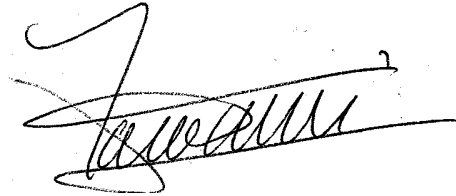


**Curriculum Vitae**  
**Laurent G. J. Montési**

Notarization. I have read the following and certify that this *curriculum vitae* is a current and accurate statement of my professional record.

Signature \_\_\_\_\_

A handwritten signature in black ink, appearing to read 'Laurent G. J. Montési', written over a horizontal line. The signature is stylized with a large initial 'L' and a long horizontal stroke.

Date\_\_10/9/18

# Curriculum Vitae

## I. PERSONAL INFORMATION

**Name:** Laurent G.J. Montési, (Appointment to Department 2007)  
**Title:** Associate Professor

**Address:** Department of Geology  
University of Maryland  
College Park, Maryland 20742  
(301) 405 7534  
montesi@umd.edu

**Website:** <http://www.geol.umd.edu/directory.php?id=18>

**ResearchID:** C-5216-2009

**Orcid:** 0000-0002-3519-1412



<b>Education:</b>	1996 - 2002	Ph.D. in Geophysics Department of Earth, Atmospheric, and Planetary Sciences, Massachusetts Institute of Technology, Cambridge, MA
	1993 - 1996	DEA Géodynamique et Physique de la Terre Univ. Paris-Sud (Paris XI, Orsay) and École Normale Supérieure, France
	1995 - 1996	Magistère Interuniversitaire de Physique École Normale Supérieure, Univ. Paris VI, VII, XI, and XIII, France
	1993 - 1995	Maîtrise de Physique Université Pierre et Marie Curie (Paris VI), Paris, France
	1993 - 1995	Licence de Physique Université Pierre et Marie Curie (Paris VI), Paris, France
	1991 - 1993	DEUG A, Sciences Université Poincaré (Nancy I), Vandœuvre-lès- Nancy, France

<b>Employment:</b>	2012-present	Associate Professor, Department of Geology, University of Maryland, College Park, MD
	2007-2012	Assistant Professor, Department of Geology, University of Maryland, College Park, MD
	2007	Associate Scientist, Department of Geology and Geophysics, Woods Hole Oceanographic Institution, Woods Hole, MA
	2003-2007	Assistant Scientist, Department of Geology and Geophysics, Woods Hole Oceanographic Institution, Woods Hole, MA
	2007	Visiting Professor (one month), Département Terre Atmosphère Océan, École Normale Supérieure Paris, France
	2001 - 2003	Postdoctoral Scholar, Department of Geology and Geophysics, Woods Hole Oceanographic Institution, Woods Hole, MA
	1996-2001	Ph. D. Candidate, Department of Earth, Atmospheric, and Planetary Sciences, Massachusetts Institute of Technology, Cambridge, MA
	1996	Intern (3 months), Laboratory of Volcanology, Université Paris-Sud (Paris XI) Orsay, France
	1995	Intern (6 months), Department of Earth and Space Sciences State University of New York at Stony Brook, Stony Brook, NY
	July 1994	Intern (1 month), Laboratory of crystallography and Mineralogy, Université Poincaré (Nancy I) Vandoeuvre-les-Nancy, France

### **Field Experience**

1998	Panamint Valley (CA, 8 days)
1999	Hawaii (HA, 15 days)
2000	Death Valley (CA, 2 days)
2002	Scotland (8 days)
2003	Italy (6 days)
	Josephine peridotite (OR, 3 days)
2004	Japan (3 days)
2005	April: Participated in the 22-day KM0505 “Alia” expedition to the Samoa seamounts chain

	Summer: Lead 10-day field excursion to the Superior province in Ontario
2006	Monte Rosa (Italy, 3 days)
2007	Front Range (Colorado, 2 days)
2009	South Armorican Shear Zone (France, 1 day)
2010	Canyon Lake Fault (Texas, 1 day)
2011	Cap de Creus (Spain, 3 days)
	Piemonte (Italy, 1.5 days)

## II. RESEARCH, SCHOLARLY, AND CREATIVE ACTIVITIES

\* Senior author

Corresponding or presenting author underlined

†† Undergraduate student

† Graduate student

‡ Postdoctoral Research and Faculty Research Associate (if directly mentored)

♠ Invited contribution

*(Number of Citations according to Google Scholar as of 03/29/2018)*

**h-index from ISI Web of Science: 18**

**h-index from Google Scholar: 21**

### a. Books

*i. Books authored.*

*ii. Books edited.*

*iii. Chapters in Books*

1. **2001** Montési, L.G.J.\*, 2001. Concentric dike swarms on the flanks of Pavonis Mons: Implications for the evolution of Martian shield volcanoes and mantle plumes, in *Mantle Plumes: Their Identification Through Time*. Geological Society of America Special Paper, 352. R. E. Ernst and K. L. Buchan (eds.), p. 165-181. (22)
2. **2002** Zhu, W.\*, L.G.J. Montési, and T.-f. Wong, 2002. Effects of stress on the anisotropic development of permeability during mechanical compaction of porous sandstones, in *Deformation Mechanisms, Current status and future perspectives*. Geological Society Special Publication, 200. S. de Meer, M. Drury, H. de Bresser, and G. Pennock (eds.). Geological Society, London, p.119-136. (13)
3. **2015** Walsh, L.S\*†, L.G.J. Montési, and A.J. Martin, Coulomb stress transfer and modeled permanent vertical surface deformation from the August 2011, Mineral, Virginia, earthquake, in *The August 23, 2011 Earthquake in Central Virginia and its*

*Significance for Seismic Hazards in Eastern North America*, H.J. Wright, M.C. Chapman, and R. Green, Eds., Geological Society of America Special Paper 509, p.305-329, doi:10.1130/2015.2509(18). (2)

## **b. Articles in Refereed Journals**

### **1997**

1. Zhu, W.\*, L. Montési, and T.-f. Wong, 1997. Shear-enhanced compaction and permeability reduction: Triaxial extension tests on porous sandstone. *Mechanics of Materials*, 25, 199-214, doi:10.1016/S0167-6636(97)00011-2. (90)

### **2002**

2. Montési, L.G.J.\*, and M.T. Zuber, 2002. A unified description of localization for application to large-scale tectonics. *Journal of Geophysical Research*, 107, B3, 10.1029/2001JB000465. (123)

### **2003**

3. Montési, L.G.J.\*, and M.T. Zuber, 2003. Spacing of faults at the Scale of the Lithosphere and Localization Instability 1: Theory. *Journal of Geophysical Research*, 108, B2, 2110, doi:10.1029/2002JB001923. (34)
4. Montési, L.G.J.\*, and M.T. Zuber, 2003. Spacing of faults at the Scale of the Lithosphere and Localization Instability 2: Application to the Central Indian Basin. *Journal of Geophysical Research*, 108, B2, 2111, doi: 10.1029/2002JB001924. (21)
5. Montési, L.G.J.\*, and M.T. Zuber, 2003. Clues to the lithospheric structure of Mars from the spacing of wrinkle ridges. *Journal of Geophysical Research*, 108, 5048, doi: 10.1029/2002JE001974. (76)
6. Montési, L.G.J.\*, and G. Hirth, 2003. Grain size evolution and the rheology of ductile shear zones: From laboratory experiments to postseismic creep. *Earth and Planetary Science Letters*, 211, 97-110, doi: 10.1016/S0012-821X(03)00196-1. (104)
7. Zhu, W.\*, D.K. Smith, and L.G.J. Montési, 2003. Effects of regional slope on viscous flows: A preliminary study of lava terrace emplacement at submarine rift zones. *Journal of Volcanology and Geothermal Research*, 119, 145-159. (15)

### **2004**

8. Montési, L.G.J.\*, 2004, Controls of shear zone rheology and tectonic loading on postseismic creep. *Journal of Geophysical Research*, 109, B10404, doi: 10.1029/2003JB002925. (69)
9. Montési, L.G.J.\*, 2004. Postseismic deformation and the strength of ductile shear zones. *Earth, Planets, and Space*. 56, 1135-1142, doi: 0.1186/BF03353332. (11)

### **2005**

10. Deschamps, A.\*‡, T. Fujiwara, M. Asada, L.G.J. Montési, and P. Gente, 2005. Volcanism and faulting in the axial valley of the slow spreading center of the Mariana

back-arc basin from Wadatsumi side-scan sonar images. *Geochemistry, Geophysics, Geosystems* 6, (5) doi:10.1029/2004GC000881. (16)

## 2007

11. Gregg, P.\*†, J. Lin, M.D. Behn, and *L.G.J. Montési*, 2007. Spreading rate dependence of the gravity structure of oceanic transform faults. *Nature*, 448, 183-187, doi: 10.1038/nature05962. (43)
12. Montési, L.G.J.\*, 2007. A constitutive model for layer development in shear zones near the brittle-ductile transition. *Geophysical Research Letters*, 34, L08307, doi:10.1029/2007GL029250. (30)
13. Montési, L.G.J.\*, and M.D. Behn, 2007, Mantle flow and melting underneath mid-ocean ridges, *Geophysical Research Letters*, 34, L24307, doi:10.1029/2007GL031067. (52)
14. Zhu W.\*, *L.G.J. Montési*, and T.-f. Wong, 2007. A micromechanics model of stress-induced anisotropic permeability reduction during compactive cataclastic flow, *Journal of Geophysical Research*, 112, B10207, doi:10.1029/2006JB004456 (30).

## 2008

15. Delescluse, M.\*†, *L.G.J. Montési*, and N. Chamot-Rooke, 2008, Fault reactivation and selective abandonment in the oceanic lithosphere, *Geophysical Research Letters*, 35, L16312, doi:10.1029/2008GL03506. (33)
16. Schouten, H.\*, D.K. Smith, *L.G.J. Montési*, W. Zhu, and E. Klein, 2008. Cracking of lithosphere North of the Galapagos triple junction, *Geology*, 36, 339-342, doi:10.1130/G24431A.1 (20)

## 2010

17. Zuber, M.T.\*, *L.G.J. Montési*, G.T. Farmer†, S. A. Hauck II, J. A. Ritzer†, R.J. Phillips, S.C. Solomon, D.E. Smith, M.J. Talpe†, J.W. Head III, G.A. Neumann, T.R. Watters, C.L. Johnson, 2010. Accommodation of lithospheric shortening on Mercury from altimetric profiles of ridges and lobate scarps measured during MESSENGER Flybys 1 and 2, *Icarus*, 209, 247–255, doi:10.1016/j.icarus.2010.02.026 (20).
18. Rondenay, S.\*, *L.G.J. Montési*, and G.A. Abers, 2010, New geophysical insight into the origin of the Denali volcanic gap, *Geophysical Journal International*, 182, 613-630, doi: 10.1111/j.1365-246X.2010.04659.x (26).
19. Hebert, L.B.\*‡ and *L.G.J. Montési*, 2010, Generation of permeability barriers during melt extraction at mid-ocean ridges, *Geochemistry, Geophysics, Geosystems*, 11, Q12008, doi:10.1029/2010GC003270 (41).

## 2011

20. Zhu\*, W., G.A. Gaetani, F. Fuisseis, *L.G.J. Montési*, and F. De Carlo, 2011, Microtomography of partially molten rocks: three-dimensional melt distribution in mantle peridotite, *Science*, 332, 88-91, doi:10.1126/science.1202221 (100)
21. Hebert, L.B.\* ‡ and *L.G.J. Montési*, 2011, Melt extraction pathways at segmented oceanic ridges: Application to the East Pacific Rise at the Siqueiros transform, *Geophysical Research Letters*, 38, L11306, doi:10.1029/2011GL047206 (21)

22. Mitchell, G.A. †, *L.G.J. Montési*\*, W. Zhu, D.K. Smith, and H. Schouten, 2011, Transient rifting North of the Galápagos triple junction, *Earth and Planetary Science Letters*, 307, 461-469, doi:10.1016/j.epsl.2011.05.027 (8).
23. *Montési, L.G.J.*\*, M.D. Behn, L.B. Hebert ‡, J. Lin, and J.L. Barry ††, 2011 Controls on melt migration and extraction at the ultraslow Southwest Indian Ridge 10°–16°E, *Journal of Geophysical Research*, 116, B10102, doi:10.1029/2011JB008259 (27).
24. *Smith, D.K.*\*, H. Schouten, W. Zhu, *L.G.J. Montési*, and J. Cann, 2012. Distributed deformation ahead of the Cocos-Naxca Rift at the Galapagos Triple Junction, revision *Geochemistry, Geophysics, Geosystems*, 12, Q11003, doi:10.1029/2011GC003689 (8).

## 2012

25. *Gregg, P.M.*\* ‡, L.B. Hebert ‡, *L.G.J. Montési*, and R.F. Katz, 2012. Geodynamic models of melt generation and extraction at mid-ocean ridges, *Oceanography*, 25 (1), 78-88, doi: 10.5670/oceanog.2012.05 (14)

## 2013

26. *Montési, L.G.J.*\*, 2013, Fabric development as the key for forming ductile shear zones and enabling plate tectonics, *Journal of Structural Geology*, 50, 254-266, doi: 10.1016/j.jsg.2012.12.011 (49)
27. *Smith, D.K.*\*, H. Schouten, *L. Montési*, and W. Zhu, 2013, The recent history of the Galapagos Triple Junction, *Earth and Planetary Science Letters*, 371–372, 6–15, doi: 10.1016/j.epsl.2013.04.018. (4)
28. Hebert, L.B.\* ‡ and *L.G.J. Montési*, 2013, Hydration adjacent to a deeply subducting slab: the roles of nominally anhydrous minerals and migrating fluids, *Journal of Geophysical Research*, 118, 5753-5770, doi:10.1002/2013JB010497 (11)

## 2014

29. *Miller, K.J.*\* †, W. Zhu, *L.G.J. Montési*, and G.A. Gaetani, 2014, Experimental quantification of permeability for partially molten mantle rocks, *Earth and Planetary Science Letters*, 388, 273-282, doi:10.1016/j.epsl.2013.12.003 (45)
30. *Johnston, S.A.*\* † and *L.G.J. Montési*, 2014, Formation of ridges on Europa above crystallizing water bodies inside the ice shell, *Icarus*, 237, 190-201, doi:10.1016/j.icarus.2014.04.026. (8)
31. *Gueydan, F.*\*, J. Précigout, and *L. Montési*, 2014, Strain weakening enables continental plate tectonics, *Tectonophysics* 631, 189-196, doi:10.1016/j.tecto.2014.02.005. (34)
32. *Montési, L.G.J.*\*, 2014, Erratum to “Fabric development as the key for forming ductile shear zones and enabling plate tectonics” [*J. Struc. Geol.*, 50 (2013), 254-266], *Journal of Structural Geology*, 69, 265, doi: 10.1016/j.jsg.2014.07.001
33. *Paczkowski, K.*\* ‡, *L.G.J. Montési*, M.D. Long, and C.J. Thissen †, 2014, Three-dimensional Flow in the Sub-slab Mantle, *Geosystems, Geochemistry, Geophysics*, 15 3989–4008, doi: 10.1002/ 2014GC005441 (13)

34. Paczkowski, K.\*†, C.J. Thissen†, M.D. Long, and *L.G.J. Montési*, 2014, Deflection of mantle flow beneath subducting slabs and the origin of sub-slab seismic anisotropy, *Geophysical Research Letters* 41, 6734–6742, doi:10.1002/2014GL060914. (10)

## 2015

35. Bai, H.\*†, and *L.G.J. Montési*, 2015, Slip-Rate Dependent Melt Extraction at Oceanic Transform Faults, *Geosystems, Geochemistry, Geophysics*, 16, 401–419, doi:10.1002/2014GC005579 (8).
36. Miller, K.J.\*†, *L.G.J. Montési*, and W. Zhu, 2015, Estimates of olivine-basaltic melt electrical conductivity using a digital rock physics approach, *Earth and Planetary Science Letters*, 432, 332–341, doi:10.1016/j.epsl.2015.10.004. (8)

## 2016

37. Rodríguez-González, J.\*†, M. Billen, A. M. Negredo, and *L.G.J. Montési*, 2016, Along-strike variation in subducting plate velocity induced by along-strike variation in overriding plate structure: insights from 3D numerical models, *Journal of Geodynamics*, 100, 175–183, doi: 10.1016/j.jog.2016.02.006 (3).
38. Miller, K.J.\*†, W. Zhu, *L.G.J. Montési*, G.A. Gaetani, V Le Roux, and X. Xiao, 2016, Experimental evidence for melt partitioning between olivine and orthopyroxene in partially molten harzburgite, *Journal of Geophysical Research*, 121 273–282, doi: 10.1002/2016JB013122 (1).
39. Watters, T.R., *L.G.J. Montési*, J. Oberts, and F. Preusker, 2016, Fault-bound valley associated with the Rembrandt Basin on Mercury *Geophysical Research Letters*, doi:10.1002/2016GL070205 (1).

## 2017

40. Bai, H.†, Montési, L. G. J. and Behn, M. D. (2017), MeltMigrator: A MATLAB-based software for modeling three-dimensional melt migration and crustal thickness variations at mid-ocean ridges following a rules-based approach. *Geochemistry, Geophysics, Geosystems*, 18, 445–456, doi:10.1002/2016GC006686 (1).
41. Berg, M.T.L.†, Bromiley, G.D., I.B. Butler, M. Frost., R. Bradley, J. Carr, Y. Le Godec, *L.G.J. Montesi*, W. Zhu, K. Miller, J.-P. Perrillat, E. Mariani, D. Tathan, S.A.T. Redfern, 2016, Deformation-aided segregation of Fe-S liquid from olivine under deep Earth conditions: Implications for core formation in the early solar system, *Physics of the Earth and Planetary Interiors*. 263, 38–54, doi: 10.1016/j.pepi.2017.01.004.
42. Johnston, S.A.\*† and *L.G.J. Montési*, 2017, The Impact of a Pressurized Regional Sea or Global Ocean on Stresses on Enceladus, *Journal of Geophysical Research*, 122, 1258–1275, doi:10.1002/2016JE005217 (1).
43. Lynner, C.\*†, M.D. Long, C.J. Thissen†, K. Paczkowski, and *L.G.J. Montési*, 2016, Evaluating geodynamic models for sub-slab anisotropy: Effects of olivine fabric type, *Geosphere*, 13, 247–259, doi:10.1130/GES01395.1 (5).

## 2018



44. Schools, J.W.\*† and L.G.J. Montési, 2018, The Generation of Barriers to Melt Ascent in the Martian Lithosphere, *Journal of Geophysical Research: Planets*, 123, 47-66, doi:10.1002/2017JE005396.

### In Press

45. ♠ Crameri, F.‡, C.P. Conrad, L.G.J. Montési, and C. Lithgow-Bertelloni, 2018, The Dynamic Life of an Oceanic Plate, *Tectonophysics*, In Press, Corrected Proof, Available online 03/28/2018, 10.1016/j.tecto.2018.03.016

### Submitted

#### c. Monographs, Reports, and Extension Publications.

- 2002 Montési, L.G.J.\*, 2002, Localization Instability and the Origin of Regularly-Spaced Faults in Planetary Lithosphere, Ph.D. Thesis, Massachusetts Institute of Technology. (7)
- 2005 Montési, L.G.J.\*, Modeling platform for 3D melt migration in plate boundaries, proposal to CIG (Computational Infrastructure in Geosciences). Published online on June 30, 2005. Available at [http://www.geodynamics.org:8080/cig/proposalsndocs/proposals/Montesi\\_elt\\_6-30-05.pdf](http://www.geodynamics.org:8080/cig/proposalsndocs/proposals/Montesi_elt_6-30-05.pdf). (Unrefereed)
- 2006 M. Spiegelman\* and L.G.J. Montési, Report to the CIG from the 2006 Magma Migration Workshop. Published online on September 01, 2006. Available at <http://www.geodynamics.org/cig/workinggroups/magma/workarea/report-magma06/> (Unrefereed)
- Montési, L.G.J.\*, Volcanism at the Slowest Spreading Ocean Ridges, Summer 2007 Annual report of the Deep Ocean Exploration Institute, Woods Hole Oceanographic Institution. Available at <http://www.whoi.edu/filesserver.do?id=57788&pt=10&p=40412> (Unrefereed)
- 2018 Huntington, K.W., and K.A. Klepeis, Challenges and opportunities for research in tectonics: Understanding deformation and the processes that link Earth systems, from geologic time to human time. A community vision document submitted to the U.S. National Science Foundation, University of Washington, 84 pp., doi:10.6069/H52R3PQ5. (Vision document contributor)

**d. Book Reviews, Other Articles, and Notes.**

2013        ♠ *Montési, L.G.J.\**, 2013, Solving the Mascon Mystery, Science, 340 (6140), 1535-1536, doi: 10.1126/science.1238099 (3)

**e. Talks, Abstracts, and Other Professional Papers Presented.**

*i.        Invited talks, etc.*

**International meetings**

- 2004**        2<sup>nd</sup> International Symposium on Slip and Flow Processes in and below the Seismogenic Region, Tokyo, Japan (*Keynote*)  
American Geophysical Union, Fall Meeting, San Francisco, CA
- 2006**        Gordon Research Conference on Rock Deformation, Big Sky, WY (*Keynote*)  
European Geophysical Union General Assembly, Vienna, Austria
- 2007**        American Geophysical Union, Fall Meeting, San Francisco, CA  
Seismological Society of America, Kona, HI
- 2008**        New challenges in earthquake dynamics: Observing and modeling a multi-scale system, Obergürgl, Austria (*Keynote*)
- 2010**        European Geophysical Union general assembly, Vienna, Austria  
2010 Workshop on Crustal Deformation Modeling, Golden CO (*Keynote*)
- 2011**        12<sup>th</sup> International Workshop on Lithosphere Dynamics, Groß Dölln, Germany (*keynote*)  
American Geophysical Union, Fall Meeting, San Francisco, CA  
European Geophysical Union general assembly, Vienna, Austria  
SIAM conference on Mathematical & Computational Issues in the Geosciences, Long Beach, CA (*keynote*)  
Workshop on "Ocean Mantle Dynamics: from Spreading Center to Subduction Zone", Kashiwa, Japan (*keynote*)
- 2012**        2012 Mantle Convection and Lithospheric Dynamics Workshop, Davis, CA (*keynote*)
- 2013**        4<sup>th</sup> Crystal2Plate Workshop, Frejus, France (*keynote*)
- 2014**        CIDER 2014 summer program, Santa Barbara, CA (*Lecturer*)  
GeoMod2014, Potsdam, Germany (*keynote*)  
"Structure and Dynamics of the interior of rocky planets" College de France workshop, Paris, France (*keynote*)

- 2015** CIDER 2015 summer program, Berkeley, CA(*Tutorial*)  
Geological Society of America, Baltimore, MD.
- 2016** Newton Institute, Melt in the Mantle Programme, University of  
Cambridge, UK
- 2017** Flow in the Earth symposium, Oslo, Norway.  
American Geophysical Union Fall Meeting, New Orleans, LA.

**Regional and national meetings**

- 2013** SCEC meeting: Ductile Rheology of the Southern California  
Lithosphere: Constraints from Deformation Modeling, Rock Mechanics  
and Field Observations, Menlo Park, CA  
  
DC-area Europa Workshop, Applied Physics Laboratory, Laurel, MD,  
Volcanology Workshop, Goddard Space Flight Center, Greenbelt, MD,
- 2015** SCEC Community Rheology Model Workshop, Palm Springs, CA
- 2018** SCEC Community Rheology Model Workshop, Palm Springs, CA

**Universities and Research Institutes**

- 2002** Washington University
- 2002** University of California Davis
- 2003** Rice University  
Washington University
- 2004** Georgia Tech
- 2005** Brown University  
SUNY Stony Brook  
GFZ Potsdam
- 2006** Géosciences Rennes  
Lunar and Planetary Science Institute
- 2007** University of Maryland  
École Normale Supérieure  
Université Montpellier  
Institut de Physique du Globe, Paris  
Boston University  
Johns Hopkins University  
Carnegie Institute of Sciences, Department of Terrestrial Magnetism

- 2008** Princeton University
- 2009** Université Cergy-Pontoise (Paris XIII)  
Geological Society of Washington
- 2010** Université of Maryland, Center for Scientific Computation and  
Mathematical Modeling (CSCAMM)
- 2011** Princeton University
- 2012** Goddard Space Flight Center
- 2013** National Museum of Natural History, Smithsonian Institution.
- 2014** Oklahoma State University.
- 2015** Yale University  
University of Illinois  
Geological Society of Washington
- 2016** Washington University of Saint Louis  
Virginia Tech  
University of Houston  
Cambridge University  
University College London  
Universitetet i Bergen  
Université Montpellier  
Centre for Earth Evolution and Dynamics, Universitetet i Oslo  
Physics of Geological Processes, Universitetet i Oslo
- 2017** Edinburgh University  
Université Paris VI  
Centre for Earth Evolution and Dynamics, Universitetet i Oslo

**ii. *Refereed conference proceedings.***

**iii. *Unrefereed conference proceedings.***

- 1995** Zhu, W.\*, L. Montési, and T.-f. Wong, 1995. Development of permeability during the cataclastic flow of sandstones. EOS Trans. Am. Geophys. Un., 76, Fall Meet. Suppl.
- 1997** Bébién, J.\*, L. Montési, and B. Bonin, 1997. Flank morphology and internal structure of the Tharsis shield volcanoes (Mars). Terra Nova, 9, abst. Suppl. 01, p. 192.

- Montési, L.G.J.\*, and M.T. Zuber, 1997. Short-wavelength compressional deformation in a strong Venusian lithosphere. Chapman Conf. Geodynamics of Venus: Evolution and Current State. (1)
- 1998** Montési, L.G.J.\*, and M.T. Zuber, 1998. The influence of localization of tectonic strain on lithospheric buckling. EOS Trans. Am. Geophys. Un., 79, Spring Meet. Suppl., S346. (3)
- Montési, L.G.J.\*, and M.T. Zuber, 1998. Modeling the development of faults: definition of the effective rheology of a continuum undergoing localization. EOS Trans. Am. Geophys. Un., 79, Fall Meet. Suppl., F846.
- 1999** Montési, L.G.J.\*, 1999. Concentric dike swarm and internal structure of Pavonis Mons (Mars). Lunar Planet. Sci. XXX, abstr. 1251. (6)
- Montési, L.G.J.\*, C.J. Marone, G. Hirth, and S.L. Karner, 1999. Frictional properties and microstructure of simulated diabase gouge at temperatures up to 400°C. EOS Trans. Am. Geophys. Union, 80, Fall Meet. Suppl., F689. (1)
- Montési, L.G.J.\*, and M.T. Zuber, 1999. The evolution of fault patterns during orogeny, EOS Trans. Am. Geophys. Union, 80, Spring Meet. Suppl., S345. (1)
- Montési, L.G.J.\*, and M.T. Zuber, 1999. The importance of localization for the development of large-scale structures in the Earth's crust. ASME Mech. & Mat. Conf., p. 307.
- Zhu, W.\*, D.K. Smith, and L.G.J. Montési, 1999. Effects of regional slope on viscous flows: A preliminary study of submarine terrace emplacement. EOS Trans. Am. Geophys. Union, 80, Fall Meet. Suppl., F1100. (1)
- 2000** Montési, L.G.J.\*, and M.T. Zuber, 2000. The lithospheric structure of the margin of Tharsis as indicated by wrinkle ridges, Tharsis - Evolution in light of MGS data, USGS workshop.
- Montési, L.G.J.\*, and M.T. Zuber, 2000. Can the ~5-km spacing of faults in the central basin of the Indian Ocean have developed during the current N-S shortening? EOS Trans. Am. Geophys. Union, 81, Fall Meet. Suppl., F1097.
- Montési, L.G.J.\*, M.T. Zuber, and O. Aharonson, 2000. Geometry of faults underlying wrinkle ridges on Mars: Dynamic modeling and MOLA topography. Lunar Planet. Sci. XXXI, abstr. 1927. (2)
- 2001** Montési, L.G.J.\*, and G. Hirth, 2001. Transient behavior of a shear zone deforming by combined dislocation and diffusion creep. EOS Trans. Am. Geophys. Union, 82, Fall Meet. Suppl. (1)
- Montési, L.G.J.\*, and M.T. Zuber, 2001. Crustal thickness control on Martian wrinkle ridge spacing. Lunar Planet. Sci. XXXII, abstr. 1879. (6)

- Montési, L.G.J.\*, and M.T. Zuber, 2001. Deep penetration of wrinkle ridges on Venus deduced from ridge spacing. GSA Meeting abstract.
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Wicks, J.K.\*‡, M.B. Weller†, N.J. Towles†, C. Thissen†, N.R. Knezek†, S. Johnston†, S. Hongsresawat†, M.S. Duncan†, B.A. Black‡, N. C. Schmerr, M.P. Panning, *L. Montési*, M. Manga, and P.H. Lognonné, 2014, Mars Thermal History: Core, Atmosphere, Mantle, Phobos and Surface (MaTH CAMPS), Fall AGU meeting, Abstract DI51A-4351

Bai, H.\*†, and *L.G.J. Montési*, 2014, Magmatism, Hydrothermal Cooling and Asymmetric Accretion at Slow-spreading Ridges, Fall AGU meeting, Abstract DI13B-4279

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2015

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Johnston, S.\*†, and L. Montési, 2015, The Impact of a Regional Sea on Stresses on Enceladus., 46<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX Abstract No. 2029

Duncan, M.S.\*†, M.B. Weller†, J.K. Wicks‡, N.R. Knezek†, B.A. Black‡, S.A. Johnston†, S. Hongsresawat†, N.J. Towles†, C. Thissen‡, N.C. Schmerr, M.P. Panning, L. Montési, M. Manga, and P. Lognonné, 2014, Mars Thermal History: Core, Atmosphere, Mantle, Phobos, and Surface (MaTH CAMPS)., 46<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX Abstract No. 2900

Montési, L.G.J.\* 2015, Mechanisms of localization on Modern Earth, Early Earth, and Venus, Comparative Tectonics and Geodynamics of Venus, Earth, and Rocky Exoplanets Workshop, Pasadena, CA, Abstract No. 5017

Johnston, S.\*†, Duncan, M.†, M. Weller†, J. Wicks‡, N. Knezek†, B. Black‡, S. Hongsresawat†, N. Towles†, C. Thissen‡, N. Schmerr, M. Panning, L. Montési, M. Manga, and P. Lognonné, Constraining thermal history through a multidisciplinary approach, Comparative Tectonics and Geodynamics of Venus, Earth, and Rocky Exoplanets Workshop, Pasadena, CA, Abstract No. 5035.

Martone, A.A.\*†, and L.G.J. Montési, 2015, Rift Stability and Localization in Devana Chasma, Venus, Comparative Tectonics and Geodynamics of Venus, Earth, and Rocky Exoplanets Workshop, Pasadena, CA, Abstract No. 5026.

Martone, A.A.\*†, and L.G.J. Montési, 2015, The role of rheological weakening in the formation of narrow rifts on Venus, AAS Division of Planetary Science, Abstract No. 217.7

Schools, J.\*†, and L.G.J. Montési, 2015, Permeability barrier generation in the Martian lithosphere, AAS Division of Planetary Science, Abstract No. 420.05

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♠ Montési, L.G.J.\*, 2015, How does the evolving fabric of rocks in shear zones affects the strength of continental or oceanic lithosphere?, Geological Society of America annual meeting, Baltimore, MD, Paper No. 103-3

Montési, L.G.J.\*, Y. Liao‡, H. Bai†, Z. Ma‡, R. Tao‡, and D. Syverson‡, R. Lowell, and T. Fischer, 2015, Coupled Porosity and

Chemical Evolution of Hydrothermal Circulation: Implications for the Morphology of Vents and Recharge Zones at Mid-Ocean Ridges, Fall AGU meeting, San Francisco, CA, Abstract OS43A-2008.

Miller, K.J.\*†, W. Zhu, *L.G.J. Montési*, 2015, Lithologic melt partitioning and transport properties of partially molten rocks, Fall AGU meeting, San Francisco, CA, Abstract MR23C-02.

**2016**

Johnston, S.A.\*‡, D.A. Patthoff‡, and *L.G. Montési*, 2016, Combining stresses from diurnal tides and a pressurized ocean on Enceladus, 47<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, Abstract No. 2092.

Martone, A.A.\*† and *L.G.J. Montési*, 2016, Lithospheric weakening effects on the development of narrow rifts on Venus, 47<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, Abstract No. 2104.

Schools, J.\*† and *L.G.J. Montési*, 2016, Generation of barriers to melt transport in the Martian lithosphere, 47<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, Abstract No. 2080.

Johnston, S.A.\*‡, D.A. Patthoff‡, and *L.G. Montési*, 2016, The importance of stresses from a pressurized regional sea on Enceladus, Geological Society of America annual meeting, Denver, CO, paper No. 48-11.

Montési, L.G.J.\*, and F. Gueydan, 2016, Strength and deformation rate of plate boundaries, 4<sup>th</sup> Serpentine Days, Sète, France.

Montési, L.G.J.\*, and F. Gueydan, 2016, Strength and Deformation Rate of Plate Boundaries, GeoMod2016, La Grande Motte, France.

Bai, H.\*† and *L.G.J. Montési*, 2016, Asymmetry in crustal thickness and spreading rate at mid-ocean ridges, Fall AGU meeting, San Francisco, CA, Abstr. OS31D-2067.

Izquierdo, K.\*†, *L.G.J. Montési*, and V. Lekic, 2016, Constraining Mass Anomalies Using Trans-Dimensional Gravity Inversions, Fall AGU meeting, San Francisco, CA, Abst. NS41A-1892.

Montési, L.G.J.\* and F. Gueydan, 2016, Strength and Deformation Rate of Plate Boundaries: The Rheological Effects of Grain Size Reduction, Structure, and Serpentinization, Fall AGU meeting, San Francisco, CA, Abstr. T14B-07.

Negredo, A.M.\*, J. Rodríguez-González‡, M.I. Billen, C.M. Eakin‡, and *L.G.J. Montési*, 2016, Seismic anisotropy in subduction zones: numerical modeling and infinite strain axis calculations, Fall AGU meeting, San Francisco, CA, Abts. T31E-2973.

Rodríguez-González, J.\*‡ and *L.G.J. Montési*, 2016, A new finite element code for the study of strain-localization under strike-slip faults, Fall AGU meeting, San Francisco, CA, Abst. DI23A-2594.



Schools, J.\*† and L.G.J. Montési, 2016, Effect of Water on the Formation of Barriers to Melt Transport in the Martian Lithosphere, Fall AGU meeting, San Francisco, CA, Abstr. DI34A-03.

Zhu, W. and L.G.J. Montési\*, 2016, Speed of melt migration along permeability barriers and the preservation of Uranium decay series disequilibrium, Fall AGU meeting, San Francisco, CA, Abstr. OS31D-2065.

**2017** Martone, A.A.\*† and L.G.J. Montési, 2017, Rift stability on Venus: Importance of weakening processes and strain rate, 48<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, Abstract No. 1802.

Schools, J.\*† and L.G.J. Montési, 2017, Formation of barriers to melt ascent at the base of the Ionian lithosphere, 48<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, Abstract No. 2723.

Montési, L.G.J.\* and S.A. Johnston, 2017, Is tectonic activity at the surface of Enceladus consistent with pressurization of a global ocean or a regional sea?, 48<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, Abstract No. 2013.

Montési, L.G.J.\* and S.A. Johnston, 2017, Tectonic activity on Enceladus in the context of a pressurized global ocean or regional sea, *Geophysical Research Abstracts* 19, EGU2017-13423, EGU General Assembly 2017, Vienna, Austria.

Montési, L.G.J.\* and F. Gueydan, 2017, Localising Plate Boundaries: Importance of Serpentinisation and Grain Size Reduction on the Rheology of the Lithosphere, *Geophysical Research Abstracts* 19, EGU2017-13226, EGU General Assembly 2017, Vienna, Austria.

Schools, J.\*† and L.G.J. Montési, 2017, Convection in horizontal decompaction channels at the base of the lithosphere, Fall AGU meeting, San Francisco, CA, Abstr. DI51A-0285.

Izquierdo, K.\*†, V. Lekic, and L.G.J. Montési, 2017, Constraining mass anomalies in the interior of spherical bodies using Trans-dimensional Bayesian Hierarchical inference, Fall AGU meeting, San Francisco, CA, Abstr. S32B-04.

♠ Montési, L.G.J.\* 2017, Metamorphism and Shear Localization in the Oceanic and Continental Lithosphere: A Local or Lithospheric-Scale Effect? Fall AGU meeting, San Francisco, CA, Abstr. T31D-0553.

Montési, L.G.J.\*, V. Magni‡, and C. Gaina, 2017, The Effects of Ridge Axis Width on Mantle Melting at Mid-Ocean Ridges, Fall AGU meeting, San Francisco, CA, Abstr. V44A-05

**2018** Green, A.P.\*† L.G.J. Montési, and C.M. Cooper, 2018, The Growth of Outer Satellites' Icy Shells: Convection and Crystallization, 49<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, Abstract No. 2703.

Schools, J.\*† and L.G.J. Montési, 2018, Convective Instability in Horizontal Decompaction Channels Inside Planetary Lithospheres, 49<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, Abstract No. 2301.

Montési, L.G.J.\*, S.M. Howell‡, and R.T. Pappalardo, 2018, Ice Thickness, Upwelling, and Topography in Bands on Europa, 49<sup>th</sup> Lunar and Planetary Science Conference, The Woodlands, TX, Abstract No. 2173.

Montési, L.G.J.\*, V. Magni‡, and C. Gaina, 2018, The Effects of Ridge Axis Width on Mantle Melting at Mid-Ocean Ridges, Joint Meeting of the CGU, CSSS, CIG, ES-SSA, and CSAFM, Niagara Falls, Ontario, Canada

Schools, J.\*† and L.G.J. Montési, 2018, Convective instability in horizontal decompaction channels in planetary lithospheres, Joint Meeting of the CGU, CSSS, CIG, ES-SSA, and CSAFM, Niagara Falls, Ontario, Canada.

Montési, L.G.J.\*, H. Bai, and M.D. Behn, 2018, MeltMigrator: A MATLAB-based software for modeling three-dimensional melt migration and crustal thickness variations at mid-ocean ridges, Joint Meeting of the CGU, CSSS, CIG, ES-SSA, and CSAFM, Niagara Falls, Ontario, Canada.

♠ Montési, L.G.J.\*, 2018, Focus: Modeling and Laboratory Rock Mechanics SCEC Community Rheology Model Workshop: Loading of Southern California Faults: Bulk Lithospheric Deformation and/or Localized Ductile Shear Zone Strain, Palm Springs, CA

Montési, L.G.J.\* and W. Leete††, 2018, RHEOL\_GUI: A Matlab-based graphical user interface for the interactive investigation of strength profiles, 2018 SCEC Annual Meeting, Palm Springs, CA.

Holt, W.\* , L.G.J. Montési, and A. Bahadori†, 2018, Lithosphere Viscosity Variations in Southern California, 2018 SCEC Annual Meeting, Palm Springs, CA.

Citron, R.†, M.W. Escobar†, A.G. Grima†, X. Lin†, D.J.L. Lourenço‡, A. Wilson†, S.A. Wipperfurth†, J. Yan†, S. Cottaar, L.G.J. Montési, S.. Mukhopadhyay, R. Parai, and M. L. Rudolph, 2018, Effects of Heat-producing elements on the long-term evolution of thermochemical piles at the base of the mantle, Fall AGU meeting, Washington, D.C., Abstr. DI53-2335.

Gülcher, A.J.P.\*†, T. Gerya, and L.G.J. Montési, 2018, Plume Penetration into Venusian Lithosphere and the Origin of Coronae, Fall AGU meeting, Washington, D.C., Abstr. DI33C-2540.

Ha, G.\*†, L.G.J. Montési, and W. Zhu, 2018, Effect of thermally-controlled Permeability Barriers on the Location of Arc Volcanism at

Subduction Zones, Fall AGU meeting, Washington, D.C., Abstr. T13C-01.

Ho, C.\*††, J. Schools†, and *L.G.J. Montési*, 2018, Conditions of Melt Ascent Leading to the Igneous Composition of the Martian Surface, Fall AGU meeting, Washington, D.C., Abstr. V51B-1987.

Izquierdo, K.\*†, V. Lekic, and *L.G.J. Montési*, 2018, Using Bayesian Inference to Constrain Density Anomalies Inside Celestial Bodies from Gravity Data, Fall AGU meeting, Washington, D.C., Abstr. P54B-02.

Mills, A.\*††, and *L.G.J. Montési*, 2018, Determining the Elastic Thickness of Sputnik Planitia on Pluto and its Surrounding Using Topography and Inverse Theory, Fall AGU meeting, Washington, D.C., Abstr. P31I-1396.

*Montési, L.G.J.\**, S.M. Howell‡, and R.T. Pappalardo, 2018, Rifting and the Elevation of Bands on Europa, Fall AGU meeting, Washington, D.C., Abstr. P21E-1276.

Schools, J.\*†, and *L.G.J. Montési*, 2018, Decompaction Channel Formation and Elevation in Planetary Lithospheres, Fall AGU meeting, Washington, D.C., Abstr. DI43C-2167.

**f. Films, CDs, Photographs, Websites, etc.**

**g. Exhibits, Performances, Demonstrations, and Other Creative Activities**

**h. Original Designs, Plans, Inventions, Software, and/or Patents.**

**MeltMigrator 1.1.0:** doi:10.5281/zenodo.230922, released Jan. 05, 2017

**OAR 1.0:** doi:10.5281/zenodo.168554, released Nov. 25, 2016

**RHEOL 1.0.0-alpha:** doi:10.5281/zenodo.166503, pre-released Nov.14, 2016

**MeltMigrator 1.0.0:** doi:10.5281/zenodo.166502, released Nov.14, 2016

**RHEOL\_GUI 1.0:** doi:10.5281/zenodo.1341844, released Aug. 8, 2018

Contracts and Grants

<i>Agency</i>	<i>Proposal number</i>	<i>Title</i>	<i>Amount</i>	<i>Duration</i>
MIT		Frictional properties of gabbros at high temperature (PI: <i>L.G.J. Montési</i> )	\$2,000.00	1998-1999
WHOI - USGS		Postdoctoral Scholarship (PI: <i>L.G.J. Montési</i> )	\$5,000.00	11/01/01-04/30/03
WHOI		J. Lamar Worzel Assistant Scientist Fund (PI: <i>L.G.J. Montési</i> )	\$45,000.00	06/01/03-05/31/05

<i>Agency</i>	<i>Proposal number</i>	<i>Title</i>	<i>Amount</i>	<i>Duration</i>
NSF-OCE	0327588	Localization of Melt Transport at Mid-Ocean Ridges (PI: <i>L.G.J. Montési</i> ; co-PI: P.B. Kelemen)	\$147,738.00	12/01/03 – 11/30/05
NSF-EAR	0337678	Contributions of Ductile Shear Zones to Postseismic Deformation: Mechanical Advances and Data Assimilation (PI: <i>L.G.J. Montési</i> ; co-PI: J.J. McGuire)	\$247,152.00	12/01/03 – 11/30/06
WHOI - Andrew W. Mellon Foundation Endowed Fund for Innovative Research		Controls on décollement geometry at accretionary margins (PI: <i>L.G.J. Montési</i> )	\$45,000.00	06/01/04-05/31/05
WHOI – Deep Ocean Exploration Institute		Melt Migration at a Ridge-Ridge-Ridge Triple Junction (PI: <i>L.G.J. Montési</i> )	\$60,537.00	06/01/05-05/31/06
NSF-EAR Geophysics	0609913	Meeting of Young Researchers in Earth Sciences (MYRES II): Dynamics of the Lithosphere (PI: <i>L.G.J. Montési</i> )	\$69,688	04/01/06 – 03/21/09
NSF-OCE MGG	0649103	Geodynamics and Melting at Ultra-slow and Oblique Spreading Centers (PI: <i>L.G.J. Montési</i> ; co-PI: M.D. Behn)	\$315,045	04/01/07 – 03/31/10
NSF-EAR Geophysics	0911151	Collaborative Research: A global examination of the subduction zone flow field from seismic anisotropy (PI: <i>L.G.J. Montési</i> )	\$149,851	10/01/09-09/31/14
NSF-OCE MGG	0937277	Collaborative Proposal: Influence of plate boundary evolution and global mantle flow on ridge geodynamics (PI: <i>L.G.J. Montési</i> )	\$299,970	01/01/10-12/31/13
NSF-EAR Geophysics	0944157	Implications of Deep Transport of Slab-Adjacent Hydrated Material at Subduction Zones (PI: L.B. Hebert‡; co-PI: <i>L.G.J. Montési</i> )	\$165,770	01/01/10-12/31/13
NASA-PG&G	NNX10AG 41G	Planetary Rifting (PI: <i>L.G.J. Montési</i> ; co-I S. Hier-Majumder)	\$413,000	07/01/10-06/30/14
NSF-OCE MGG	1060878	Integrative 3D modeling of upper mantle flow and melting beneath the Lau basin (PI: L.B. Hebert‡; co-PI: <i>L.G.J. Montési</i> )	\$294,707	03/01/11-02/28/14

<i>Agency</i>	<i>Proposal number</i>	<i>Title</i>	<i>Amount</i>	<i>Duration</i>
NSF-EAR Geophysics	1250338	Collaborative Research: Experimental Investigation of the Effects of Lithology and Melt Composition on Permeability and 3-D Melt Distribution in Partially Molten Rocks (PI: W. Zhu, co-PI: <i>L.G.J. Montési</i> )	\$338,660	03/01/13- 02/28/16
NASA-MFRP	NNX14AG 51G	Development and instability of melt decompaction layers in the Martian lithosphere and their effect on the spacing of volcanic centers (PI: <i>L.G.J. Montési</i> )	\$359,511	07/01/14- 06/30/18
NSF EAR Tectonics, EAR Geophysics, CISE Advanced Cyberinfrastructure Division	1419826	Fabric Evolution and the Development of Ductile Shear Zones (PI: <i>L.G.J. Montési</i> )	\$346,854	09/01/14- 08/31/18
NSF EAR Tectonics,	1540532	Workshop Proposal: Comparative Geodynamics and Tectonics of Venus, Earth, and Rocky Exoplanets (PI: <i>L.G.J. Montési</i> )	\$10,832	05/15/15- 04/30/16
NSF-EAR Petrology- Geochemistry	1551300	Physical Properties of Partially Molten Rocks from Microtomography Experiments and Digital Rock Physics (PI: W. Zhu, co-PI: <i>L.G.J. Montési</i> )	\$299,086	02/01/16- 01/31/19
SCEC (South California Earthquake Center)	17170	An Integrated tool for Describing the Rheology of Litho-Tectonic Blocks and Fault Zones	\$19,988	04/01/17- 03/31/18
NSF-EAR Tectonics	1629356	Collaborative Research: Evaluating the rheological structure of the North Anatolian Fault Zone, Turkey (PI: <i>L.G.J. Montési</i> )	\$119,331	08/01/17- 07/31/20
SCEC (South California Earthquake Center)	18187	Collaborative Research: Lithospheric-scale viscosity variations in South California (PI: <i>L.G.J. Montési</i> )	\$22,500	04/01/18- 03/31/19

**i. Fellowships, Prizes, and Awards.**

- 2001-2003** Postdoctoral Scholarship, Woods Hole Oceanographic Institution, with funding from the US. Geological Survey
- 2007** Invited Professorship, École Normale Supérieure (Paris)
- 2010** *CMPS Board of Visitors Assistant Professor Award*, University of Maryland
- 2013** Editors' Citation for Excellence in Refereeing for *Journal of Geophysical Research-Solid Earth*.
- 2016** Certificate for Highly Cited Research in the Journal of Structural Geology for *Fabric Development as the key for forming ductile shear zones and enabling plate tectonics*.
- 2018** Editors' Citation for Excellence in Refereeing for *Geochemistry, Geophysics, Geosystems*.

**j. Editorships, Editorial Boards, & Reviewing Activities for Journals and Other Learned Publications**

*i. Reviewing Activities for Journals*

Bulletin of the Seismological Society of America  
Computer and Geosciences  
Earth and Planetary Science Letters  
Earth, Planet, and Space  
Geology  
Geophysical Research Letters  
Geophysical Journal International  
Geoscience Frontiers  
Icarus  
Journal of Geophysical Research Solid Earth  
Journal of Geophysical Research Solid Planets  
Journal of the Geological Society  
Journal of Volcanology and Geothermal Research  
Lithosphere  
Margins Book  
Nature  
Nature Geoscience  
Nature Scientific Reports

Physics of the Earth and Planetary Interior  
Physical Transactions of the Royal Society of London, A.  
Science  
Science Advance  
Tectonics  
Tectonophysics

**ii. Other.**

***Paper Selected for Editor's Highlight***

Montési, L.G.J., 2007. A constitutive model for layer development in shear zones near the brittle-ductile transition. *Geophysical Research Letters*, 34, L08307, doi:10.1029/2007GL029250.

Montési, L.G.J., and M.D. Behn, 2007 Mantle flow and melting Underneath Mid-Ocean Ridges, *Geophysical Research Letters*, 34, L24307, doi:10.1029/2007GL031067.

Watters, T.R., L.G.J. Montési, J. Oberts, and F. Preusker, 2016, Fault-bound valley associated with the Rembrandt Basin on Mercury *Geophysical Research Letters*, doi:10.1002/2016GL070205

Publication also highlighted by Smithsonian Institution, CMNS, NASA, gimodo.com, Indiatvnews.com, earthsky.org, cosmosmagazine.com, sciencedaily.com, rdmag.com, and other news outlets.

***Media Interviews***

09/23/2008, National Geographic TV (Phone interview) Topic: Scientific discoveries of the year in geosciences.

03/01/2010, WUSA Channel 9 News (Phone interview) Topic: The recent Haiti and Chile earthquakes and their implications for earthquake risks in the USA

03/14/2010, ABC 2 News in Baltimore (Phone interview) Topic: The recent wave of international earthquakes and their link to human population

07/16/2010, WUSA Channel 9 News (Phone interview) Topic: The Gaithersburg/Germantown earthquake and its implications for earthquake hazards in the USA

07/16/2010, The Washington Examiner (Phone interview) Topic: The Gaithersburg/Germantown earthquake and its implications for earthquake hazards in the USA

07/16/2010, CTV News (Recorded TV interview) Topic: The Gaithersburg/Germantown earthquake and its implications for earthquake hazards in the USA

07/20/2010, The Diamondback (Phone interview) the frequency of earthquakes in the Washington metro area,  
<http://www.diamondbackonline.com/news/earthquake-gently-rocks-campus-1.1499873>

03/11/2011, University of Maryland Newsdesk: Japan Latest in String of Mega-Quakes Since 2004: UMD Expert,  
<http://newsdesk.umd.edu/bigissues/release.cfm?ArticleID=2369>

03/22/2011, Fox-5 DC (Live TV interview) Earthquake hazards on the West coast of the US in the wake of the March 11, 2011 Tohoku earthquake.

05/28/2013, Michael D. Lemonick, Contributing Writer, TIME (phone interview) Solving the Mascon Mystery.

05/28/2013, Jennifer Chu, MIT News Office (phone interview) Solving the Mascon Mystery.

11/10/2016: College of Computer, Mathematical, and Natural Sciences (Skype interview). Topic: Giant “Great Valley” Found on Mercury. Published at  
<https://cmns.umd.edu/news-events/features/3691>

12/14/2016: Thomas Sumner, Science News (interview). Topic: Comments on “Mid-ocean ridges produced thicker crust in the Jurassic than in Recent times” by Harm van Avendonck et al.; quoted at <https://www.sciencenews.org/article/earth-mantle-cooling-faster-expected>

12/15/2016: Thomas Sumner, Science News (interview). Topic: Comments on “P44B-06: Deep mantle roots and continental hypsometry: implications for whole-Earth elemental cycling, long-term climate, and the Cambrian explosion” by Cinty Lee.; quoted at <https://www.sciencenews.org/article/waterworld-earth-preceded-late-rise-continent-scientist-proposes>

### III. TEACHING, MENTORING, AND ADVISING

#### a. Courses taught in the last five years

##### University of Maryland

Fall 2018	GEOL 789J – Mantle Dynamics	6 students
	GEOL 682 –Computational Geodynamics	4 students
	GEOL 899 – Doctoral Dissertation research	2 student
Spring 2018	GEOL 412 – Geology of terrestrial planets	12 students
	GEOL 612 – Geology and Geophysics of the Terrestrial Planets	3 students
	GEOL 898 – Pre-candidacy research	2 students
	GEOL 899 – Doctoral Dissertation research	1 student
Fall 2017	GEOL 200 – Earth’s Fury	101 students



	GEOL 680 –Geodynamics	9 students
	GEOL 898 – Pre-candidacy research	2 students
	GEOL 899 – Doctoral Dissertation research	1 student
Spring 2016	GEOL 499 – Special Problems in Geology	1 student
	GEOL 394 – Geology Senior Thesis II: Research	1 student
	GEOL 798 – Seminar in Geology	1 student
	GEOL 799 – Master's Thesis Research	2 student
	GEOL 898 – Pre-candidacy research	2 students
	GEOL 899 – Doctoral Dissertation research	1 student
Fall 2015	GEOL 200 – Earth’s Fury	120 students
	GEOL 412 – Geology of terrestrial planets	4 students
	GEOL 612 – Geology and Geophysics of the Terrestrial Planets	10 students
	GEOL 799 – Master's Thesis Research	1 student
	GEOL 898 – Pre-candidacy research	3 students
	GEOL 899 – Doctoral Dissertation research	1 student
Spring 2015	GEOL 789M – Computational Geodynamics	4 students
	GEOL 898 – Pre-candidacy research	3 students
	GEOL 899 – Doctoral Dissertation research	2 students
Fall 2014	GEOL 394– Geology Senior Thesis II	1 student
	GEOL 412 – Geology of terrestrial planets	2 students
	GEOL 612 – Geology and Geophysics of the Terrestrial Planets	3 students
	GEOL 680 – Geodynamics	5 students
	GEOL 898 – Pre-candidacy research	3 students
	GEOL 899 – Doctoral Dissertation research	2 students
Spring 2014	GEOL 394H – Research Problems in Geology	1 student
	GEOL 898 – Pre-candidacy research	1 student
	GEOL 899 – Doctoral Dissertation research	2 students
Fall 2013	GEOL 200 – Earth’s Fury	115 students
	GEOL 394 – Research Problems in Geology	1 student
	GEOL 412 – Geology of terrestrial planets	3 students
	GEOL 789A –Geology of terrestrial planets	1 student
	GEOL 898 – Pre-candidacy research	1 student

	GEOL 899 – Doctoral Dissertation research	1 student
Spring 2013	GEOL 789M – Computational Geodynamics	6 students
	GEOL 898 – Pre-candidacy research	3 students
	GEOL 394H – Research Problems in Geology	1 student
	GEOL 898 – Pre-candidacy research	1 student
	GEOL 899 – Doctoral Dissertation research	1 student
Fall 2012	GEOL 200 – Earth’s Fury	66 students
	GEOL 394 – Research Problems in Geology	1 student
	GEOL 489A –Geology of terrestrial planets	3 student
	GEOL 789A –Geology of terrestrial planets	4 student
	GEOL 898 – Pre-candidacy research	1 student
	GEOL 899 – Doctoral Dissertation research	1 student
Spring 2012	GEOL 457 – Seismology	3 students
	GEOL 200 – Earth’s Fury	94 students
	GEOL 394H – Research Problems in Geology	1 student
	GEOL 394 – Research Problems in Geology	1 student
	GEOL 657 – Seismic Wave propagation	2 students
	GEOL 898 – Pre-candidacy research	2 students
Fall 2011	GEOL 898 – Pre-candidacy research	3 students
Spring 2011	GEOL 457 – Seismology	6 students
	GEOL 898 – Pre-candidacy research	3 students
	GEOL 394H – Research Problems in Geology	1 student
	GEOL 394 – Research Problems in Geology	1 student

## **b. Course or Curriculum Development**

- Fall 2007**     **GEOL100 – Physical Geology** Adoption of new textbook: *Understanding Earth* (Grotzinger, Jordan, Press, and Siever). Lecture summaries and presentations (powerpoint). Original lectures on volcanic hazards, Earth interior, and planetary sciences complementing textbook material. Original take-home midterm focusing on quantitative skills.
- Spring 2008**     **GEOL489A/789A – Seismology** Developed course from scratch, including a complete set of original lecture notes (typed) to include background material complementing textbook. Developed original

problem sets covering fundamental aspects of mathematics and physics as well as seismology and instruction on how to use available software.

**GEOL386 – Experiential Learning** Developed curriculum for a hands-on introduction to GMT software (no text). Original problem sets.

**Summer 2008** Participated in the redesign of **GEOL110 Physical Geology Laboratory**. Wrote original geophysics lab, including earthquake location, magnitude; added earthquake hazards section to geohazards lab.

**Fall 2008** **GEOL100 – Physical Geology** Adoption of new textbook: *Exploring Geology* (Reynolds et al.); complete revision of lectures, including new segments on volcanic hazards, climate changes, landslides, biography of the Earth to complement textbook material. Developed original online homework using Google Earth™. Developed online midterm and final, which required intensive programming of tests banks on ELMS.

**GEOL789M – Computational Geodynamics** Developed course from scratch, including a complete set of original lecture notes (typed) and problem sets. I wrote all materials on numerical techniques to make it accessible for an audience lacking a strong background in applied mathematics (no textbook). Development of hands-on exercises to introduce Matlab, Comsol Multiphysics® (commercial Finite Element software) and Coulomb (open-source Boundary Element software developed by the U.S. Geological Survey).

**Spring 2009** **GEOL457/789A – Seismology** Complete reworking of introductory material on mathematical concepts (1/3 of class) to make it more accessible to Geology majors. Complete reorganization and rewriting of lecture notes (typed). Developed additional problem sets.

**Fall 2009** **GEOL100 – Physical Geology** Revised lectures on Earth interior and continents. Revised problem sets using Google Earth™. Complete programming of tests banks for online midterm and final on ELMS (75% of entire test bank); implementation of randomized test banks to individualize the final.

**GEOL789R – Dynamics of the Lithosphere** Developed course from scratch (no textbook); development of a three-step strategy to allow students to guide the direction of the class 1) general lectures on the dynamics of the lithosphere leading to a selection of a semester topic; 2) discussions of papers on the semester topic to define individual projects; 3) discussion of selected specialized papers central to the individual projects. Development of a review panel exercise during which students evaluate each other's project proposals as an introduction to the concept of peer review, critical to their career as scientists.

**GEOL499 – Special Problems in Geology** Developed course from scratch to focus on development of microfabric; supervised

development and programming of novel strategy to simulate microfabric development using Matlab.

- Spring 2010** **GEOL457/789A – Seismology** Updated problem sets to use data from early 2010 earthquakes
- Spring 2011** **GEOL457 – Seismology** Updated problem sets to use data from early 2011 earthquakes; New homework assignments on pulse and transmission, and on earthquake source scaling.
- Fall 2011** **GEOL110 – Physical Geology Labs:** New edition of lab manual, strongly revised
- Spring 2012** **GEOL200 – Earth’s Fury: Living with earthquakes, volcanoes, and tsunami (I-Series):** Entirely new course; Development of curriculum, lecture notes (no textbook will be followed in its entirety), assignments and lab activities. Discussion sessions will feature roundtable discussions on socio-cultural aspects of geological hazards. During computer labs, the students will analyze the geography of at-risk areas and conduct simple modeling and statistical analyses of risk. Students will work in small groups of at most 6 students on a detailed capstone analysis of the geological and societal aspects of a specific earthquake, volcanic eruption, or tsunami. To illustrate the peer review process, a project proposal will be prepared by each group and reviewed by the class. The project will be presented in class and the report shared on the class website.
- Fall 2012** **GEOL200 – Earth’s Fury: Living with earthquakes, volcanoes, and tsunami (I-Series):** Major changes of teaching strategy to better reflect I-Series goals. Dedicate class time to active discussion, demonstrations, and hands-one activities; self-contained online lectures. New exercises on earthquake location.
- GEOL489A and 789A – Geology of Terrestrial Planets:** Entirely new course; Development of curriculum, lecture notes (no textbook will be followed in its entirety), assignments and lab activities. Class time features discussion of a recent review paper. Weekly mini-projects counted as homework. Hands on introduction to mapping software GMT using the CSS 3332 teaching lab. Students in GEOL789A are held to a higher standard in the homework assignments and are tasked to lead discussion in order to demonstrate scholarship.
- Spring 2013** **GEOL789M – Computational Geodynamics** Major development with new module on basic numerical techniques and new homework on numerical techniques and Initial Value Problem. The latter is centred around simulation of seismic cycle. Tutorial exercises to introduce Matlab, Comsol Multiphysics® (commercial Finite Element software), LAYER (open-source Finite Element Software) and Coulomb (open-source Boundary Element software developed by the U.S. Geological Survey) held as lab sessions in the CSS 3332 teaching lab

- Fall 2013**      **GEOL200 – Earth’s Fury: Living with earthquakes, volcanoes, and tsunami (I-Series):** Transition to flipped classroom format: prerecorded online lectures; in-class hands-on exercises. Custom textbook developed in collaboration with McGraw-Hill editors.
- GEOL412 and 789A – Geology of Terrestrial Planets:** Transition to flipped classroom format: prerecorded online lectures; in-class hands-on exercises.
- Fall 2014**      **GEOL680 – Geodynamics:** Development of an entirely new graduate-level class teaching the fundamentals of geodynamics modeling with an emphasis on deriving equations, obtaining analytical solutions, and comparing the behavior of simple model with geological and geophysical observations. Development on 8 topical homeworks and a complete set of lecture notes encompassing the concepts of stress, strain, elasticity, plates, ductile rheology, viscous flows, and buoyancy-driven flows.
- Fall 2015**      **GEOL200 – Earth’s Fury: Living with earthquakes, volcanoes, and tsunami (I-Series):** Revisited in-class hands-on exercises; updated about half of the pre-recorded lectures. Added Facebook group.
- Fall 2017**      **GEOL200 – Earth’s Fury: Living with earthquakes, volcanoes, and tsunami (I-Series):** Revisited in-class hands-on exercises; Reorganized class sessions allow more time for revisions, more and smaller groups, and in-class tests. New participation reward scheme and quiz contest using Kahoot. Organized virtual conference system, with peer review, for final project presentations.
- Spring 2018**    **GEOL412 and 612 – Geology of Terrestrial Planets:** Transition for a flipped classroom format; Reorganization and update of the lecture materials, advance recording of lecture; Revision of assignments to use modern software (JMars) and newer scientific results. Participation reward scheme and quiz contest using Kahoot.
- Fall 2018**      **GEOL789J – Mantle dynamics:** Development of an entirely new graduate-level class covering recent advances in the understanding of mantle dynamics. Development of new assessments including contributions to Wikipedia to increase students’ ability to make an impact beyond the scientific community (transferable skill).

**c. Manuals, Notes, Software, Webpages, and Other Contributions to Teaching.**

- Spring 2008**      Guest lecture on space geodesy for GEOL472–Tectonics
- Spring 2009**      Guest speaker at Geology Club screening of movie “10.5”
- Spring 2010**      Handled the logistics for a short course on *Geology and Geophysics in Industry* proposed by the AAPG (American Association for Petroleum Geologists), provided hands-on introduction to oil exploration techniques.

- Layer:** Finite element software for use in modeling fault development in shortening and extending lithosphere; Maintains software package and repository at <http://www.geology.umd.edu/~montesi/Geodynamics/LAYER.shtml>
- Comsol Multiphysics®:** Commercial Finite element software; Maintains repository of example models of interest to the geodynamics community at <http://www.geology.umd.edu/~montesi/Geodynamics/ComsolModels.shtml>
- Fall 2016:** published several codes onto Github at <https://github.com/montesi>; obtained DOI numbers using zenodo
- Fall 2018:** RHEOL\_GUI: Matlab-based Graphical User Interface for the interactive exploration of lithosphere-scale strength envelopes. Disseminates software package and repository at [https://github.com/montesi/RHEOL\\_GUI](https://github.com/montesi/RHEOL_GUI)  
doi:10.5281/zenodo.1341844

#### **d. Teaching Awards and Other Special Recognition.**

*i. Undergraduate.*

*ii. Graduate.*

**Master's**

*Completed*

<b>2010-2011</b>	Thomas Tamarkin	(Member thesis committee)
<b>2011-2012</b>	Jodi Gaeman	(Member dissertation committee)
<b>2011-2012</b>	Jesse Wimert	(Member thesis committee)

*Ongoing*

**Doctoral**

*Completed*

<b>2006</b>	Andrea Llenos	(WHOI, Member thesis Committee)
<b>2009-2012</b>	Jingao Liu	(Member dissertation committee)
<b>2011-2013</b>	Yu Huang	(Member dissertation committee)
<b>2010-2014</b>	Brianna Cash	(Member dissertation committee)

*Ongoing*

<b>2017-present</b>	Angela Marusyak	(Member dissertation committee)
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*iii. Other advising activities (advising student groups, special assignments, recruiting,*

*faculty mentorship, etc.)*

**Faculty Mentorship**

**2013-2015** Nicholas Schmerr (Assistant Research Scientist)

**e. Advising: Research Direction.**

*i. Undergraduate.*

Completed

- 2005** Piyapa Dejtrakulwong (WHOI Summer Student Fellow, supervisor).  
Placement: Graduate Student, Department of Geophysics, Stanford University.
- 2007-2009** Garrett A. Mitchell (Major: Geology (with honors); Major: Geography).  
Placement: Graduate Student, Department of Geology, University of Maryland  
Currently: Project Geoscientist at Fugro GeoConsulting Ltd
- 2009-2011** Gerasimos Michalitsianos (Major: Geology; Minor: Physics)  
Placement: Research Assistant, Science Systems and Applications Inc.  
Current: Scientific Analyst II at I. M. Systems Group Inc. (IMSG)
- 2009-2010** Kevin J. Miller (Major: Physics ; Minor Geophysics)  
Placement: Graduate Student, Department of Geology, University of Maryland  
Current: Postdoctoral Researcher, Stanford University
- 2010-2011** James T. Keane (Major: Geology (with honors); Major: Physics; Major: Astronomy (with honors))  
Placement: Graduate Student, Department of Planetary Sciences, University of Arizona  
Current: Postdoc, Caltech
- 2012** Christopher Weller (Major: Geology)  
Current: Logistics Coordinator at Concentrix Corporation
- 2012-2013** Austin Green (Major: Geology)

Placement: Faculty Research Assistant, University of Maryland, Dpt. Geology

Current: Graduate Assistant, Washington State University

**2013** Christine Liu (Major: Geology)

Placement: Faculty Research Assistant, University of Maryland, Dpt. Physics

**2013-2014** William Junkin (Major: Geology, with Honors)

Placement/current: Graduate Assistant, University of California Santa Barbara, Department of Earth Science

**2014** David Krasner (Major: Geology)

**2015** João Magalhaes, University of Brazilia and Southern Illinois University, IIE (Institute of International Education) internship

**2015-2016** John Milne (Major: Geology, with Honors)

Ongoing

**2017-present** Cristy Ho (Major: Civil Engineering; Minor: planetary sciences)

**2017** William Leete (Major: Physics; Minor: planetary sciences)

**2018-present** Alyssa Mills (Major: Physics; Geology, with Honors; Minor: planetary sciences)

**ii. *Master's***

Completed

**2009-2010** Garrett A. Mitchell (Adviser/chair thesis committee)

Placement: Graduate Student, University of New Hampshire

Currently: Project Geoscientist at Fugro GeoConsulting Ltd

**2010** Michel Woné (Internship Supervisor)

Placement: Graduate student, Formation Interuniversitaire de Physique, Ecole Normale Supérieure, Paris.

Current: Ingénieur R&D, SNCF, France.

**2009-2011** Grant T. Farmer (MIT, Project supervisor)



**2013-2016** Mark O. Larson (Adviser/chair dissertation committee)

**2014-2016** Jiangyi Hou (co Adviser/dissertation committee member)

**2014-2016** Alexis A. Martone (Adviser/chair dissertation committee).  
Placement/Current: Quantitative Analyst at S&P Global Platts, Boulder, CO

**2017-2018** Anna Gülcher (ETH Zürich, co-Adviser, co-Referee)

Ongoing

**2018-present** James Bader (co Adviser/chair dissertation member)

Not completed

**iii. Doctoral**

Completed

**2006-2007** Patricia M. Gregg (WHOI, Project Supervisor)  
Placement: Postdoctoral researcher, Lamont-Doherty Earth Observatory  
Currently: Assistant Professor, University of Illinois

**2007-2008** Matthias Delescluse (Ecole Normale Supérieure, Project Supervisor)  
Placement: Postdoctoral researcher, Dalhousie University  
Current: Maître de Conférences, UMR 8538 – Laboratoire de Géologie de l’Ecole Normale Supérieure, Paris, France

**2005** Jessica M. Warren (WHOI, Project Supervisor)  
Placement: Postdoctoral researcher, Carnegie Institution of Science.  
Currently: Assistant Professor, University of Delaware

**2011-2012** Karen A. Paczkowski (Yale, Project Supervisor, member thesis examination committee)  
Placement: Aero/Thermo Systems Analysis Engineer at UTC Aerospace Systems  
Current: AAAS Science and Technology Policy Fellow, National Science Foundation.

- 2010-2013** Lisa Schleicher Walsh (Co-advisor/member dissertation committee), PhD thesis: *The Tectonics of Intraplate Regions: Quantifying Stress and Surface Deformation in the Central and Eastern U.S. and Planetary Analogs on Mercury and the Moon*  
Placement: Seismologist, Nuclear Regulatory Commission.  
Current: Geophysicist at the Defense Nuclear Facilities Safety Board
- 2010-2015** Kevin J. Miller (Co-advisor/member dissertation committee), PhD thesis: *Transport Properties and Melt Distribution of Partially Molten Mantle Rocks: Insights from Micro-computed Tomography and Virtual Rock Physics Simulations*  
Placement/Current: Postdoctoral Researcher, Stanford University
- 2010-2015** Stephanie A. Johnston (Advisor/chair dissertation committee), PhD thesis: *Tectonics of Icy Satellites Driven by Melting and Crystallization of Water Bodies Inside Their Ice Shells*  
Placement: Postdoctoral Researcher, NASA Goddard Space Flight Center  
Current: Postdoctoral Researcher, NASA Goddard Space Flight Center
- 2011-2017** Hailong Bai (Advisor/chair dissertation committee), PhD thesis: *Melt Extraction and Crustal Thickness Variations at Segmented Mid-Ocean Ridges*  
Placement/Current: Researcher at DeepCare, Beijing, China

Ongoing

- 2014-present** Joe Schools (Advisor/chair dissertation committee)
- 2015-present** Kristel Izquierdo Gonzalez (Co-Advisor/chair dissertation committee)
- 2017-present** Goeun Ha (Co-Advisor/chair dissertation committee)

Not completed

- 2004-2006** Caleb Mills (WHOI, principal adviser)  
Mr. Mills decided to pursue a career in software engineering
- 2008-2009** Sinead Eley (Adviser)

Ms. Eley decided to focus on her family

- 2010-2012** Minjin Baek (Adviser)  
Mr. Baek left for personal reasons.
- 2017-2017** Pierre Casco (Adviser/chair dissertation committee)  
Mr. Casco felt overwhelmed by the work.

*iv. Postdoctoral researchers and Faculty Research Associate*

- 2003-2004** Anne Deschamps, WHOI Postdoctoral Scholar (Project Mentor; Sponsor: M. Tivey)  
Placement: Scientist at the Centre National de la Recherche Scientifique (CNRS), UMR 6538 Laboratoire de Domaines Océaniques, Institut Universitaire Européen de la Mer, Brest, France  
Deceased December 26, 2014.
- 2003-2004** Adam Soule, WHOI Postdoctoral Scholar (Project mentor; Sponsor: D. Fornari)  
Currently: Associate Scientist w/ tenure, Woods Hole Oceanographic Institution
- 2004-2006** Rowena Lohman, WHOI Postdoctoral Scholar (Co-sponsors with J. J. McGuire)  
Currently: Associate Professor, Cornell University
- 2008-2012** Laura Hebert, Research Associate, Univ. Maryland; then Assistant Research Scientist, University of Maryland  
Currently: Private Consultant, Greenbelt, Maryland
- 2013-2014** Karen Paczkowski, Research Associate, Univ. Maryland  
Placement: Science Policy Fellow, Geological Society of America,  
Current: AAAS Science and Technology Policy Fellow, National Science Foundation.
- 2015-2016** Juan Rodriguez Gonzalez, Research Associate, Univ. Maryland  
Placement: Postdoc, Durham University
- 2018-present** Kali Allison, Research Associate, Univ. Maryland, NSF Postdoctoral Fellow

v. ***Faculty Research Associate***

*Completed*

**2013-2014** Austin Green, Research Assistant, Univ. Maryland  
Placement/Current: Graduate Assistant, Washington State University

**f. Extension Activities.**

**IV. SERVICE**

**a. Professional**

**i. *Offices and committee memberships held in professional organizations.***

American Geophysical Union

*Member*, Information Technology Committee, 2008-2010

*Co-convener* of special sessions: Fall Meeting 2004 (lead); Fall Meeting 2008, Fall Meeting 2010 (lead), Fall Meeting 2011 (lead), Fall Meeting 2012, Fall Meeting 2013, Fall Meeting 2016

*Member*, Book Board of Editors, 2010-2012

*Fall Meeting Program Committee*, Representative from SEDI section, 2014-2015.

*Study of the Earth's Deep Interior*, Secretary (Elected position. 2015-2016), Outstanding Student Presentation Award coordinator (2015-2016)

MIT, Dept. EAPS, Graduate Student Organization

*President* 2000

Woods Hole Science and Technology Education Partnership (WHSTEP)

*Participant* 2002-2004

Computational Infrastructure for Geodynamics (CIG)

Member institution *representative* for WHOI (2002-2007)

Member institution *representative* for the U. Maryland (2007-present)

*Co-organizer*, CIG Workshop on Mathematical and Computational Issues in the Solid Earth Geoscience, Santa Fe, NM, September 15-17 2008

*Co-organizer*, CIG workshop on Magma Dynamics, New York City, NY, August 17-18, 2006

*Member*, Science Steering Committee (2006-2009), Nomination Committee (2016)

*Chair*, Nomination Committee (2015)

Meeting of Young Researchers in Earth Sciences (MYRES)

*Member*, Steering Committee, 2003-2005

*Chair*, Steering Committee, 2005-2007

*Co-organizer*, Second Meeting of Young Researchers in Earth Sciences (MYRES II): Dynamics of the Lithosphere, Verbania (Italy) July 2-6, 2006

MSPHD (Minorities Striving and Pursuing Higher Degrees of Success in Earth System Science, <http://www.msphds.usf.edu/>)

*Science Mentor* 2004, 2006

UNAVCO and WinSAR

Member institution *representative*, 2008-present

Ridge2000

*Member*, Steering Committee, 2008-2011

*Member*, Executive Committee, 2009-2011

European Geophysical Union

*Member*, Outstanding Young Scientist Award (OYSA) committee for the Tectonics and Structural Geology division, 2010.

*Member*, Tectonics and Structural Geology division programme group, 2011-2013.

Geological Society of America

*Member*, Editorial Committee, *Geology*, 2012-2015

IRIS

Member institution *Alternate Representative*, 2012-present

Cooperative Institute for Dynamic Earth Research (CIDER)

*Organizer*, 2015 summer program.

**ii. *Reviewing activities for agencies (since 2007).***

Department of Energy

Los Alamos National Laboratory

Marsden Fund (New Zealand)

NASA

Planetary Geology and Geophysics Program (including panel member)

Mars Data Analysis Program

Mars Fundamental Research Program (including panel member)

Earth Science Initiative

Outer Planet Research (including panel member)

NASA Postdoctoral Program

Cassini Data Analysis and Participating Scientists (including panel group chief)

Juno Participating Scientists Program (including panel group chief)

National Science Foundation

OCE Geology and Geophysics program (including panel member)

EAR-Geophysics program

EAR-Tectonics program

EAR-Studies of the Earth's Deep Interior program

EAR-Integrated Earth Studies program

EAR-GeoPRISMS program

EAR-Geoinformatics program

Margins program

EarthScope Program

Major Research Equipment program

ENG– IUCRC (panel member)

Research Grant Council (Hong-Kong)

FONDECYT Program (Chile)

Agence Nationale de la Recherche (France)

**iii. Other unpaid services to local, state, and federal agencies.**

**iv. Other non-University committees, commissions, panels, etc.**

*Science organizing committee member:* Comparative Tectonics and Geodynamics of Venus, Earth, and Rocky Exoplanets workshop (Pasadena, CA, 2015). Wrote proposal to support participation from young scientists. Helped with program and speaker selection.

*Writing committee member:* Venus EXploration and Analysis Group (VEXAG) Goals, Objective and Investigations. (2018)

v. *International activities not listed above.*

vi. *Paid consultancies.*

**b. Campus.**

i. *Departmental.*

2007-2008 Graduate Admission Committee, *member*

2008-2009 GEOL110 redesign committee, *member*

2010 Program Coordinator Search Committee, *member*

2011-2013 Department colloquium *coordinator*

2011 Faculty Search Committee, *member*

2012 Website redesign Committee, *member*

2012 Center for Planetary Origin Committee, *member*

2013 Geology Minors redefinition Committee, *member*

2013 Student Paper Award definition Committee, *member*

2013 Teaching review for Dr. Aaron J. Martin, Assistant Professor

2014 Teaching review for Dr. Vedran Lekic, Assistant Professor

2015-2016 Faculty Search Committee, *chair*

ii. *College*

2010 Geology Chair Search Committee, *member*.

iii. *University.*

iv. *Special administrative assignments.*

v. *Other*

**c. Community, State, National.**

**d. Service Awards and Honors.**