupta, R.** (2015). Constraints on the depth and thermal vigor of melting in the Martian mantle. *Journal of Geophysical Research – Planets* **120**, 109-122. doi:10.1002/2014JE004745 [35]
45. †Ding, S., **Dasgupta, R.**, Lee, C.-T. A. & Wadhwa, M. (2015). New bulk sulfur measurements of Martian meteorites and modeling the fate of sulfur during melting and crystallization – Implications for sulfur transport from Martian mantle to crust-atmosphere system. *Earth and Planetary Science Letters* **409**, 157-167. doi:10.1016/j.epsl.2014.10.046 [33]
- 2014
44. [§]Filiberto, J., **Dasgupta, R.**, Gross, J. & Treiman, A. H. (2014). Effect of chlorine on near-liquidus phase equilibria of an Fe-Mg-rich tholeiitic basalt. *Contributions to Mineralogy and Petrology* **168**, 1-13. doi:10.1007/s00410-014-1027-1 [15]
43. †Chi, H., **Dasgupta, R.**, †Duncan, M. S. & Shimizu, N. (2014). Partitioning of carbon between Fe-rich alloy melt and silicate melt in a magma ocean – implications for the abundance and origin of volatiles in Earth, Mars, and the Moon. *Geochimica et Cosmochimica Acta* **139**, 447-471. doi:10.1016/j.gca.2014.04.046 [76]
42. [§]Jégo, S. & **Dasgupta, R.** (2014). The fate of sulfur during fluid-present melting of subducting basaltic crust at variable oxygen fugacity. *Journal of Petrology* **55**, 1019-1050. doi:10.1093/petrology/egu016 [56]

41. †Mallik, A. & Dasgupta, R. (2014). Effect of variable CO₂ on eclogite-derived andesite-lherzolite reaction at 3 GPa – Implications for mantle source characteristics of alkalic ocean island basalts. *Geochemistry, Geophysics, Geosystems* **15**, 1533-1557. doi:10.1002/2014GC005251 [62]
40. †Ding, S., Dasgupta, R. & †Tsuno, K. (2014). Sulfur concentration of martian basalts at sulfide saturation at high pressures and temperatures – implications for deep sulfur cycle on Mars. *Geochimica et Cosmochimica Acta* **131**, 227-246. doi:10.1016/j.gca.2014.02.003 [44]
39. †Duncan, M. S. & Dasgupta, R. (2014). CO₂ solubility and speciation in rhyolitic, sediment partial melts at 1.5-3.0 GPa – Implications for carbon flux in subduction zones. *Geochimica et Cosmochimica Acta* **124**, 328-347. doi:10.1016/j.gca.2013.09.026 [40]
- 2013
38. †Mallik, A. & Dasgupta, R. (2013). Reactive infiltration of MORB-eclogite-derived carbonated silicate melt into fertile peridotite at 3 GPa and genesis of alkalic magmas. *Journal of Petrology* **54**, 2267-2300. doi:10.1093/petrology/egt047 [89]
37. Walker, D., Dasgupta, R., Li, J. & *Buono, A. S. (2013). Nonstoichiometry and growth of some Fe carbides. *Contributions to Mineralogy and Petrology* **166**, 935-957. doi:10.1007/s00410-013-0900-7 [37]
36. *Buono, A. S., Dasgupta, R., Lee, C-T. A. & Walker, D. (2013). Siderophile element partitioning between cohenite and liquid in Fe-Ni-S-C system and implications for geochemistry of planetary cores and mantles. *Geochimica et Cosmochimica Acta* **120**, 239-250. doi:10.1016/j.gca.2013.06.024 [19]
35. †Jégo, S. & Dasgupta, R. (2013). Fluid-present melting of sulfide-bearing ocean-crust: Experimental constraints on the transport of sulfur from slab to mantle wedge. *Geochimica et Cosmochimica Acta* **110**, 106-134. doi:10.1016/j.gca.2013.02.011 [69]
34. Dasgupta, R. (2013). Ingassing, storage, and outgassing of terrestrial carbon through geologic time. *Reviews in Mineralogy and Geochemistry* **75**, 183-229. doi:10.2138/rmg.2013.75.7 [314]
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- 2012
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27. Lee, C-T. A., Luffi, P., Chin, E. J., Bouchet, R., Dasgupta, R., Morton, D. M., †Le Roux, V., Yin, Q. & Jin, D. (2012). Copper systematics in arc magmas and implications for crust-mantle differentiation. *Science* **336**, 64-68. doi:10.1126/science.1217313 [432]
26. †Tsuno, K. & Dasgupta, R. (2012). The effect of carbonates on near-solidus melting of pelite at 3 GPa: relative efficiency of H₂O and CO₂ subduction. *Earth and Planetary Science Letters* **319-320**, 185-196. doi:10.1016/j.epsl.2011.12.007 [70]
- 2011

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22. ^SFiliberto, J. & **Dasgupta, R.** (2011). Fe²⁺-Mg partitioning between olivine and basaltic melts: applications to genesis of olivine-phyric shergottites and conditions of melting in the Martian interior. *Earth and Planetary Science Letters* **304**, 527-537. doi:10.1016/j.epsl.2011.02.029 [124]
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21. Lee, C-T. A., Luffi, P., ^SLe Roux, V., **Dasgupta, R.**, Albarède, F. & Leeman, W. P. (2010). The redox state of arc mantle using Zn/Fe systematics. *Nature* **468**, 681-685. doi:10.1038/nature09617 [213]
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16. **Dasgupta, R.**, Jackson, M. G. & Lee, C-T. A. (2010). Major element chemistry of ocean island basalts – conditions of mantle melting and heterogeneity of mantle source. *Earth and Planetary Science Letters* **289**, 377-392. doi:10.1016/j.epsl.2009.11.027 [164]
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15. **Dasgupta, R.**, *Buono, A., *Whelan, G. & Walker, D. (2009). High-pressure melting relations in Fe-C-S systems: implications for formation, evolution, and structure of metallic cores in planetary bodies. *Geochimica et Cosmochimica Acta* **73**, 6678-6691. doi:10.1016/j.gca.2009.08.001 [119]
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13. **Dasgupta, R.**, Hirschmann, M. M., McDonough, W. F., Spiegelman, S. & Withers, A. C. (2009). Trace element partitioning between garnet lherzolite and carbonatite at 6.6 and 8.6 GPa with applications to the geochemistry of the mantle and of mantle-derived melts. *Chemical Geology* **262**, 57-77. doi:10.1016/j.chemgeo.2009.02.004 [247]
12. Hirschmann, M. M. & **Dasgupta, R.** (2009). The H/C ratios of Earth's near-surface and deep reservoirs, and consequences for the deep Earth volatile cycles. *Chemical Geology* **262**, 4-16. doi:10.1016/j.chemgeo.2009.02.008 [178]
- 2008
11. Jackson, M. G. & **Dasgupta, R.** (2008). Compositions of HIMU, EM1, and EM2 from global trends between radiogenic isotopes and major elements in ocean island basalts. *Earth and Planetary Science Letters* **276**, 175-186. doi:10.1016/j.epsl.2008.09.023 [256]
10. **Dasgupta, R.** & Walker, D. (2008). Carbon solubility in core melts in a shallow magma ocean environment and distribution of carbon between the Earth's core and the mantle. *Geochimica et Cosmochimica Acta* **72**, 4627-4641. doi:10.1016/j.gca.2008.06.023 [127]
- 2007-2004
9. **Dasgupta, R.**, Hirschmann, M. M. & *Smith, N. D. (2007). Partial melting experiments of peridotite + CO₂ at 3 GPa and genesis of alkalic ocean island basalts. *Journal of Petrology* **48**, 2093-2124. doi:10.1093/petrology/egm053 [500]

8. **Dasgupta, R.** & Hirschmann, M. M. (2007). A modified iterative sandwich method for determination of near-solidus partial melt compositions. II. Application to determination of near-solidus melt compositions of carbonated peridotite. *Contributions to Mineralogy and Petrology* **154**, 647-661. doi:10.1007/s00410-007-0214-8 [95]
7. Hirschmann, M. M. & **Dasgupta, R.** (2007). A modified iterative sandwich method for determination of near-solidus partial melt compositions. I. Theoretical considerations. *Contributions to Mineralogy and Petrology* **154**, 635-645. doi:10.1007/s00410-007-0213-9 [23]
6. **Dasgupta, R.**, Hirschmann, M. M. & *Smith, N. D. (2007). Water follows carbon: CO₂ incites deep silicate melting and dehydration beneath mid-ocean ridges. *Geology* **35**, 135-138. doi:10.1130/G22856A.1 [121]
5. **Dasgupta, R.** & Hirschmann, M. M. (2007). Effect of variable carbonate concentration on the solidus of mantle peridotite. *American Mineralogist* **92**, 370-379. doi:10.2138/am.2007.2201 [149]
4. **Dasgupta, R.** & Hirschmann, M. M. (2006). Melting in the Earth's deep upper mantle caused by carbon dioxide. *Nature* **440**, 659-662. doi:10.1038/nature04612 [511]
3. **Dasgupta, R.**, Hirschmann, M. M. & *Stalker, K. (2006). Immiscible transition from carbonate-rich to silicate-rich melts in the 3 GPa melting interval of eclogite+CO₂ and genesis of silica-undersaturated ocean island lavas. *Journal of Petrology* **47**, 647-671. doi:10.1093/petrology/egi088 [266]
2. **Dasgupta, R.**, Hirschmann, M. M. & *Dellas, N. (2005). The effect of bulk composition on the solidus of carbonated eclogite from partial melting experiments at 3 GPa. *Contributions to Mineralogy and Petrology* **149**, 288-305. doi:10.1007/s00410-004-0649-0 [135]
1. **Dasgupta, R.**, Hirschmann, M. M. & Withers, A. C. (2004). Deep global cycling of carbon constrained by the solidus of anhydrous, carbonated eclogite under upper mantle conditions. *Earth and Planetary Science Letters* **227**, 73-85. doi:10.1016/j.epsl.2004.08.004 [436]

PEER-REVIEWED ARTICLES (under review/under revision)

Dasgupta, R., †Falksen, E. & †Sun, C. (in review). The fate of nitrogen during parent body partial melting and accretion of the inner Solar System bodies at highly reducing conditions.

†Lara, M. & **Dasgupta, R.** (in review). Carbon recycling efficiency in subduction zones constrained by the effects of H₂O-CO₂ fluids on partial melt compositions in the mantle wedge.

†Grewal, D. S., Seales, J. & **Dasgupta, R.** (in review). Magma ocean differentiation regime of Solar System's earliest protoplanets constrained by nitrogen and carbon fractionation.

EDITED BOOK/SPECIAL VOLUME

Orcutt, B., Daniel, I. & **Dasgupta, R.** (2019). Deep Carbon: Past to Present. Cambridge University Press, Cambridge. 670 p. doi:10.1017/9781108677950 [10]

Dasgupta, R. & Dixon, J. E. (2009). Volatiles and volatile-bearing melts in the Earth's interior. *Chemical Geology* **262**, 1-3. doi:10.1016/j.chemgeo.2009.04.006 [5]

THESES

Dasgupta, R. (2006). Experimental Investigation of Mantle Melting in the Presence of Carbonates. PhD thesis. p. 270. [3]

Dasgupta, R. (2000). Petrochemistry of the Chimakurthy mafic-ultramafic complex and the associated mafic dykes, Prakasam district, Andhra Pradesh, India. MSc thesis. Jadavpur University, Kolkata, India. p. 154.

OTHER PUBLISHED ARTICLES

Dasgupta, R. (2015). Dasgupta, Frankenberg, Perron, Shuster, and Tierny receive 2014 James B. Macelwane Medals. – Dasgupta Response. *EOS* **96**, 17.

Dasgupta, R. (2013). Dasgupta receives 2012 Hisashi Kuno Award. – Response. *EOS* **94**, 281. doi: 10.1002/2013EO320009

TEACHING/ MENTORING EXPERIENCE

(n = students enrolled; X = teaching effectiveness score; 1.0 is highest score, on the scale of 1-5)

EEPS 511: Advanced Topics in Geochemistry	Spring 2022	n = 5	X =
EEPS 412/612: Advanced Petrology	Fall 2020	n = 7	X = 1.13
EEPS 322: Earth and Planetary Materials	Fall 2020	n = 8	X = 1.25
ESCI 557: Origin and early evolution of the Solar System	Spring 2021	n = 4	X = 1.00
ESCI 412/612: Advanced Petrology	Fall 2020	n = 9	X = 1.50
ESCI 322: Earth and Planetary Materials	Fall 2020	n = 3	X = 1.33
ESCI 419: Characterization of Earth and Planetary Materials	Spring 2020	n = 14	X = 1.11
ESCI 322: Earth Chemistry and Materials	Fall 2019	n = 8	X = 1.43
ESCI 412/612: Advanced Petrology	Fall 2019	n = 5	X = 1.00
ESCI 322: Earth Chemistry and Materials	Fall 2018	n = 5	X = 1.60
ESCI 412/612: Advanced Petrology	Fall 2018	n = 9	X = 1.13
ESCI 411/611: Advanced Petrology II	Spring 2018	n = 3	X = 1.00
ESCI 555: Seminar: “Following Carbon”	Fall 2017	n = 19	X = 2.17
ESCI 322: Earth Chemistry and Materials	Fall 2017	n = 7	X = 1.00
ESCI 411/611: Advanced Petrology II	Spring 2017	n = 4	X = 1.25
ESCI 412/612: Advanced Petrology	Fall 2016	n = 6	X = 1.50
ESCI 419/619: Materials Characterization	Spring 2016	n = 10	X = 1.25
ESCI 411/611: Advanced Petrology II	Spring 2016	n = 10	X = 1.33
ESCI 562: Advanced Topics in Geophysics (Magma from S2S)	Fall 2015	n = 12	X = 1.89
ESCI 557: Special Topics in Earth Science (Planetary Habitability)	Fall 2015	n = 16	X = 1.92
ESCI 322: Earth Chemistry and Materials	Fall 2015	n = 10	X = 1.44
ESCI 412: Advanced Petrology	Spring 2015	n = 11	X = 1.40
ESCI 410: Optical Mineralogy & Petrography	Spring 2014	n = 6	X = 1.67
ESCI 322: Earth Chemistry and Materials	Fall 2013	n = 10	X = 1.44
ESCI 541: The Planet Mars: Formation, Differentiation, Structure, and Evolution	Spring 2013	n = 6	X = 2.33
ESCI 412: Advanced Petrology	Spring 2013	n = 7	X = 1.33
ESCI 430: Trace element and isotope geochemistry	Fall 2012	n = 8	X = 1.50
ESCI 322: Earth Chemistry and Materials	Fall 2012	n = 15	X = 2.08
ESCI 419: Materials Characterization	Fall 2012	n = 6	X = 1.75
ESCI 538: Advanced Topics in Solid Earth II (Redox Evolution of Earth and Planets)	Fall 2011	n = 5	X = 1.50
ESCI 322: Earth Chemistry and Materials	Fall 2011	n = 9	X = 1.39
ESCI 538: Advanced Topics in Solid Earth II (How to Make and Sustain a ‘Volatile’ Planet)	Spring 2011	n = 7	X = 1.96
ESCI 430: Trace element and isotope geochemistry	Spring 2011	n = 3	X = 1.44
ESCI 412: Advanced Petrology	Spring 2011	n = 6	X = 1.56
ESCI 413: Dynamics of the Earth’s Interior	Fall 2010	n = 8	X = 1.37
ESCI 322: Earth Chemistry and Materials	Fall 2010	n = 5	X = 1.78
ESCI 412: Advanced Petrology	Spring 2010	n = 7	X = 1.60
ESCI 322: Earth Chemistry and Materials	Spring 2010	n = 13	X = 1.52
ESCI 419: Materials Characterization	Fall 2009	n = 4	X = 1.42
ESCI 412: Advanced Petrology	Spring 2009	n = 6	X = 1.19
ESCI 322: Earth Chemistry and Materials	Spring 2009	n = 8	X = 1.33
ESCI 538: Advanced Topics in Solid Earth II (Geochemical Evolution of the Earth’s Interior)			

Spring 2009 n = 3

GEO 1001: Introduction to Geology: The Dynamic Earth (Lab) – 2001-02 (University of Minnesota)

CURRENT ADVISEE

GRADUATE STUDENTS: Michael Lara (PhD-track: August 2017-present)
 Anna Johnson (PhD-track: August 2020-present)
 Aindrila Pal (PhD-track: January 2021-present)
 Debjcet Pathak (PhD-track: August 2021-present)
 Maria Rodriguez (PhD-track: August 2021-present)

POST-DOCTORAL RESEARCHERS: Ye Peng (arriving summer 2022)
 Vincent Clesi (August 2021-present)
 Maxime Maurice (January 2021-present)
 André Izidoro (May 2020-present)
 Kyusei Tsuno (May 2009-present) – Lab manager

UNDERGRADUATE STUDENTS: Bavan Rajan (August 2020-present)

FORMER ADVISEE

GRADUATE STUDENTS: Damanveer Grewal (PhD: 2021; post-doctoral fellow at Caltech-GPS)
 Emily G. Falksen (MS: 2021; now in an X-ray radiography course)
 Proteek Chowdhury (PhD: 2020; post-doctoral researcher at UC Riverside)
 Sriparna Saha (PhD: 2019; geoscience education researcher at U Christchurch, NZ)
 James Eguchi (PhD: 2019; NASA postdoctoral fellow at UC Riverside)
 Laura B. Carter (PhD: 2018; Communications & Project Administrator at MIT)
 Shuo Ding (PhD: 2016; Associate Research Scientist at LDEO, Columbia U)
 Megan S. Duncan (PhD: 2015; assistant professor at Virginia Tech University)
 Ananya Mallik (PhD: 2014; assistant professor at University of Arizona)
 Han Chi (MS: 2013; Science Journalist at China Science Daily)

POST-DOC: Chenguang Sun (2016-2020; now an assistant professor at UT Austin)
 Valérie Payré (August 2018-2020; now a post-doctoral researcher: Northern Arizona U)
 Xu Chu (2016-2017; now an Assistant Professor at University of Toronto)
 Yuan Li (2013-2016; now a staff scientist at Guangzhou Institute of Geochemistry, CAS)
 Sébastien Jégo (2011-2013; now a post-doctoral researcher: ISTO, U Orleans)
 Justin Filiberto (2009-2011; now a staff scientist: Lunar and Planetary Institute, USRA)
 Veronique Le Roux (2009-2010; now an Assistant scientist: WHOI)

UNDERGRADUATE STUDENTS: James Karroum (2018-2019)
 Naod Araya (2019)
 Alexandra Holmes (2015-2018; now a graduate student at UT Austin)
 Michelle Muth (2013-2015; now an NSF graduate fellow in U Oregon)
 Yang (Nana) Xu (2011-2014; now a geologist at Noble Energy)
 Jasmine Moss (2010-2012; now a graduate student at...)
 Christine Gerbode (2009-2010; now a grad student at Duke University)

INTERNS: Elizabeth Mann (undergrad going to Texas A&M University; June 2021-Aug 2021)
 Sanath Aithala (undergrad from University of Houston; July 2019-Mar 2020)
 Ryan Anselm (high school student from Clements High School, FBISD; Jul-Aug 2019)
 Melinda Zhou (high school student from Mayday Creek High School, Katy ISD; Jul-Aug 2019)
 Shuo Xue (student from the Gu; September 2018-August 2018)
 Prithika Sen (high school student from the Village School; July-August 2018)
 Alexandra Farnell (high school student from Saint John school; June-July 2018; Jul-Aug 2019)

Lauren Oquin (student from San Jacinto Community College; June-July 2018)
Rohil P. Bathija (high school student from Awty International School; June 2017)
Michael Dean (student of Houston Community College; June-Aug 2017)
Taylor Hough (undergrad from Brown U: May-August 2015; June 2016; June 2018-April 2019)
Toul DeGuia-Cranmer (student from Lone Star Community College: June-Aug 2013)
Jared Nelson (undergrad: Lone Star Comm. College & Texas A&M U: June-Aug 2013, 2014)
Juhi Agarwal (undergrad: Texas A&M: May-August 2013)
Gregory Adragna (teacher from Christo Rey Jesuit Preparatory School of Houston: June 2013)
Vaibhav Mishra (MS student from IISER, Kolkata, India: May-August 2011)
Anukriti Sharma (MS student from IISER, Kolkata, India: May-August 2011)

THESIS COMMITTEE MEMBER

Yi Hou (Rice U – PhD: Advisor – Yueng, L, Torres, M.)
Sydney Allen (Rice U – PhD: Advisor – Lee, C-T. A.)
Jackson Brokhard (Rice U – PhD: Advisor – Lee, C-T. A.)
Patrick Phelps (Rice U – PhD: Advisor – Lee, C-T. A.)
Julin Zhang (Rice U – PhD: 2020; Advisor – Lee, C-T. A.)
Johny Seales (Rice U – PhD: 2020; Advisor – Lenardic, A.)
Sahand Hajimirza (Rice U – PhD: 2020; Advisor – Gonnermann, H. M.)
Eytan Sharton-Bierig (Rice U – MSc: 2019; Advisor – Lee, C-T. A.)
Hehe Jiang (Rice U – PhD: 2018; Advisor – Lee, C-T. A.)
Jennifer Hero (Rice U – MS: 2011-2014; Advisor – Lenardic, A.)
Michael Farner (Rice U – PhD: 2017; Advisor – Lee, C-T. A.)
Lexi Malouta (Rice U – MS: 2016; Advisor – Lee, C-T. A.)
Monica Erdman (Rice U – PhD: 2016; Advisor – Lee, C-T. A.)
Austin Blaser (Rice U – MS: 2016; Advisor – Gonnermann, H. M.)
Emily Chin (Rice U – PhD: 2013; Advisor – Lee, C-T. A.)
Inna Kurganskaya (Rice U – PhD: 2013; Advisor – Lüttge, A.)
Alex Kirshner (Rice U – PhD: 2013; Advisor - Anderson, J.)
Kelly Liao (Rice U – MS: 2012; Advisor - Lee, C-T. A.)
*Antonio S. Buono (Columbia U – PhD: 2011; Advisor - Walker, D.)
Nigel Watt (Rice U – MS: 2011; Advisor - Lee, C-T. A.)
Heather Dalton (Rice U – MS: 2009; Advisor - Lee, C-T. A.)
Patrick Hobart Young (Rice U – MS: 2009; Advisor - Lee, C-T. A.)

THESIS QUALIFYING EXAM COMMITTEE MEMBER

Ben Belzer (Rice U - MS: 2018-present; Advisor - French, M.)
Maria Furtney (Rice U - MS: 2019-present; Advisor - Gonnermann, H. M.)
Matt Weller (Rice U - PhD: 2010-present; Advisor - Morgan, J./ Lenardic. A.)
Pranabendu Moitra (Rice U - PhD: 2009-present; Advisor - Gonnermann, H. M.)
Jay Mishra (Rice U - PhD: 2006-present; Advisor - Gordon, R.)
Hugh Daigle (Rice U - PhD: 2011; Advisor - Dugan, B.)

DEPARTMENTAL AND UNIVERSITY SERVICES

Departmental Services

- Chair of faculty search committee (2021-2022)
- Director of graduate studies (2019-present)
- Chair of graduate admissions committee (2015-2019)

- Chair of departmental end-of-year student awards committee (2013-present)
- Earth, Environmental and Planetary Sciences colloquium committee member (2011-present)
- Wiess post-doctoral fellowship committee member (2015-2017)
- Library liaison for the Earth Science department (2012-2016)
- Earth Science undergraduate curriculum committee member (2009-present)
- Earth Science laboratory committee chair (2012-present)
- Undergraduate advisor for Earth Science (2009-2014; 2017-present)
- Faculty search committee member (2010, 2015, 2021-22)
- Departmental strategic planning committee (2015)

University Services

- University Standing Committee member for “Fellowships and Awards” (2015-present)
- Shared Equipment Authority (SEA) board member (2014-2018)
- Internal selection committee member for Packard Fellowship nominees (2011-present)
- University Standing Committee /member for “Examinations and Standing” (2013-14)
- Senate working group member for university-wide laboratory safety review (2013)
- Faculty reviewer – “Speed Reviews” of Rice NSF CAREER proposals (2013)
- Faculty mentor – NSF Advance: ‘speed mentoring for post-doctoral researchers’ (2011)

GRANTS RECEIVED [US\$ >16.46 MILLION (RICE TOTAL); US\$ >11.95 MILLION AS LEAD/SOLE PI – *since 2008*]

Active:

- NSF ICER-2120039: GP-IN: Inclusive Learning through Earth, Environmental and Planetary Sciences (ILEEPS). 01/01/2022-12/31/2024. \$314,904 (PI: Nichol, C; Co-PIs: Masiello, Crawford, Yeung, Dasgupta)
- NASA 80NSSC18K1314: Fractionation of C-O-H-N-S Volatiles in Core-Forming Magma Oceans of the Inner Solar System Bodies. 06/25/2018-06/24/2021. \$475,000 (sole-PI)
- NASA 80NSSC18K0828: Origin and Cycles of Life-essential Ingredients in Young Rocky Planets. 07/15/2018-07/14/2023. ~\$7.7 million total (PI: Dasgupta; Co-Is: Hassanzadeh, Lee, Yeung, Lenardic, Isella at Rice U, Stewart-Mukhopadhyay at UC Davis, McCollom at UC Boulder, Schlichting at UCLA and Burton and McCubbin at NASA-JSC)
- NSF EAR-1763226: CSEDI Collaborative Research: C-O-H Volatile Metasomatism in the Cratonic Mantle - Implications for Mid-Lithospheric Discontinuities. 05/01/2018-04/30/2021. \$375,202 (Rice portion) (lead-PI: Dasgupta; Co-PI: Mookherjee, M. - FSU; Fischer, K. – Brown U)

Completed:

- NASA 80NSSC19K1538: Elemental and Isotopic Fractionation of Nitrogen during Core-Mantle Differentiation in Rocky Bodies. 09/01/2019-08/31/2021. \$90,000.
- NSF OCE-1338842: FESD Type I Proposal: Continent-Island Arc Fluctuations: Linking Deep Earth Dynamics to Long-Term Climate. 09/01/2013-08/31/2020 (with 2 year no cost extension). \$4.3 million total (lead-PI: Lee; Co-PIs: Dasgupta, Dickens, Lenardic)
- UCLA 0995 G VA534 (subaward; Sloan Foundation/DCO): Extreme Physics and Chemistry of Carbon: Forms, Transformations and Movements in Planetary Interiors. 11/01/2017-10/31/2019. \$50,400 (sole-PI)
- Packard Fellowship for Science and Engineering from the David and Lucile Packard Foundation. How to Make and Sustain a ‘Volatile’ Planet? 11/01/2010-10/31/2019 (with 4 year no cost extension). \$875,000 (sole-PI)
- NSF EAR-1255391: CAREER: Mantle Hybridization via Melt-Rock Reaction – Implications for Chemical Variability of Oceanic Basalts and Lithologic Heterogeneities in the Earth’s Convecting Mantle. 03/15/2013-08/31/2019 (with 1.5 year no cost extension). \$635,800 (sole-PI)
- NASA NNX13AM51G: Carbon Solution and Metal-Silicate Partitioning in a Magma Ocean: Implications for Deep Volatile Cycles and Core-Mantle Differentiation of Terrestrial Planets. 07/03/2013-07/02/2018

- (with 2 year no cost extension). \$424,000 (Rice portion) (lead-PI: Dasgupta; Co-I: Righter, NASA-JSC and Shimizu, WHOI)
- UCLA 0995 G TA470 (subaward; Sloan Foundation/DCO): Extreme Physics and Chemistry of Carbon: Forms, Transformations and Movements in Planetary Interiors. 11/01/2015-10/31/2017. \$56,000 (sole-PI)
- NSF EAR-1053816: Acquisition of a Walker-style Multi-Anvil Device for High Pressure-Temperature Petrology and Geochemistry Research. 06/01/2012-05/31/2016. \$377,046 (sole-PI)
- UCLA 0995 G RA451 (subaward Sloan/DCO): Physics and Chemistry of Carbon at Extreme Conditions. 01/01/2014-12/31/2015. \$56,000 (sole-PI)
- Sloan Officer Grant B2013-25: A Meeting on “New Generation Technology in Deep Carbon Science” and a Pilot Study on Decarbonation of Deep Continental Crust via Magma-Crust Interaction. 07/01/2013-12/31/2014 (including 6 months no cost extension). \$96,566 (lead-PI: Dasgupta; Co-PI: Lee)
- NSF OCE-0841035: MARGINS Collaborative Research: Melting of Carbonate-bearing Sediments in Subduction Zones. 07/01/2009-06/30/2013 (including 1 year no cost extension). \$266,942 (Rice portion) (lead-PI: Dasgupta, Rice; Co-I: Class, LDEO)
- NSF EAR-0911442: Melting of Carbonated MORB-like Eclogite and Genesis of Ocean Island Basalts. 07/01/2009-06/30/2013 (including 1 year no cost extension). \$293,267 (sole-PI)
- USRA 02180-01 (sub award): Acid Fog on Mars II: Experimental and Analytical Studies on Halogens in Martian Basalts and their Fluids. 09/01/2009-07/31/2011. \$189,326 (original NASA grant NNX09AL25G to Treiman, A. and Filiberto, J.)

PROFESSIONAL SERVICE AND SYNERGISTIC ACTIVITIES

2021

- AGU Macelwane Medal Committee member

2020

- Member of the MSA Committee of nominating officers
- Scientific theme committee chair for Goldschmidt conference in 2020
- AGU Macelwane Medal Committee member

2019

- NSF Panel member
- Scientific theme committee chair for Goldschmidt conference in 2020
- NASA Panel member for 2 separate panels
- AGU Macelwane Medal Committee member

2018

- Chair of the MSA Committee of nominating officers
- NASA Panel member
- Co-convenor – special session “Geochemical and Geodynamical Constraints on the Origin and Evolution of Planetary Bodies” in Goldschmidt Conference, Boston, USA (with Prissel, K., Sio, C. K. I., Helffrich, G., Weller, M., and Duncan, M.)
- DFG Panel member
- MSA Councilor (2016-2018)
- AGU Macelwane Medal Committee member
- MSA-GS liaison on Geochemical Society Program Committee
- Chair of the Geochemical Society Program Committee

2017

- MSA Councilor (2016-2018)
- MSA Lecture program committee member 2015-17
- Chair of the Roebling Medal committee
- MSA-GS liaison on Geochemical Society Program Committee

- Member for Ingerson lecturer selection committee
- VGP Kuno Award (AGU) Committee member
- AGU Macelwane Medal Committee member

2016

- Co-convener – special session “Carbon from Mantle to Surface and back Again” in Fall AGU Conference, San Francisco, USA (with Plank, T. and Burton, M.)
- MSA Councilor (2016-2018)
- MSA Lecture program committee member 2015-17
- Chair of the Kraus Crystallographic Research Fund Committee
- MSA-GS liaison on Geochemical Society Program Committee
- Member for Ingerson lecturer selection committee
- VGP Kuno Award (AGU) Committee member

2015

- MSA Councilor (2016-2018)
- MSA-GS liaison on Geochemical Society Program Committee
- Co-convener – special session “Endogeneous Mantle Melting” in Fall AGU Conference, San Francisco, USA (with Katz, R., Asimow, P., and Le Roux, V.)
- Co-convener of a DCO-CIDER joint workshop on “Carbon from the Mantle to the Surface” – July 1-3, 2015 (with Plank, T. and Burton, M)
- Discussion leader “Interior of the Earth” GRC in Mount Holyoke, MA, USA – June
- VGP Kuno Award (AGU) Committee member
- DFG Panel member
- MSA Lecture program committee member 2015-17

2014

- Invited participant – Deep Carbon Observatory Extreme Physics and Chemistry Workshop
- NASA Panel Member
- Co-convener – special session “Compositions of the Interior of the Terrestrial Planets – Causes and Consequences” in Goldschmidt Conference, Sacramento, USA (with Day, J.)
- Co-convener – special session “Evolution of the terrestrial volatile budget through magma oceans, giant impacts, the late veneer, and subsequent Earth history” in Goldschmidt Conference, Sacramento, USA (with Marty, B. and Hirschmann, M. M.)
- Scientific program committee team member – Theme ‘Early Earth’ in Goldschmidt Conference, Sacramento, USA
- Organizer of the DCO-Industry partnership meeting “New Generation Technology in Deep Carbon Science”, Rice University, Houston, TX, USA

2013

- Co-convener – special session “Melting and Melt-Rock Reactions from Source to Surface” in Fall AGU Conference, San Francisco, USA (with Hesse, M., Müntener, O., and Phipps-Morgan, J.)
- Co-convener – special session “Data-driven Science in Geochemistry, Petrology, and Volcanology” in Fall AGU Conference, San Francisco, USA (with Lehnert, K., Ghiorsio, M., and Cottrell, E.)
- Invited participant – Deep Carbon Observatory Extreme Physics and Chemistry Workshop
- Senior participant and lecturer – CIDER Summer program
- Co-organizer – EarthCube domain workshop for Petrology-Geochemistry (with Cottrell, E., Lehnert, K.)
- Invited participant and panel member for the ‘Carbon in Earth’ book launch – DCO International Meeting, National Academy of Science, Washington DC, USA
- NSF EAR Panel Member
- Program committee member – 44th LPSC Conference, Woodlands, Texas, USA

2012

- Co-convener – special session “Deep Cycles of Volatiles in Terrestrial Planets through Time” in Goldschmidt Conference, Montreal, Canada (with Shimizu, N. and Mookherjee, M.)
- Co-chair – special session “Planetary Interiors: Dynamics and Differentiation” in 43rd LPSC Conference, Woodlands, Texas, USA. (with Hillgren, V.)

2011

- Co-convener – special session “Volatiles in Mantle and Magma Processes” in Goldschmidt Conference, Prague, Czech Republic (with Shaw, A. and Frost, D.)
- Scientific program committee member – Goldschmidt Conference, Prague, Czech Republic
- Discussion Leader (INVITED) – Chapman Conference – The Galápagos as a Laboratory for the Earth Sciences, Galápagos, Ecuador
- Participant – Gordon Research Conference – Interior of the Earth, June 2011, Mt Holyoke, MA, USA.
POSTER PRESENTATION: “SILICATE MELTING IN THE EARTH’S DEEP UPPER MANTLE CAUSED BY C-O-H VOLATILES” (with Tsuno, K., Withers, A. C., Mallik, A.)

2010

- NSF EAR Petrology-Geochemistry Panel Member.
- Participant (INVITED) – IODP-Deep Carbon Observatory organized workshop on “Reaching the Mantle Frontier: Moho and Beyond”, September, 2010, Geophysical Laboratory, Washington, DC.
- Co-convener – special session “Volatiles in Earth & Planetary Interiors” in Goldschmidt Conference, Knoxville, Tennessee, USA (with Hauri, E. G., Shaw, A., Jones, A., and Filiberto, J.)
- Co-convener – special session “Mantle Reservoirs and their Creation” in Goldschmidt Conference, Knoxville, Tennessee, USA (with Jackson, M. G. and Day, J.)
- Participant (INVITED) – MARGINS successor planning workshop, San Antonio, Texas, Feb 15-17
POSTER PRESENTATION: “MELTING PHASE RELATION OF ANHYDROUS, CARBONATED PELITIC-ECLOGITE AT 2.5-3.0 GPA AND DEEP CYCLING OF SEDIMENTARY CARBON” (with Tsuno, K.)

2009

- Co-convener – special session in American Geophysical Union Fall Meeting 2009 “Volatiles in the Earth – from past to present”, San Francisco, California, USA (with Gonnermann, H. M.)
- Co-chair – “Planetary Differentiation” session in the 40th LPSC, Woodlands, Texas, USA. (with McDonough, W.)
- Guest editor – special volume in *Chemical Geology* on “Volatiles and Volatile-bearing Melts in the Earth’s Interior” (with Dixon, J. E.)

2008

- Co-convener – special session “Primary melt generation and dynamics of melt transport and storage” under the themes ‘Magmatic Processes’, ‘Mantle Geochemistry’, ‘Mantle Dynamics’, and ‘Subduction Processes’ in Goldschmidt Conference, Vancouver, Canada (with Katz, R. F. and Standish, J.)

2007

- Co-convener – special session in American Geophysical Union Fall Meeting 2007 “Volatiles and Melts in the Earth’s Interior”, San Francisco, California, USA (with Aubaud, C., Dixon, J. E., and Leahy, G.)
- Co-organizer – 2007-08 Geochemistry division seminar series, LDEO (with Siddall, M. and McGee, D.)
- Participant – Gordon Research Conference: Interior of the Earth, South Hadley, Massachusetts, USA. POSTER PRESENTATION: “SOLUBILITY OF CARBON IN CORE MELTS IN A SHALLOW MAGMA OCEAN ENVIRONMENT AND ITS BEARING ON DISTRIBUTION OF CARBON BETWEEN DEEP EARTH RESERVOIRS” (with Walker, D.)

2006

- Participant – Early Planetary Differentiation workshop, Sonoma County, California, USA - December
- Participant – CIDER summer program, Santa Barbara, California, USA - July
ORAL PRESENTATION: “MANTLE MELTING AND CARBON CYCLE” (with Withers A. C. and Hirschmann, M. M.)
- Co-chair – special session in American Geophysical Union Joint Assembly 2006 "Earth's Carbon Cycle: Sources, Recycling Pathways, and Geochemical Evolution", Baltimore, Maryland, USA. (with Shaw, A.)

2005

- Participant – VLAB workshop, Minneapolis, Minnesota, USA.
POSTER PRESENTATION: “MELTING OF CARBONATED PERIDOTITE BENEATH OCEANIC RIDGES” (with Hirschmann, M. M.)
- Participant – Gordon Research Conference: Interior of the Earth, South Hadley, Massachusetts, USA.
POSTER PRESENTATION: “CARBONATE STABILITY, CARBON STORAGE, AND DEEP MELTING IN EARTH’S UPPER MANTLE CONSTRAINED BY THE SOLIDUS OF NATURAL PERIDOTITE + CO₂” (with Hirschmann, M. M.)

2004

- Co-organizer – 2004-05 Department of Geology & Geophysics seminar series, University of Minnesota. (with Courtier, A. M.)

2003

- Participant – 4th EUROCARB Workshop, Canary Islands, Spain.

POSTER PRESENTATION: “CARBONATED OCEANIC CRUST AS A SOURCE OF CARBONATITE IN THE UPPER MANTLE (with Withers, A. C. and Hirschmann, M. M.)

- Participant – Gordon Research Conference: Interior of the Earth, South Hadley, Massachusetts, USA. POSTER PRESENTATION: “CARBONATED ECLOGITE SOLIDUS UNDER UPPER MANTLE CONDITIONS” (with Withers, A. C. and Hirschmann, M. M.)

2000

- Participant – Student Symposium of UNESCO-AIEJ Youth Exchange Program and General Symposium on the Central Indian Tectonic Zone, Jadavpur University, Calcutta, India.
ORAL PRESENTATION: “PYROXENE EXSOLUTION: NATURE OF RETRIEVABLE INFORMATION”

Solicited journal reviews (In alphabetical order) – *American Mineralogist*, *Chemical Geology*, ***Communications Earth and Environment***, *Contributions to Mineralogy and Petrology*, *Earth and Planetary Science Letters*, *Elements*, *Geochemical Perspective Letters*, *Geochimica et Cosmochimica Acta*, *G-cubed*, *Geology*, *Geophysical Research Letters*, *Gondwana Research*, *Journal of the Geological Society-London*, *Journal of Geophysical Research-Planet*, *Journal of Geophysical Research-Solid Earth*, *Journal of Petrology*, *Lithos*, ***Nature***, ***Nature Communications***, ***Nature Geoscience***, ***Nature Materials***, *Physics and Chemistry of Minerals*, *Physics of the Earth and Planetary Interiors*, *Precambrian Research*, ***PNAS***, *Reviews of Geophysics*, ***Science***, ***Science Advances***, *Scientific Reports*,

Solicited grant proposal reviews – *National Science Foundation (EAR – Petrology, Geochemistry; EAR – Deep Earth Processes; Instrumentation and Facilities; CSEDI; EAR – Post-doctoral Fellowship Program)*, *NASA (LASER; Cosmochemistry; MFRP, Emerging Worlds, Solar System Workings, Postdoctoral Program, Habitable Worlds, InSight PSP)*, *American Chemical Society PRF*, *Swiss National Science Foundation*, *French National Research Agency (ANR)*, *Natural Environmental Research Council (UK)*, *DFG (German Research Foundation)*, *HongKong*

INVITED PRESENTATIONS AND COLLOQUIA

2021

102. Louisiana State University, Baton Rouge, LA – November 19
“ESTABLISHING THE BUDGETS OF LIFE-ESSENTIAL VOLATILE ELEMENTS ON EARTH AND OTHER ROCKY BODIES”
101. Tulane University, New Orleans, LA – November 12
“EVOLUTION OF CONTINENTS FROM BOTTOM UP”
100. Indian Institute of Science, Education, and Research, Kolkata, India – October 24
“CRATONIC LITHOSPHERE THINNING THROUGH TIME IN AREAS OF KIMBERLITIC MAGMATISM”
99. Bayerisches Geoinstitut, Universität Bayreuth, Germany – September 23
“THE FATE OF NITROGEN DURING ACCRETION AND DIFFERENTIATION OF ROCKY PLANETS”
98. NASA RCN Prebiotic Chemistry and Early Earth Environments Seminar – August 26
“EARLY EARTH ENVIRONMENT AND ORIGIN AND CYCLES OF LIFE-ESSENTIAL VOLATILES – A TOPICAL INTRODUCTION”
97. Department of Geology, University of Maryland – March 26
“THE ACQUISITION OF NITROGEN AND OTHER LIFE-ESSENTIAL VOLATILE ELEMENTS ON EARTH AND OTHER INNER SOLAR SYSTEM ROCKY BODIES”

2020

96. AGU’s Student and Early Career Scientist Conference (SECSC) – December 1
“EFFECTIVE MENTORSHIP IN EARTH AND PLANETARY SCIENCES”
95. Astrobiology, University of Washington – November 17
“THE FATE OF LIFE-ESSENTIAL VOLATILE ELEMENTS DURING FORMATION AND DIFFERENTIATION OF ROCKY PLANETS”
94. Vaibhav summit 2020 (IISER Kolkata) – October 25
“DEEP INTERIOR PROCESSES, MANTLE-CLIMATE FEEDBACK, AND HABITABILITY OF ROCKY PLANETS”
93. Earth2Earth Seminar Series (All UK Universities) – August 20
“MANTLE MELTING, DEEP CARBON CYCLE, AND THE RISE OF ATMOSPHERIC OXYGEN”
92. Gordon Research Conference, ‘Origins of Life’, Galveston, TX, USA – January 20
“LIFE-ESSENTIAL VOLATILE ELEMENTS DURING FORMATION AND DIFFERENTIATION OF ROCKY PLANETS”

2019

91. Fall AGU Meeting, San Francisco, CA, USA – December 09
“TRACKING THE LIFE-ESSENTIAL VOLATILE ELEMENTS THROUGH FORMATION OF ROCKY PLANETS”
90. Fall AGU Meeting, San Francisco, CA, USA – December 10
“GENERATION OF KIMBERLITIC MELT – EXPERIMENTAL AND NATURAL THERMOBAROMETRIC CONSTRAINTS AND INSIGHTS INTO MATERIALS TRANSFER ACROSS MANTLE TRANSITION ZONE”
89. EOAS, Florida State University, Tallahassee, FL, USA – November 22
“ORIGIN AND EARLY DIFFERENTIATION OF LIFE-ESSENTIAL VOLATILE ELEMENTS ON EARTH”
88. Deep Carbon 2019: Launching the Next Decade of Deep Carbon Science, Washington, D.C., USA – October 24
“CLEVER Planets”
87. Goldschmidt Conference, Barcelona, Spain – August 19
“CONTROL OF ACCRETION AND EARLY DIFFERENTIATION PROCESS ON THE DIVERSITY OF VOLATILE INVENTORY OF ROCKY SOLAR SYSTEM OBJECTS” **[KEYNOTE]**
86. Department of Geological Sciences, Texas Christian University – February 01
“ORIGIN AND EARLY DIFFERENTIATION OF LIFE-ESSENTIAL VOLATILE ELEMENTS ON EARTH”
2018
85. Goldschmidt Conference, Boston, MA, USA – August 14
“CORE-MANTLE FRACTIONATION OF CARBON IN MAGMA OCEANS OF INNER SOLAR SYSTEM BODIES: THE ROLE OF SULFUR”
84. Gordon Research Conference, Deep Carbon Science, Bryant University, Smithfield, RI, USA – June 17-22
“THE POSSIBLE FATES OF CARBON AND RELATED VOLATILES DURING TERRESTRIAL ACCRETION AND MAGMA OCEAN DIFFERENTIATION”
83. Earth in 5 Reactions DCO Workshop, Washington D. C. – March 22
“CARBON OUTGASSING REACTIONS FOR EARTH THROUGH SPACE AND TIME”
82. Roy M. Huffington Department of Earth Sciences, Southern Methodist University, Dallas, TX, USA – March 2
“THE CONTROL OF SUBDUCTION ZONE CARBON CYCLE ON EARTH'S LONG-TERM CLIMATE”
81. Department of Earth & Environmental Sciences, Boston College, Boston, USA – February 6
“THE INFLUENCE OF SUBDUCTION ZONE CARBON CYCLE ON EARTH'S LONG-TERM CLIMATE”
2017
80. School of Earth, Ocean and Environment, University of South Carolina, Columbia, SC, USA – November 30
“THE INFLUENCE OF SUBDUCTION ZONE CARBON CYCLE ON EARTH'S LONG-TERM CLIMATE”
79. DCO-EPC Workshop, Tempe, Arizona – November 5
“VOLATILE BEARING PARTIAL MELTS BENEATH OCEANS AND CONTINENTS – WHERE, HOW MUCH, AND OF WHAT COMPOSITIONS?”
78. Goldschmidt Conference, Paris, France – August 16
“LIMITED DISSOLUTION OF ORGANIC CARBON IN SLAB MELT CAUSES THE RISE OF ATMOSPHERIC O₂ ACROSS GOE”
77. DCO Modeling workshop, Vernadsky Institute, Moscow, Russia – May 25
“THE ORIGIN AND EARLY EVOLUTION OF CARBON ON EARTH”
76. 3rd DCO International Meeting, University of St Andrews, St Andrews, Scotland, UK – March 23
“CARBON AND SULFUR BUDGET OF THE SILICATE EARTH EXPLAINED BY ACCRETION OF DIFFERENTIATED PLANETARY EMBRYOS”
2016
76. Department of Geological Sciences, Jadavpur University, Kolkata – December 14
“ORIGIN OF VOLATILES (MOSTLY CARBON) IN THE BULK SILICATE EARTH – AN INSIDE JOB?”
75. European Mineralogical Conference (EMC), Rimini, Italy – September 12-15
“SUBDUCTION EFFICIENCY OF CARBONATES THROUGH GEOLOGIC TIME AND THE ROLE OF SLAB-DERIVED MELTS IN TRANSPORTING CO₂ TO VOLCANIC ARCS” **[KEYNOTE]**
74. Goldschmidt Conference, Yokohama, Japan – July 01
“THE FATE OF SULFUR DURING MANTLE MELTING – IMPLICATIONS FOR THE MANTLE SULFUR BUDGET AND THE MODE OF DEEP CARBON STORAGE **[KEYNOTE]**”
73. Goldschmidt Conference, Yokohama, Japan – June 28
“EFFICIENCY OF ORGANIC CARBON SUBDUCTION CONSTRAINED BY THE SOLUBILITY OF CARBON IN HYDROUS SLAB MELT AT GRAPHITE SATURATED CONDITIONS”
72. CIG Community Workshop, UC Davis, Davis, CA – June 20
“EARTH'S DEEP SULFUR CYCLE AND ITS EFFECTS ON OTHER VOLATILES”
71. CIDER Community Workshop, Marconi Center, CA – May 17-20
“EARTH'S DEEP SULFUR CYCLE”

70. Department of Geological Sciences, Michigan State University, East Lansing, MI – February 5
“EARTH’S DEEP CARBON CYCLE – ORIGIN, STORAGE, INGASSING, AND OUTGASSING”
69. Institute of Geochemistry and Petrology, Department of Earth Sciences, ETH, Zurich – January 12
“ORIGIN OF VOLATILES IN THE BULK SILICATE EARTH – AN INSIDE JOB?”
- 2015
68. Department of Earth and Planetary Science, Harvard University, MA – September 21
“EARTH’S DEEP CARBON CYCLE – ORIGIN, INGASSING, STORAGE, AND OUTGASSING”
67. Packard Fellows meeting, Monterey Bay, CA – September 9-11
“EARTH’S DEEP AND NOT SO DEEP VOLATILE CYCLES”
66. Goldschmidt Conference, Prague, Czech Republic – August
“ORIGIN AND EVOLUTION OF C-O-H VOLATILES IN TERRESTRIAL MAGMA OCEAN, EARTH’S HADEAN MANTLE, AND ATMOSPHERE”
65. University of Texas at Austin, The Jackson School of Geosciences – February 19
“VOLATILE CYCLES OF EARTH AND PLANETS - GEOCHEMICAL, GEOPHYSICAL, AND CLIMATIC IMPLICATIONS”
64. Department of Earth and Environmental Sciences, University of Rochester – January 30
“EARTH’S DEEP CARBON CYCLE – ORIGIN, STORAGE, INGASSING, AND OUTGASSING”
- 2014
63. AGU Fall meeting, San Francisco, California – December 15
“LITHOSPHERE AND ASTHENOSPHERE PROPERTIES BENEATH OCEANS AND CONTINENTS AND THEIR RELATIONSHIP WITH DOMAINS OF PARTIAL MELT STABILITY IN THE MANTLE”
62. AGU Fall meeting, San Francisco, California – December 15
“CARBON DISSOLUTION IN REDUCED SILICATE AND ALLOY MELTS – A FRONTIER FOR UNDERSTANDING EVOLUTION OF TERRESTRIAL PLANETS”
61. Dave Walker retirement symposium, Lamont-Doherty Earth Observatory – December 05
“‘CORE’ ISSUES OF MANTLE VOLATILES”
60. Institut für Geowissenschaften, Universität Frankfurt – November 18
“PETROLOGY: A WINDOW INTO CRUSTAL AND MANTLE PROCESSES”
59. Institut für Geowissenschaften, Universität Frankfurt – November 17
“EARTH’S DEEP CARBON CYCLE – ORIGIN, STORAGE, INGASSING, AND OUTGASSING”
58. Workshop on Volatiles in the Martian Interior, USRA, Houston, Texas – November 3-5
“CARBON IN THE MARTIAN INTERIOR: CORE-MANTLE FRACTIONATION AND EXTRACTION BY MANTLE MELTING AT OXIDIZED CONDITIONS”
57. MSA/GSA Short Course on Deep Carbon Through Deep Time, Vancouver, Canada – October 18
“THE DEEP CARBON CYCLE THROUGH DEEP TIME”
56. EPC Meeting of DCO, UCLA – October 4
“CARBON IN ALLOY-BEARING MAGMA OCEANS OF TERRESTRIAL PLANETS”
55. Lamont-Doherty Earth Observatory, Columbia University – February 26
“SULFUR CYCLE IN DEEP EARTH AND MARS CONSTRAINED BY LABORATORY EXPERIMENTS”
- 2013
54. AGU Fall meeting, San Francisco, California – December 9
“SULFUR CONCENTRATION OF HIGH-FeO* BASALTS AT SULFIDE SATURATION AT HIGH PRESSURES AND TEMPERATURES – IMPLICATIONS FOR DEEP SULFUR CYCLE ON MARS”
53. Packard Fellows meeting, Denver, Colorado – September 11-14
“DEEP RECYCLING OF CARBON AND SULFUR”
52. Special session - “Deep transport of Subducted Material: Escaping the Meat Grinder”; Goldschmidt, Florence, Italy – August 25-30 [KEYNOTE]
“DEEP SUBDUCTION OF CARBON AND SULFUR CONSTRAINED BY LABORATORY EXPERIMENTS”
51. Special session - “New Tracers in Mantle Geochemistry”; Goldschmidt, Florence, Italy – August 25-30 [KEYNOTE]
“TRACING WHOLE-EARTH CARBON FROM THE HADEAN TO PRESENT”
50. IAVCEI 2013, Kagoshima, Japan – July 23 [KEYNOTE]
“DEEP VOLATILE-INDUCED MELTING, CRUSTAL MELT-PERIDOTITE INTERACTIONS, AND THE GENERATION OF PRIMARY OCEAN ISLAND BASALTS IN THE EARTH’S AMBIENT MANTLE”
49. CIDER Summer School, Berkeley, California – July 16
“EARTH’S DEEP CARBON CYCLE WITH AN EMPHASIS ON SUBDUCTION ZONES AND CONTINENTAL LITHOSPHERIC MANTLES”
48. CIDER Summer School, Berkeley, California – July 9

- “MAGMAGENESIS BENEATH RIDGES AND IN SUBDUCTION ZONES”
47. Scripps Oceanographic Institution, UCSD – May 06
“VOLATILE-RICH MELTS IN THE EARTH’S UPPER MANTLE – GEOPHYSICAL AND GEOCHEMICAL CONSEQUENCES”
46. EGU Meeting, Vienna, Austria – April 7-12 [**Kuno Award Lecture**]
“VOLATILE-RICH MELTS IN THE EARTH’S UPPER MANTLE”
- 2012
45. AGU Fall Meeting, San Francisco – December 6
“CARBON SOLUTION IN CORE-FORMING MAGMA OCEAN CONDITIONS: IMPLICATIONS FOR THE ORIGIN AND DISTRIBUTION OF TERRESTRIAL CARBON”
44. Center for Earth Sciences, Indian Institute of Science, Bangalore, India – November 2
“INGASSING, STORAGE, AND OUTGASSING OF TERRESTRIAL CARBON THROUGH GEOLOGIC TIME – AN EXPERIMENTAL OUTLOOK”
43. Department of Earth and Planetary Science, University of California, Berkeley – September 27
“INGASSING, STORAGE, AND OUTGASSING OF TERRESTRIAL CARBON THROUGH GEOLOGIC TIME”
42. The Mantle of Mars workshop, Lunar and Planetary Institute, Houston – September 10
“IS MARTIAN MANTLE TOO REDUCED TO ALLOW CARBONATED SILICATE MELT GENERATION?”
41. Packard Fellows meeting, Monterey Bay, CA – September 7
“MAGMA OCEAN CARBON CYCLE”
40. Department of Earth and Space Sciences, University of California, Los Angeles – March 8
“INGASSING, STORAGE, AND OUTGASSING OF TERRESTRIAL CARBON THROUGH GEOLOGIC TIME”
39. Lamont-Doherty Earth Observatory, Columbia University – February 10
“INGASSING AND OUTGASSING OF TERRESTRIAL CARBON THROUGH TIME”
- 2011
38. CIDER mini-symposium, San Francisco – December 10
“THE INFLUENCE OF MAGMA OCEAN PROCESSES ON THE PRESENT-DAY INVENTORY OF DEEP EARTH CARBON”
37. AGU Fall Meeting, San Francisco – December 8
“GENERATION OF ALKALIC INTRAPLATE BASALTS VIA PARTIAL MELTING OF A CARBONATED MANTLE”
36. AGU Fall Meeting, San Francisco – December 7
“THE DEPTH AND EXTENT OF VOLATILE-FLUXED MANTLE MELTING BENEATH RIDGES AND PLATES”
35. Bayerisches Geoinstitut, Universität Bayreuth, Germany – October 25
“MANTLE HYBRIDIZATION THROUGH MELT-ROCK REACTION - COMPOSITION AND TEMPERATURE OF OCEAN ISLAND BASALT SOURCE REGIONS”
34. Bayerisches Geoinstitut, Universität Bayreuth, Germany – October 24
“FROM CRUSTAL RECYCLING TO MAGMA OCEAN - EARTH'S DEEP CARBON CYCLE THROUGH TIME”
33. University of Texas at Austin, The Jackson School (Petrology-Geochemistry-Structure-Tectonics Brown Bag seminar) – September 30
“MANTLE HYBRIDIZATION THROUGH MELT-ROCK REACTION AND GENESIS OF ALKALIC OCEAN ISLAND BASALTS”
32. University of Texas at Austin, The Jackson School of Geosciences (The Virgil E. and Mildred L. Barnes Distinguished Lecture Series in Geology – September 29
“FROM CORE FORMATION TO CRUSTAL RECYCLING – EARTH’S DEEP CARBON CYCLE THROUGH TIME”
31. Boston University, Earth Science – September 22
“FROM MAGMA OCEAN TO CRUSTAL RECYCLING - EARTH'S DEEP CARBON CYCLE THROUGH TIME”
30. Packard Fellows meeting, Packard Foundation – September 8
“EARTH’S DEEP CARBON CYCLE”
29. Goldschmidt Conference, Prague, Czech Republic – August 15
“SILICATE MELTING IN THE EARTH’S DEEP UPPER MANTLE CAUSED BY C-O-H VOLATILES” [**Clarke Medal Talk**]
28. Chapman Conference – The Galápagos as a Laboratory for the Earth Sciences, Galápagos, Ecuador – July 26
“DISCUSSION LEADER: OCEAN ISLAND BASALTS AND MANTLE HETEROGENEITY”
- 2010
27. AGU Fall Meeting (Union Session), San Francisco – December
“PETROLOGY OF DEEP STORAGE, INGASSING, AND OUTGASSING OF TERRESTRIAL CARBON”
26. University of Maryland, Department of Geology – October 01
“PARTIAL MELTING IN A VOLATILE-BEARING, HETEROGENEOUS MANTLE AND GENESIS OF HIMU-EM OCEAN ISLAND BASALTS”
25. Meeting of the Americas, Foz do Iguasu, Brazil – August
“MELTING IN A VOLATILE BEARING, HETEROGENEOUS MANTLE AND GENESIS OF HIMU-EM OCEAN ISLAND BASALTS”

24. SEDI Meeting, Santa Barbara, CA – July 20
“DICHOTOMY OF THE DEEP EARTH CARBON AND WATER CYCLE – A REVIEW” **[KEYNOTE]**
23. University of Chicago, Department of Geophysical Sciences – April 30
“MANTLE HETEROGENEITY CONSTRAINED BY CHEMISTRY OF OCEAN ISLAND BASALTS AND EXPERIMENTAL PARTIAL MELTS”
22. MARGINS Planning Workshop, San Antonio, TX – February 15
“CARBON CYCLING IN SUBDUCTION ZONES – IMPLICATIONS FOR MANTLE-EXOSPHERE EXCHANGE”
2009
21. AGU Fall Meeting, San Francisco – December
“DEEP ONSET OF CARBONATED SILICATE MELTING IN THE EARTH’S UPPER MANTLE AND DEGASSING OF C-O-H VOLATILES TO THE EXOSPHERE”
20. Deep Carbon Observatory – Reservoirs and Fluxes workshop, San Francisco, CA – December 13
“HIGH PRESSURE PHASE RELATIONS IN Fe-C-S SYSTEMS: IMPLICATIONS FOR CARBON STORAGE IN DEEP EARTH METALS”
19. Yale University, Geology & Geophysics – October 14
“THE ONGOING AND THE EARLY DIFFERENTIATION OF EARTH AND OTHER PLANETS: THE ROLE OF VOLATILES”
18. University of Michigan, Geological Sciences – September 25
“MAJOR ELEMENT AND VOLATILE HETEROGENEITY IN THE EARTH’S MANTLE”
17. Goldschmidt Conference, Davos, Switzerland – June
“MAJOR ELEMENT AND VOLATILE HETEROGENEITY IN THE EARTH’S MANTLE AND GENERATION OF OCEANIC BASALTS” **[KEYNOTE]**
16. Goldschmidt Conference, Davos, Switzerland – June
“VOLATILE-INDUCED METASOMATIC MELTING IN TERRESTRIAL PLANETS”
15. The Deep Carbon Cycle Workshop, ETH Zürich, Switzerland – June 18-20
“MELTING OF (SUBDUCTED) CARBONATED MATERIALS” **[KEYNOTE]**
14. CIDER Community Workshop, Marconi Center, CA – May 17-20
“MANTLE PETROLOGY: FINDING A MIDDLE GROUND BETWEEN GEOCHEMICAL AND GEOPHYSICAL VIEW OF THE EARTH’S INTERIOR”
13. Lunar and Planetary Institute, USRA – April 23
“GLOBAL TRENDS BETWEEN RADIOGENIC ISOTOPES AND MAJOR ELEMENTS IN OCEAN ISLAND BASALTS (OIB): DEFINING THE "MANTLE ENDMEMBERS" USING MAJOR ELEMENTS ALONE”
12. Texas A&M University, Department of Geology and Geophysics – March 5
“METASOMATIC MELTING IN THE EARTH’S UPPER MANTLE INDUCED BY C-O-H VOLATILES - GEOCHEMICAL AND GEOPHYSICAL CONSEQUENCES”
11. University of Houston, Department of Earth and Atmospheric Sciences – January 23
“FROM CRUST TO CORE: A TALE OF DEEP CARBON CYCLE”
2008
10. Goldschmidt Conference, Vancouver, Canada – July
“HIGH-PRESSURE MELTING RELATIONS IN Fe-C-S SYSTEMS: IMPLICATIONS FOR METALLIC CORES IN PLANETARY BODIES”
9. COMPRES Annual Meeting, Colorado Springs – June 26
“THE ONGOING AND THE EARLY DIFFERENTIATION OF EARTH AND PLANETARY INTERIORS: THE ROLE OF VOLATILES” **[KEYNOTE]**
8. Sloan Deep Carbon Cycle Workshop, Carnegie Institute of Washington – May 15
“CARBON FLUX IN AND OUT OF THE EARTH’S MANTLE” **[KEYNOTE]**
2007
7. AGU Fall Meeting (Union session), San Francisco – December
“GEOCHEMICAL CONSEQUENCE OF EXTRACTION OF CO₂-RICH MELTS FROM EARTH’S DEEP UPPER MANTLE”
6. Brown University, Geology & Geophysics – November 1
“ALKALIC BASALTS FROM PARTIAL MELTING OF VOLATILE BEARING MANTLE”
5. Woods Hole Oceanographic Institution, Geology & Geophysics – September 28
“CARBON AND CARBONATES: FROM THE BOTTOM OF THE OCEAN TO THE DEPTHS OF THE EARTH”
4. University of Chicago, Department of Geophysical Sciences – May 4
“DEEP EARTH VOLATILE CYCLES: THE STORY OF CARBON”
2006
3. Rice University, Department of Earth Science – April 24
“EARTH’S DEEP CARBON CYCLE CONSTRAINED BY PARTIAL MELTING OF MANTLE PERIDOTITE AND ECLOGITE”
2. Lunar and Planetary Institute, USRA – March 1

“EARTH’S DEEP CARBON CYCLE CONSTRAINED BY PARTIAL MELTING EXPERIMENTS OF CARBONATED MANTLE PERIDOTITE AND ECLOGITE”

1. University of New Mexico, Institute of Meteoritics – February 2

“EARTH’S DEEP CARBON CYCLE CONSTRAINED BY PARTIAL MELTING EXPERIMENTS OF CARBONATED MANTLE PERIDOTITE AND ECLOGITE”

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

- American Geophysical Union (since 2001)
- Mineralogical Society of America (since 2002)
- Geochemical Society (since 2002)
- Geological Society of America (since 2013)