

## Carolina Lithgow-Bertelloni

Department of Earth, Planetary and Space Sciences, University California Los Angeles  
595 Charles E. Young Drive E., Los Angeles, CA 90095

<https://sites.epss.ucla.edu/lithgow-bertelloni/>

### **Personal**

*Born:* Santo Domingo, Dominican Republic

*Citizenship:* Multiple Italian/USA/Dominican

### **Education**

*B.Sc.:* University of Puerto Rico at Mayagüez, June 1987 (Geology), Magna cum Laude

*Ph.D.:* University of California at Berkeley, December 1994 (Geology)

*Native Languages:* Spanish and Italian

*Foreign Languages:* English, some French

### **Positions Held**

<i>Louis B and Martha B Slichter Endowed Chair in the Geosciences, EPSS, UCLA</i>	2018-
<i>Honorary Professor of Geophysics, Earth Sciences, University College London</i>	2018-
<i>Professor of Geophysics, Earth Sciences, University College London</i>	2012-2018
<i>Visiting Professor, Earth Sciences, Roma Tre, Rome, Italy</i>	2013
<i>Visiting Researcher, DTM, Carnegie Institution of Washington</i>	1998-2008
<i>Reader in Geophysics, Earth Sciences, University College London</i>	2007-2012
<i>Visiting Associate Professor, Geological Sciences, U. Michigan</i>	2007-2011
<i>Associate Chair for Graduate Studies, Geological Sciences, U. Michigan</i>	2005-2007
<i>Associate Professor with Tenure, Geological Sciences, University of Michigan</i>	2004-2007
<i>Assistant Professor, Geological Sciences, University of Michigan</i>	1997-2004
<i>Carnegie Fellow &amp; NSF Postdoctoral Fellow, Carnegie Institution of Washington</i>	1995-1997
<i>Visiting Professor, School of Earth and Atmospheric Sciences, Georgia Tech</i>	1995-1997
<i>Research Fellow, Institut für Geophysik, Universität Göttingen,</i>	1994-1995
<i>Graduate Assistant, Dept. of Geology &amp; Geophysics, UC Berkeley</i>	1987-1993

### **Honors, Awards and Fellowships (since PhD)**

Birch Lecturer-American Geophysical Union	2018
Elizabeth Crosby Research Award	2004
Who's Who in Science Higher Education	2004
Alfred P. Sloan Research Fellowship in Physics	2001-2003
David and Lucile Packard Foundation Fellowship for Science and Engineering	2000-2005
Carnegie Institution of Washington, Research Fellowship	1997-1998
NSF Earth Sciences Postdoctoral Research Fellowship	1995-1997

### **Professional Society Membership**

Member, American Physical Society	2003-present
Member, American Geophysical Union	1987-
Member, Geological Society of America	1987-
Member, Phi Kappa Phi (Honor Society)	1985-present

### **Professional Service**

Chair Director Search Committee for CIG IV	2020
Member Organizing Committee CIG Community Workshop 4	2020
Member AGU-SEDI canvassing committee	2020-2022
Editor, <i>Geochemistry, Geophysics, Geosystems</i> , AGU	2020-

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National Academy of Sciences: CORES committee	2018-2020
Member of Nominations Committee for CIG:	2018
CIDER Workshop co-organizer	2018
Specialty Chief Editor Geophysics, <i>Frontiers of Earth Science</i> Journal	2017-
National Science Foundation-EAR Committee of Visitors	2017
French IUF panel for Earth Sciences	2015-2017
National Science Foundation-EAR Deep Earth Processes Committee of Visitors	2014
Secretary Tectonophysics Section American Geophysical Union	2010-2012
Tectonophysics Early Career Award Selection Committee	2009-2012
NERC Peer Review College Members Selection Panel	2012
NERC Peer Review college	2009-2012
Chair, Nominations Committee, CIG	2011
National Science Foundation: Frontiers of Earth Sciences Panel	2011
Member of Nominations Committee for CIG:	2010
Chair Gordon Research Conference: Interior of the Earth	2011
Vice-Chair Gordon Research Conference: Interior of the Earth	2009
NERC Standard Panel	2010
NERC Fellowship Panel	2010
Long-term tectonics working group (CIG)	2007-2010
Computational Infrastructure for Geodynamics (CIG) Executive Committee	2007-2010
Editorial Board, <i>Geology</i> , Geological Society of America	2007-2009
National Science Foundation Panel	2006-2008
National Science Foundation Panels	2002, 2003
National Science Foundation Panels	2000
Meetings Committee, American Geophysical Union	2006-
Member of Nominations Committee for CIG	2006
Chair Tectonophysics Section Nominating Committee (AGU)	2002-2007
Tectonophysics Section Nominating Committee (AGU)	2000-2002
Study of the Earth's Deep Interior Committee (AGU)	1996-2000
Co-convener of 7 special sessions at national and international meetings	1997-present

### Reviewer Journals and Books:

American Geophysical Union (AGU) monographs, Brooks/Cole Thomson Learning, Earth and Planetary Science Letters (EPSL), EOS, Geochemistry Geophysics Geosystems (G<sup>3</sup>), Geology, Geological Society of America Bulletin (GSAB), Geophysical Journal International (GJI), Geophysical Research Letters (GRL), Journal of Geophysical Research (JGR), Nature, Nature Geoscience, Physics of the Earth and Planetary Interiors (PEPI), Science, Tectonophysics, Lithosphere, Frontiers

### Reviewer Funding Agencies:

Institute of Geophysics and Planetary Physics –Los Alamos National Laboratory (IGPP-LANL), National Science Foundation (NSF), Netherlands Organization for Scientific Research, Petroleum Research Fund, European Science Foundation, National Environmental Research Council (NERC), European Research Council (ERC)

### **UCLA Service**

2020 Library Prize for Undergraduate Research selection committee	2020
Graduate Fellowship Committee	2020

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Packard nominations committee	2019-
EPSS Bylaws committee	2019
EPSS Peer Teaching Evaluation Committee	2019-
EPSS ad hoc promotion committees (7)	2019-
EPSS Diversity Division Representative	2019-
EPSS Diversity Committee Chair	2018-

### *UCL Departmental Service*

Earth Sciences Open Day Taster Courses	2015-2017
Natural Sciences Stream Director	2014-2018
Athena Swan Committee Member	2014-2018
Geophysics Stream Director	2013-2018
International Study Abroad Tutor	2012-2018
Professorial Search Committees	2012-2014
MAPS Postgraduate Open Day	2011
UCL Open Day ]	2011, 15,16
Departmental Seminar Organizer	2010-2012
Field trip co-leader, Field Geophysics Abruzzo, Third years	2016
Field trip co-leader, Betics Mountain Range, Spain	2011
Field trip co-leader, Apennine mapping for first year students	2010

### *University of Michigan Service*

Center for the Education of Women-Scholarship Selection Committee	2006-2007
AGEP Advocate, Geological Sciences	2006-2007
Rackham Graduate School Council of Graduate Chairs	2006-2007
Advisory Comm., Advancing Diversity and Excellence in Science & Engineering	2006
Rackham Graduate School LSA representative to University of Puerto Rico	2003
Rackham Graduate School Workshop for Graduate Students	2002
Senate Assembly University of Michigan: member	2001-2004
Learning Communities: Promoting the Faculty Role in Teaching and Learning	2000
Board Member Lloyd Hall Scholars Program	1999-2002
University Mentorship Program	1998-2000
Undergraduate Freshman Orientation	1998
Rackham Graduate School Workshop for Graduate Students	1998
Senate Assembly University of Michigan: alternate member	1998

### *University of Michigan Departmental Service*

Curriculum Committee Chair for Geophysics, Tectonics and Structure group	2006-2007
Tenure and Promotion Committee for Chris Poulsen	2006
Associate Chair for Graduate Studies	2005-2007
Sokol Nomination Writer (ad-hoc)	2004
Chair Person-Specific Search Committee	2003-2004
Executive Committee	2003-2004
Turner Grants Committee	2002
Turner Lecture Series Organizer	2001-2003
Ombudsperson	2001-2003

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Curriculum Committee	2000-2002
GSI Orientation Panel	1999-2000
Hydrology Faculty Search Committee	1998-1999
Departmental Webmaster	1998-2000

### Outreach

*The sweet smell of Earth's mantle or Why is Hawaii a volcano?*

EYU, UCLA, November 2020

*Mentora, Semillas de Triunfo, Puerto Rico*

Puerto Rico, 2021

*Member and Mentor Geolatinas Chapter UPR Mayagüez and UCLA*

*AWISE UCLA High school STEM day*

UCLA, Feb. 24 2020

*Why is Hawaii a volcano*

EYU, UCLA, November 2019

*Sea Level Past, Present and Future*

UCLA Centennial Celebration, Franz Hall, Los Angeles, May 2019

*Careers Workshops for 6th formers and Year 10 students*

Highgate School and Chrysalis partners, London, March, 2018.

*Careers in Earth Science and Career Workshops for 6th formers and Year 10 students*

Highgate School and Chrysalis partners, London, March 16, 2016.

*Women in Science career evening*

Blackheath High: School for girls, London, March 14th 2016.

*Provided or Organised Work Experience for*

Thalia Seale (Yr 11), Marjorie Briscolane, Joe, Hilton, Fleurette des Cieux

*Careers in Earth Science and Career Workshops for 6th formers and Year 10 students*

Highgate School and Chrysalis partners, London, March, June 2016

*How deep currents control sea-level change, YES even today*

Oxford Geology Group, Oxford, 18 February 2016.

*How deep earth currents make and destroy mountains*

Highgate School, London, 21 January 2016

UCL Masterclass Advisor

*A sweet understanding:*

UCL, 19 February 2015

UCL Masterclass

*Girls and Women in Science, visit to UCL Labs for year 6 girls at Trevor-Roberts school:*

UCL, 11 June 2013

*Friends of the Royal Astronomical Society lunchtime lecture:*

Invited Speaker, Burlington House, London, May 29th, 2013

*Royal Society UK-Brazil Frontiers of Science Meeting:*

Speaker Interior of the Earth session, August 27-30, Sao Paulo, Brazil

*Demonstration of laboratory experiments to Primrose Hill Primary School students:*

UCL, 27 May 2010

*15th Annual Beckman Frontiers of Science Symposium:*

Invited by National Academy of Sciences, 6-8 November 2003

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### Women at the Center:

*Journey to the center of the Earth*

Center for the Education of Women, University of Michigan- 5 November 2003

### Saturday Morning Seminars for Outstanding High-School Juniors:

*Journey to the center of the Earth*

College of Literature, Science and the Arts, University of Michigan-May 2003

### Featured Newspaper Articles:

Detroit Free Press: *Ordinary girls. Extraordinary women* -28 March 2001

Ann Arbor News: *Where the ooze brews*-15 April 2000

### Guest Speaker:

National Honor Society Induction Ceremony, Monroe High School, 3/8/00

### General Science Magazines:

EOS - 2019

New Scientist- 2019

Geotimes: *Fast and Slow Lanes* –2 December 2002

Popular Mechanics, USA- April 1999

Super Interessante, Brazil- November 1998

Twenty-First Century Bimonthly, Taiwan- August 1999

Science News, USA- September 1998

### ***Invited Lectures: Institutions***

*Deep Slabs: Penetration, Stagnation, Fragmentation and Surface Inundation*

Department of Earth and Environmental Sciences , University of Kentucky, Winter, 2021

*Dynamic topography and landscape evolution*

Department of Geosciences, Virginia Tech, January 2021

*No oceans in the mantle*

Department of Earth, Planetary and Space Sciences, UCLA, Fall 2020

*Slabs: Penetration, Stagnation, Fragmentation and Inundation*

Division of Geological and Planetary Sciences, Caltech, November 2019

*HeFESTo: A tool for exploring Earth's physical properties and their impact on dynamics*

CIG Webinar, May 2019

*Slabs: Penetration, Stagnation, Topography and Inundation*

Department of Earth Sciences, UCR, Riverside, CA, April 2019

*How minerals control the thermal evolution of the Earth*

Department of Geology, CalState Northridge, Northridge, CA, March 2019

*Plumes: Structure and Entrainment, a 3D experimental Investigation*

Department of Earth Sciences, UCSB, Santa Barbara, CA, November 2018

*Slabs: Penetration, Stagnation, Topography and Inundation*

Scripps Institution of Oceanography, UCSD, La Jolla, CA, November 2018

*The influence of tectonics and mantle dynamics on the CCD over the last 100 My*

Department of Earth Sciences, USC, Los Angeles, CA, September 2018

*The thermal evolution of the Earth and its impact on the surface*

Earth and Planetary Sciences, UCB, Berkeley, CA, September 2018

*Inside out: How the Interior shapes the surface*

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Earth and Planetary Sciences, UCLA, Los Angeles, CA, USA, April 2017

*The role of thermodynamics in the secular evolution of the Earth*

CEED, University of Oslo, Oslo, Norway, February 2017

*The role of thermodynamics in the secular evolution of the Earth*

Department of Earth Sciences, Royal Holloway, London, UK, January 2017

*Flat Slabs and Surface Uplift*

Department of Earth Sciences, Durham University, Durham, UK, November 2015.

*Anatomy and Entrainment of thermal plumes: An experimental perspective*

Department of Earth Sciences, ETH, Zurich, April 2015

*Dynamics of Planetary Interiors*

Lecturer at CIDER Summer School: Kavli Institute for Theoretical Physics,  
University of California, Santa Barbara, CA, July 2014 (lectures, tutorials)

*What is a plume: Laboratory perspectives on plume structure and entrainment*

Dept. of Applied Maths, UCL, December 2013

*Slab morphology and density structure controls on dynamic topography and basin evolution*

Dept. of Geology and Geophysics, Yale University, New Haven, CT, USA, November 2013

*Interiors and Surfaces*

Royal Astronomical Society, Friends of RAS, Burlington House, London, UK, May 2013

*Dynamics and Composition of the Mantle: From the Atomic to the Global Scale*

Shortcourse Dipartimento Scienze della Terra, Roma Tre, Rome, Italy, April 2013

*What is a plume: Laboratory perspectives on plume structure and entrainment*

Dept. of Earth Sciences, University of Bristol, Bristol, UK, January 2013

*Dynamic Topography: A window into earth's interior*

School of Earth and Environmental Sciences, Leeds University, Leeds, June 2012

*Dynamic Topography: A window into earth's interior*

Dipartimento Scienze della Terra, Roma Tre, Rome, Italy, April 2012

*Insights into plume structure and entrainment from high-resolution velocimetry and thermometry*

Dept. of Earth Sciences, University of Southern California, LA, USA, December 2011

*Dynamic Topography: A window into earth's interior*

Dipartimento Scienze della Terra, University of Milan, Milan, Italy, September 2011

*What is a plume?*

Department of Earth Sciences, Cardiff University, Cardiff, UK, March 2010

*Survival, stirring and entrainment in mantle plumes: An experimental perspective*

Department of Earth Sciences, Durham University, Durham, UK, February 2010

*Coupling between Earth's interior structure, dynamics and surface deformation*

Institute of Tectonics and Geophysics, Leeds University, Leeds UK, December 2009

*Coupling between Earth's interior structure, dynamics and surface deformation*

Earth Sciences, Oxford University, Oxford, UK, October 2009

*Earth's topography: A window into mantle dynamics*

Earth Sciences, University of Edinburgh, Edinburgh, UK, December 2008

*Earth's topography: A window into its dynamic interior*

Mechanical Engineering, University College London, London, UK, November 2008

*Earth's surface deformation: The role of topography, lithospheric structure and mantle flow*

Earth Sciences, Imperial College, London, UK, November 2008

*Topography: a window into Earth's mantle*

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Bullard Laboratories, Cambridge University, Cambridge, UK, October 2008

*Lithospheric production, ocean volume and sea-level changes in the Cenozoic*

IUPUI, Indianapolis, Indiana, April 2008

*Earth's topography: A window into Earth's dynamics*

University College London, London, UK, May 2007

*Earth under stress: mantle dynamics and surface deformation*

University of Colorado, Boulder, CO, April 2007

*How do plates and mantle interact: Continental deformation and great earthquakes*

New Mexico Tech, Socorro, NM, October 2006

*Nature and dynamics of Earth's transition zone: a multidisciplinary approach,*

Lecturer at second CIDER Summer School: Kavli Institute for Theoretical Physics,

University of California, Santa Barbara, CA, July 2006 (2 lectures)

[[http://online.kitp.ucsb.edu/online/earth\\_m06/](http://online.kitp.ucsb.edu/online/earth_m06/)

*The origin of great earthquakes: a geodynamical perspective*

University of Chicago, Chicago, IL, December 2005

*Earth under stress: mantle flow, surface deformation and great earthquakes*

Packard Foundation Exit Seminar, Monterey Bay Aquarium, September 2005

*Plate dynamics, lithospheric stress and great earthquakes*

University of California, Davis, CA, May 2005

*Earth under stress: plate dynamics, surface deformation and great earthquakes*

Cornell University, Ithaca, NY, April 2005

*Earth under stress: mantle flow and surface deformation*

University of California, Berkeley, CA, February 2005

*Relating geochemical and seismological heterogeneity in the Earth's mantle,*

Lecturer at first CIDER Summer School: Kavli Institute for Theoretical Physics,

University of California, Santa Barbara, CA, July 2004 (4 lectures)

[<http://online.itp.ucsb.edu/online/earth04/>]

*Earth under stress: mantle flow, plate dynamics, and surface deformation*

Massachusetts Institute of Technology, Cambridge, MA, May 2004

*The origin of the asthenosphere*

Bowling Green University, Bowling Green, OH, April 2004

*The low velocity zone under continents and oceans: implications for geodynamics*

Northwestern University, Evanston, IL, April 2004

*Journey to the center of the Earth*

Women at the Center, University of Michigan, Ann Arbor, MI, November 2003

*Earth under stress: mantle flow, plate dynamics, and surface deformation*

Washington University, St. Louis, MO, October 2003

*Fluid dynamics of the Earth's interior*

Geophysical and Environmental Fluid Dynamics Series, Department of Civil and

Environmental Engineering University of Michigan, April 2002

*Mantle flow and surface deformation*

University of Chicago, Chicago, IL, October 2001

*The origin of the structure in the Earth's deep interior*

Southern Methodist University, Dallas, TX, October 2000

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*The origin of the structure in the Earth's deep interior*

Arizona State University, Tempe, AZ, October 2000

*The origin of the structure in the Earth's deep interior*

Indiana University, Bloomington, IN, October 2000

*Causes and consequences of lateral heterogeneity in the Earth's mantle*

Scripps Institution of Oceanography, La Jolla, CA, June 2000

*Causes and consequences of lateral heterogeneity in the Earth's mantle*

Seismological Laboratory, Caltech, CA, April 2000

*Inside the Earth*

Center for the Education of Women, University of Michigan, Ann Arbor, MI, October 1999

*The surface geological record and the physics of the Earth's mantle*

Department of Physics, University of Michigan, Ann Arbor, MI, October 1998

*Geology and mantle dynamics*

Department of Geology, Northwestern University, Evanston, IL, June 1998

*Experimental investigations of mantle plumes*

Department of Geophysical Sciences, University of Chicago, Chicago, IL, January 1998

*Cenozoic history of continental flooding: tectonic and geodynamic considerations*

School of Earth and Atmospheric Sciences, Georgia Tech, Atlanta, GA, February 1997

*Uplift and subsidence history of continents and relative sea level change in the Cenozoic*

Department of Earth and Planetary Sciences, Washington University, St. Louis, MO, January 1997

*Plate tectonic history and mantle dynamics: Models of mantle structure, the geoid and plate motions & Convection at very high Rayleigh numbers: experimental constraints on plume dynamics*

Department of Geological Sciences, University of Michigan, Ann Arbor, MI, April 1996

*Plate tectonic history and mantle dynamics: Models of mantle structure, the geoid and plate motions*

Department of Geology and Geophysics, University of Minnesota, Minneapolis, MN, May 1996

*The forces that drive plate tectonics*

Department of Physics, University of Toronto, Toronto, Canada, October 1995

*The forces that drive plate tectonics*

Geophysics Program, University of Washington, Seattle, WA, October 1995

*What forces drive plate tectonics?*

Department of Terrestrial Magnetism, Carnegie Institution of Washington, Washington, DC, December 1994

*Dynamics of Cenozoic plate motions*

Laboratoire de Sciences de la Terre, ENS-Lyon, France, November 1994.

*The history and dynamics of plate motion & The nature of mantle plumes and their role in mantle convection: new experimental results*

School of Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta, GA, November 1992



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*Temporal evolution of plate velocities and mantle convection: new observational and experimental studies,*

Geophysical Laboratory, Carnegie Institution of Washington, Washington DC, September 1991

### ***Invited Talks: National and International Meetings***

*Plate Tectonics, Convection, Phase Transitions and Heterogeneity in the Mantle*

Fall AGU (F19), San Francisco, CA, December 2019

*Discussion Leader: Geodynamics Recycling*

Interior of the Earth Gordon Research Conference, Mt. Holyoke, June 2019

*The inevitable control of Earth's deep interior on the surface*

Birch Lecture at the FallAGU meeting, Washington DC, December 12, 2018

*Mixing and Entrainment in Mantle Convection*

Lecturer at CIDER Summer School: Kavli Institute for Theoretical Physics,  
University of California, Santa Barbara, CA, July 2018 (lectures, tutorials)

*Discussion Leader: Deep Reservoirs Through Time*

Deep Carbon Gordon Research Conference, Bryant University, June 2018

*Global models and global challenges*

Trond Torsvik symposium, Tenerife, October 2017

*Global modeling of early and recent Earth*

XV International Workshop of Mantle and Lithosphere Dynamics, Netherlands, August, 2017

*Global models and global challenges*

Deep Carbon Observatory Workshop, Vernadsky Institute, Moscow, May 2017

*Mantle thermodynamics and convection: thermal stratification during evolution*

Flow in the Deep Earth, Collège de France, Paris, December 2016

*Experimental, Numerical and Observational Models in Geodynamics*

EGU-2015, Union Symposium celebrating 200 years of modelling, Vienna, April 2015

*The influence of thermodynamics on mantle dynamics*

Rick-fest; Symposium in honor of Rick O'Connell, Harvard University, September 2014

*Resolving the deep Earth: The sub-lithospheric contribution to topography*

2014 Topo-Europe, Keynote Speaker, Barcelona, Spain, September 2014

*Transition Zone Structure*

Fall AGU, San Francisco, CA December 2013

*Physical and Chemical Heterogeneity in the Mantle.*

Fall AGU, San Francisco, CA December 2013

*Lithosphere-Asthenosphere Coupling*

Lithosphere-Asthenosphere Workshop, *College de France*, Paris, November 2013

*Mantle surface coupling: A window into Earth's interior*

25th Kongsberg Seminar, Institute of Planetary Physics, Oslo, Norway, May 2012

*Lithospheric Structure, Mantle Flow and the State of Stress of the African Plate*

Afar Meeting, Ethiopia, Addis Ababba, Jan 2012

*What is a plume? An Experimental Perspective*

Royal Astronomical Society/BGA Discussion Meeting, UKSEDI, November 2011

*Dynamic Topography: Fact or fiction*

Geological Society of London Special Meeting, London, UK, September 2011

*New Perspectives and Unsolved Problems in Earth's Interior*

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Frontiers of Science, Royal Society, Sao Paulo, Brazil, August 2010.

*Dynamic Topography Signals: Fact or Fiction*

EGU (GD3.1/TS10.2): Geodynamics: Vienna, Austria, May 2010

*Dynamic Topography Signals: Fact or Fiction*

Fall AGU (S01): General Seismology: San Francisco, CA, December, 2009

*Coupling of Earth's interior structure, dynamics and surface deformation*

Crust to Core Conference, Abdus Salam International Center for Theoretical Physics, Trieste, Italy, July 2009.

*Dynamical origin and consequences of chemical heterogeneity in Earth's mantle*

Modeling of Mantle Convection and Lithosphere Dynamics Workshop, Braunwald, Switzerland, July 2009.

*Dynamical origin and consequences of chemical heterogeneity in Earth's mantle*

New Views of Earth's Interior; joint BGA Min. Soc. Meeting, London, UK, February, 2009.

*Modeling sources of topography and stress*

Workshop for advancing numerical modeling of Mantle convection and lithospheric dynamics, Davis, CA, July 2008.

*Models of intraplate stresses in the North and South American plates*

Spring AGU (S34A): Ft. Lauderdale, FL, May 2008.

*Plate-mantle coupling*

Fall AGU (T03): San Francisco, CA, December 2007.

*Subduction: primary driver of chemical and dynamical heterogeneity in the mantle*

C2C-The fate of subducted material, Bergamo, Italy, February 2007

*Origin and evolution of lithospheric stresses in the Cenozoic*

Fall AGU (T03): San Francisco, CA, December 2004.

*Origin and evolution of lithospheric stresses in the Cenozoic: implications for the Pacific plate*

Western Pacific Geophysics Meeting (T12): Honolulu, HI, August 2004.

*Past plate motions and the structure of the deep mantle*

SEDI Meeting, Garmisch-Partenkirchen, Germany, July 2004.

*Dynamic topography of continents and oceans*

Joint Assembly, AGU, CGU, SEG, EEGS (T04): Montreal, Canada, May 2004

*Earth under stress: mantle flow, plate dynamics, and surface deformation*

Gordon Conference, Holyoke, MA, June 2003

*Mantle convection and plate dynamics*

American Physical Society, Austin, TX, March 2003

*Slab-induced flow and seismic anisotropy at the core-mantle boundary*

Spring AGU (S01): Boston, MA, May 2001

*The dynamical consequences of phase transitions*

Goldschmidt : Hot Springs, VA, May 2001

*Mantle flow and the plate driving mechanism*

Fall AGU (U06): San Francisco, CA, December 2000.

*Is there partial melt in the upper mantle?*

Fall AGU (S07): San Francisco, CA, December 2000

*Causes and consequences of lateral heterogeneity in the Earth's mantle*

ChiPR Workshop, Arlington, VA, June 2000

*Discussion leader: Deep interior research questions*

US Array Workshop, Houston, TX, September 1999

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*Causes and consequences of lateral heterogeneity in the mantle*

Fall AGU (U22B): San Francisco, CA, December 1999

*Mantle dynamics at the surface: evidence from the topography of continents*

Spring AGU (U41A): Boston, MA, June 1999

*The tectonic record in the deep mantle*

IUGG (JS13): Birmingham, UK, July 1999

*Dynamic topography and the African superswell*

Fall AGU (S12): San Francisco, CA, December 1998.

*Modeling plate motions and intraplate stresses*

Chapman Conference, Point Reyes, CA, June 1997

*The fate of slabs*

Gordon Conference, Plymouth, NH, July 1996

*Subduction history, plate motions and mantle heterogeneity*

Spring AGU (U07): Baltimore, MD, May 1995

*What forces cause plate motions?*

Spring AGU (U02): Baltimore, MD, May 1994

*Plate motions since 120 Ma*

NASA Geophysics Investigators Workshop, Goddard Space Flight Center, Greenbelt, MD, 10/1992

*Experimental results of very high  $Ra\#$  and  $Pr\#$  convection in a fluid with strongly temperature dependent viscosity*

Numerical Modeling: Lithospheric and Mantle Dynamics Workshop, Weilburg, Germany, 8/1991

*Extensional tectonics at the eastern edge of the Puerto Rico microplate*

7<sup>th</sup> Annual Symposium on Caribbean Geology, Mayagüez, PR, February 1988

### ***Past, Current, and Pending Support***

*External: pending*

*External: current*

NSF: EAR-\$448,000 (3/1/2019-2/28/2022) (**lead PI**; co-PI M. Jackson, UCSB)

*External: Past*

NERC: NE/M00046X/1 £2.72M (1/9/2014-31/8/2019) (**co-I**; lead PI: J. Brodholt, UCL)

NERC: NE/K006061/1 £270,904 (1/4/2013-31/3/2016) (**co-I**; lead PI: A. Ferreira, UCL)

NERC: NE/1024429/1 £11,420 (1/9/2011-31/08/2014) (**co-I**; lead PI: H. Davies, Cardiff)

REA: ANDYN 251954 €241,900 (1/1/11-31/3/13 ) Marie Curie IIF to F. Dávila, (**sole PI**)

NERC: NE/H007636/1 £502,405 (1/1/2010-12/31/2012) (**co-I**; lead PI: J. Brodholt, UCL), £11,768

NERC: NE/J024821/1 £31,249 (1/1/2012-30/6/2012) (**co-I**; lead PI: M. Walter, Bristol University)

NERC: NE/J024813/1, £17,143 (1/1/2012-30/6/2012) (**lead PI**)

NSF: EAR-111487 \$40,000 (1/5/11-30/6/11) GRC: Interior of the Earth (**sole PI**)

NSF: EAR-0551991 \$502,750 (3/15/2006-3/14/2009) (**lead PI**; co-PIs: A. Cotel, CEE, U. Michigan; J. Whitehead and S. Hart, WHOI)

Royal Society: 2009/R4 £4,000 (15/5/2010-14/7/2010) International Travel Grants (**sole PI**)

NSF: EAR-0609553 \$396,577 (6/1/2006-5/31/2009) (**lead PI**; co-PI: Clint Conrad, U. Hawaii)

Royal Society: 2008/R2 £4412 (1/1/2009-31/3/2009) International Incoming Short Visit

NSF-EAR-0551991 \$10,000. (7/31/2007-6/30/2008) (**sole PI**)

NSF: EAR-0456112 \$130,210 (4/1/2005-5/31/2007) (**co-PI**; lead PI: B. Romanowicz, U.C. Berkeley)

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NSF: EAR-0440229 \$35,553 (1/1/2005-12/31/2007) (**co-PI**: S. Bilek, New Mexico Tech)  
Packard Fellowship for Science & Engineering: \$625,000 (10/2000-9/2005) (**sole PI**)  
NSF: EAR-9980551 \$183,982 (3/15/2000-1/14/2003) (**sole PI**)  
Alfred P. Sloan Foundation: \$40,000 (9/2001-8/2003) Sloan Research Fellowship in Physics (**sole PI**)  
NSF: EAR-0079980 \$60,000 (8/01/2000-7/31/2001) (**lead PI**; co-PI: L. Stixrude, U. Michigan)  
NSF: EAR-0042643 \$5,000 (7/1/2000-12/31/2000) REU Supplement (**sole PI**)  
NASA: Dynamics of the Solid Earth (1/97-12/99)-\$377,810 (**co-PI**; lead PI: S. Solomon, DTM-CIW)  
AGU-IUGG Travel Grant: -\$1,500. (7/1999) (**sole PI**)  
NSF: EAR-9505217 \$72,000 (6/95-6/97) Earth Sciences Postdoctoral Research Fellowship (**sole PI**)

### University of Michigan (proposal competition): Past

Research Partnership Program (2004) -*Stresses in Earth's crust*-\$4,000  
Elizabeth Crosby Research Fund (2004) - \$20,000  
OVPR, Distinguished Faculty/Graduate Student Seminar Program (2000)-\$10,000  
Research Partnership Program (1999) *3-D density structure of the Earth's mantle*-\$3,000  
Career Development Fund (1999)-\$5,000.00  
Turner Funds, Geological Sciences (spring 1998-1999) - \$4000  
Startup Funds: (1997)-\$206,000

### ***Postdoctoral, Graduate and Undergraduate Advising***

#### Visiting Scholars

Teh-ru Song (May 2012)- Research Associate, JAMSTEC  
Gabriele Cambiotti (Dec. 2011)-Ricercatore, U. degli studi di Milano  
Federico Dávila (2011-2013)- Marie Curie International Incoming Fellow  
Nico de Koker (2011)-Research Fellows, Bayerisches GeoInstitut,  
Santanu Bose (2010)-Lecturer University of Calcutta, Royal Society International Travel for  
Collaboration  
Federico Dávila (2009)- Asst. Professor, U. de Córdoba, Argentina, Royal Society International  
Incoming Short Visit Fellowship  
Federico Dávila (2007)-Asst. Professor, U. of Córdoba, Argentina, Fulbright Scholar at U. Michigan

#### Postdoctoral Fellows

Xuesong Ding (2019-)-100%  
Charitra Jain (2019)-25%  
Juan Gonzalez (2017-2018)-50%  
Neil Cagney (2013-2017)-100%  
Keely O'Farrell (2014-2016)-100%  
Fabio Cramerì (2014-2016)-100%  
Joost van Summeren (2009-2012)-50%  
William H. Newsome (2011)-100%  
Clinton P. Conrad (2001-2005)-100%  
Hans Johnston (Applied Math) (2002)-15%  
Sue Bilek (2001-2003)-100%  
Margaret M. Streepey (2001)-100%

#### Now at

Postdoctoral Fellow, UCLA  
Postdoctoral Fellow, U. Durham  
Lecturer, U of Madrid  
Lecturer, Queen Mary University  
Assistant Professor U. Kentucky  
Research Fellow, University of Oslo  
Researcher, KWR, Netherlands  
Fluent, Michigan  
Full Professor University of Oslo  
Research Asst. Prof. U. Massachusetts  
Full Professor at New Mexico Tech  
Full Professor at Earlham College, Indiana

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### Graduate Students Advised

Ph.D. Advisor for Matthew. Bogumil (2020-)  
Ph.D. Advisor for Boontigan Kuhasubpasin (2019-)  
Ph.D. Advisor for Xiyuan Bao (2018-)  
Ph.D. Secondary Advisor for Elodie Kendall (2015-2019)  
Ph.D. Advisor for Antoniette Grima (2015-2019), Postdoc at UT Austin  
Ph.D. Advisor for Kiran Chotalia (2015-2019), Postdoc at U of Florida  
Ph.D. Secondary Advisor for Caroline Eakin, Yale University (Ph.D. 2015), Ass. Prof. ANU  
Ph.D. Advisor for Peerasut Wongsureerat (2010-2014)  
Ph.D. Advisor Marie B. Pears (Ph.D 2015)-Star Stone Insurance  
Ph.D. Advisor for William H. Newsome (Ph.D. 2011)-Airflow Sciences Corporation, Michigan  
Ph.D. Advisor for John Naliboff (Ph.D. 2009)-New Mexico Tech  
Ph.D. Advisor for Wenbo Xu (Ph.D. 2008)-Director and Houlihan Looked  
Ph.D. Co-Advisor for Lu Lu (Ph.D. 2006)-Applied Math, Wachovia Bank Analyst  
Ph.D. Co-Advisor for: Margaret M. Streepey (Ph.D. 2001) Professor of Geology- Earlham College  
M.Phil. Advisor for Tomos Kempley (2013-)  
M.Sc. Advisor for Elodie Kendall, UCL (2015)  
M.Sc. Advisor for Antoniette Grima, UCL (2012)  
M.Sc. Advisor for: Xin Wang (M.Sc. 2008)  
M.Sc. Advisor for: Xu Xiqiao and Nico de Koker (M.Sc. 2005)  
M.Sc. Advisor for: Jerome H. Guynn and Mark J. Wenzel (M.Sc. 2002)

### Undergraduate Students:

Arthur Lo (2020-)-Independent Research (How to merge mantle plumes)  
Jade Wight (2019-)-Independent Research (Measuring plume generated dynamic topography in the lab)  
Matthew Bogumil (2019-2020)-Independent Research (Effects of bathymetry on the CCD)  
Genesis García (2019)-Independent Project (Google Earth field trip guide of Yellowstone)  
Janae Yip (2019)-Capstone Project (Sea level: Past, present and future)  
Alex McFadden (2019)-Independent Research (Effects of internal heating on surface velocities)  
Rizuko Yamaoka (2017-2018)- M.Sci 4th year projects  
Carol Paige (2016-2017)- M.Sci 4th year project (Oblique subduction and strain partitioning)  
Yupei Wang (2016)-Undergraduate Intern (Transdimensional modelling of viscosity structure)  
Kiran Chotalia (2014-2015)-M.Sci 4th year project (Plume shearing by plate motions)  
James Cook (2014-2015)-M.Sci 4th year project (Slab pull and oblique spreading)  
Alexander Robson (2014-2015)-M.Sci 4th year project (Transdimensional study of mantle viscosity)  
Joanna Reynolds (2013-2014)-M.Sci 4th year project (The viscosity structure of the mantle)  
Rhys Shea (2013-2014)-M.Sci 4th year project (The effect of flat subduction on plate velocities)-First Prize NefTex Earth Model award.  
Joel Davis (2012-2013)-M.Sci 4th year project (CCD evolution through time)  
Tomos Kempley (2010-2012)-M. Sci 4th year project (Seismic detectability of plumes)  
Marie B. Pears (2009-2010)-M. Sci 4th year project (Plume collapse)  
Jennifer Lamp (2005-2006) (Plume structure and entrainment)  
Amanda Seltzer (2005)-Independent Research (How the media reports natural disasters)  
Satomi Abe (2003-2004)-Work-Study (Geodynamic lecture notes, equations and examples)  
Martha Lewandowski (2003)-Work-Study  
Jeff Paine (August 2002-July 2003)- (3-D temperature field of the mantle)

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Vienna Lit (December 2001-December 2002) (1-D seismic velocity profiles)  
Hans Hiser (Winter 2000-July 2002) (Fracture zone map of the ocean floor)

### Member of Thesis Committee or Examiner:

Ph.D. Thesis Committee: Yufan Xu  
Ph.D. Thesis Committee: Ashna Aggarwal  
Ph.D. Thesis Committee: Yuqing Xie  
Ph.D. Thesis Committee Emily Hawkins  
Ph.D External Examiner Ingo Stotz, U. of Copenhagen (December 2017)  
Ph.D External Examiner Matthew Price, U. of Cardiff (November 2016)  
Ph.D. External Examiner: Mattia Guerri, U. of Copenhagen(September 2016)  
Ph.D. External Examiner: Antoine Kraych, U. of Lille(June 2016)  
Ph.D. External Examiner: Lea Bello, ENS-Lyon (January 2015)  
Ph.D. External Examiner: Jeff Winterbourne, Cambridge University (November 2011)  
Ph.D. Secondary Advisor for Alexis Cartwright-Taylor, UCL  
Habilitation Defense for Dr. Laurent Husson, University of Rennes, (Rapporteur, January 2010)  
M.Sc to Ph.D transfer: Joanna Faure Walker, Birkbeck,  
M.Sc: External Examiner: Jeff Winterbourne, Cambridge University (October 2008)  
Ph.D. Thesis Committee: J.P. Brandenburg  
Ph.D. Thesis Committee: Jesse Otero (Math) (defended May 2002)  
Ph.D. Thesis Committee: Allen McNamara (defended April 2002)  
Ph.D. Thesis Committee: Boris Kiefer (defended March 2002)  
Ph.D. Thesis Committee: Gerd Steinle-Neumann (defended October 2001)  
Ph.D. Thesis Committee: Nazli Nomanbhuoy (defended January 1998)

### Teaching Experience

Summary of Courses Taught Exclusive of Seminars: GSxx taught at University of Michigan, GEOLxx at UCL, EPSxx at UCLA

<b>Course #</b>	<b>Title</b>	<b>Format</b>	<b>Type</b>	<b># Terms Taught</b>
EPS 13	Natural Disasters	Lecture	Non-Majors	1
EPS 282	Sea Level: Past, Present and Future	Seminar	Graduate	1
EPS 119	Continental Drift and Plate Tectonics	Lecture	Majors/Non-	2
GEOL3003	Global Tectonics and Geodynamics	Lecture	Majors	12
GEOLG/M25	Geodynamics	Lecture	Majors	2
GS 321	Earth System Dynamics	Lecture	Majors	1 (Winter)
GS 107	Earthquakes & Volcanoes	Lecture	Non-Majors	10
GS 140	Science and the Media	Seminar	Non-Majors	6
GS 486	Geodynamics	Lecture	Majors/Grad	3
GS 117	Introduction to Geology	Lecture/Lab	Non/Majors	1.5
GS 270	Plate Tectonics	Seminar	Non-Majors	1
GS 205	Earth: Dynamic planet	Lecture	Non-Majors	1
GS 525	Tectonophysics	Lecture	Majors/Grad	1

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### Workshop on Inclusive Excellence

UCLA, Hyatt Centric, Santa Barbara, March 2019

### Workshop on Best Practices for Teaching

CEILS, UCLA, Los Angeles, September 2018

### **Publications**

<http://orcid.org/0000-0003-0924-6587> Orcid (includes Researcher-Id from WOS and Scopus Id)

[https://scholar.google.com/citations?](https://scholar.google.com/citations?hl=en&user=JZewhEsAAAAJ&view_op=list_works&sortby=pubdate)

[hl=en&user=JZewhEsAAAAJ&view\\_op=list\\_works&sortby=pubdate](https://scholar.google.com/citations?hl=en&user=JZewhEsAAAAJ&view_op=list_works&sortby=pubdate) -Google Scholar

**(In bold: postdoc or student at the time work was carried out; undergrad)**

### To be submitted shortly (drafts available upon request):

1. **M Bogumil**, Tushar Mittal and C. Lithgow-Bertelloni, *Evolution of the CCD in the last 100 Ma: Implications for the carbon cycle*, Geophysical Research Letters
2. **X. Bao**, C. Lithgow-Bertelloni and M. Jackson, *Are all plumes hot?*, Nature

### Submitted or in Revision:

1. **N. Cagney, F. Cramer**, and C. Lithgow-Bertelloni, *Time-scales of Mixing in Rayleigh-Bénard Convection: Implications for Earth's mantle*, J of Fluid Mechanics **(in Revision)**
2. **J. Naliboff** and C. Lithgow-Bertelloni, *Forever linked: Mantle flow controls surface deformation*, Geophysical Research Letters **(in Revision)**
3. **N. Cagney**, C. Lithgow-Bertelloni and L. Stixrude, *Influence of phase transformations on Earth's thermal evolution*, Nature, **(in Revision)**
4. **A. Grima**, F. Cramer and C. Lithgow-Bertelloni, *Orphan Slabs: Slab Break-off at Mid-Mantle Depths*, PNAS **(in Revision)**
5. **K. Chotalia**, J. Brodholt, C. Lithgow-Bertelloni, Science, *Surface exposure constraints on the deep water cycle*, Science Advances, **(Submitted)**
6. J. Dong, Rebecca A. Fischer, Lars P. Stixrude, C. Lithgow-Bertelloni, *The volume of Earth's early oceans constrained by temperature-dependent mantle water storage capacity*, AGU Advances **(Revised)**

### Accepted, in Press or Published:

1. S. Wei, P. Shearer, C. Lithgow-Bertelloni and L. Stixrude (2020) *Oceanic plateau of the Hawaiian mantle plume subducted to the lower mantle*, Science **(Accepted)**
2. **A. Grima**, C. Lithgow-Bertelloni and F. Cramer (2020) *Orphaning Regimes: The missing link between flattened and penetrating slab morphologies*, Frontiers in Earth Sciences, 8, <https://doi.org/10.3389/feart.2020.00374> **(Invited)**
3. CORES Committee (2020), *A Vision for NSF Earth Sciences 2020-2030: Earth in Time*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25761>.
4. **K. Chotalia**, N. Cagney, C. Lithgow-Bertelloni, and J. Brodholt (2019) *The coupled effects of mantle mixing and a water-dependent viscosity on the surface ocean*, EPSL, 530, <https://doi.org/10.1016/j.epsl.2019.115881>.
5. M. Faccenda, A. Ferreira, N. Tisato, C. Lithgow-Bertelloni, L. Stixrude, G. Pennacchioni (2019) *Extrinsic elastic anisotropy in a compositionally heterogeneous mantle*, Journal of Geophysical Research: Solid Earth, 124. <https://doi.org/10.1029/2018JB016482>

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6. F. Cramer, C. P. Conrad, L. Montesi and C. Lithgow-Bertelloni (2019) *The dynamic life of an oceanic plate* **Tectonophysics**, 760, 107-135.
7. **C Eakin** and C. Lithgow-Bertelloni (2018), *An Overview of Dynamic Topography: The Influence of Mantle Circulation on Surface Topography and Landscape* in Mountains, Climate and Biodiversity, Wiley, eds. Carina Hoorn and A. Antonelli, Mountains, Climate and Biodiversity, pp 544.
8. F. Dávila, C. Lithgow-Bertelloni, F. Martina, P.Ávila, J. Nóbile, G. Collo, M. Ezpeleta, H. Canelo, F. Sánchez (2018) *Mantle influence on Andean and pre-Andean topography* in The evolution of the Chilean-Argentinean Andes, eds. Folguera A. et al., Springer Verlag, 363-385 (Invited)
9. **F. Cramer** and C. Lithgow-Bertelloni (2017) *Abrupt upper-plate tilting during slab-transition zone collision*, **Tectonophysics**, 746, 199-211.
10. **F. Cramer**, C. Lithgow-Bertelloni and P. Tackley (2017) *The dynamical control of subduction parameters on surface topography*, **Geochemistry, Geophysics, Geosystems**, 18, doi:10.1002/2017GC006821.
11. J.M. Kendall and C. Lithgow-Bertelloni (2016) *Why is Africa Rifting?*, From: Wright, T. J., Ayele, A., Ferguson, D. J., Kidane, T. & Vye-Brown, C. (eds) *Magmatic Rifting and Active Volcanism*. Geological Society, London, Special Publications, 420, <http://doi.org/10.1144/SP420.17>
12. **N. Cagney** and C. Lithgow-Bertelloni (2016) *Dynamics and excess temperature of a plume throughout its life cycle*, **Geophysical Journal International**, 205, 1574-1588
13. **N. Cagney, F. Cramer, W.H. Newsome**, C. Lithgow-Bertelloni, A. Cotel, S. Hart and J. Whitehead (2016) *Constraining the source of mantle plumes*, **Earth and Planetary Science Letters**, 435, 55-63.
14. M. L. Rudolph, V. Lekic, C. Lithgow-Bertelloni (2015) *Viscosity Jump in Earth's Mid Mantle*, **Science**, 350, 1349-1352.
15. **F. Dávila** and C. Lithgow-Bertelloni (2015) *Dynamic uplift during slab flattening*, **Earth and Planetary Science Letters**, 425, 34-43.
16. **N. Cagney, W.H. Newsome**, C. Lithgow-Bertelloni, A. Cotel, S. Hart and J. Whitehead (2015) *Temperature and Velocity Measurements of a Rising Thermal Plume*, **Geochem. Geophys. Geosyst.**, 16, 579-599, doi:10.1002/2014GC005576.
17. Tinetti, G, Drossart P., Eccleston, et al. (2015), *The EChO science case*, **Experimental Astronomy**, 40, 329-391, doi: 10.1007/s10686-0159484-8.
18. C. Lithgow-Bertelloni, *Driving Forces, Slab Pull, Ridges Push* (2014) in *Encyclopedia of Marine Geosciences*, Eds. Harff, J., M. Meschede, S. Petersen, J. Thiede, Springer-Verlag, pp 1-6. (Invited)
19. C. Lithgow-Bertelloni, *The Mohorovičić discontinuity* (2014) Eds. Harff, J., M. Meschede, S. Petersen, J. Thiede, Springer-Verlag, pp 1-7. (Invited)
20. **C. Eakin**, C. Lithgow-Bertelloni and F. Dávila (2014) *Influence of Peruvian Flat-Subduction Dynamics on the Evolution of the Amazon basin*, **Earth and Planetary Science Letters**, 404, 250-260.
21. S. Bose, N. Mandal, S. Puspendu, S. Sarkar and C. Lithgow-Bertelloni (2014) *Thrust initiation and its control on tectonic wedge geometry: An insight from physical and numerical models*, **J. Struc. Geo.**, 67, Part A, 37-49.
22. F. Dávila and C. Lithgow-Bertelloni (2014) Reply to Comment on *Dynamic topography in South America*, **Journal of South American Earth Sciences**, 50, 95-96.



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23. J. Whitehead, A. Cotel, S.Hart, C. Lithgow-Bertelloni and **W. H. Newsome** (2013) *Numerical calculations of two-dimensional large Prandtl number convection in a box*, J. of Fluid Mechanics, 729, 584-602.
24. **F. Dávila** and C. Lithgow-Bertelloni (2013) *Dynamic topography in South America*, Journal of South American Earth Sciences, 43, 127-144. (**Invited**)
25. M. Richards, E. Contreras-Reyes, C. Lithgow-Bertelloni, M. Ghiorso and L. Stixrude (2013) *Petrological Interpretation of Deep Crustal Intrusive Bodies Beneath Oceanic Hotspot Provinces*, Geochem. Geophys. Geosyst., 14, 604-619.
26. M. Mookherjee, B. Karki, L. Stixrude and C. Lithgow-Bertelloni (2012) *Energetics, equations of state and elasticity of NAL phase: Potential host for alkali and aluminum in the lower mantle*, Geophys. Res. Lett., 39, L19306, DOI: 10.1029/2012GL053682
27. L. Stixrude and C. Lithgow-Bertelloni (2012) *Geophysics of chemical heterogeneity in the mantle*, Annual Reviews of Earth and Planetary Science, 40, 565-595, 10.1146/annurev.earth.36.031207.124244
28. **J. B. Naliboff**, C. Lithgow-Bertelloni, L. J. Ruff, and N. de Koker (2012) *The effects of lithospheric thickness and density structure on Earth's stress field*, Geophysical Journal International, 188, 1-17, DOI: 10.1111/j.1365-246X.2011.05248.x
29. **van Summeren, J.**, C. P. Conrad, and C. R. Lithgow-Bertelloni (2012) *The Importance of Slab Pull and a Global Asthenosphere to Plate Motions*, Geochem. Geophys. Geosyst., 13, Q0AK03, doi:10.1029/2011GC003873.
30. L. Stixrude and C. Lithgow-Bertelloni (2011) *Thermodynamics of mantle minerals II: Phase Equilibria*, Geophysical Journal International, 184, 1180-1213, DOI: 10.1111/j.1365-246X.2010.04890.x
31. **F. M. Dávila**, C. Lithgow-Bertelloni and M. Giménez (2010) *Tectonic and dynamic controls on the topography and subsidence of the Pampean Plains of Argentina: the role of the flat slab*, Earth and Planetary Sciences Letters, 295, 187-194.
32. L. Stixrude and C. Lithgow-Bertelloni (2010) *Thermodynamics of Earth's mantle*, Reviews in Mineralogy and Geochemistry, 71, 465-484.
33. J. Ritsema, W. Xu, L. Stixrude and C. Lithgow-Bertelloni (2009) *Estimates of the transition zone temperature in a mechanically mixed upper mantle*, Earth and Planetary Science Letters, 277, 244-252 [doi:10.1016/j.epsl.2008.10.024](https://doi.org/10.1016/j.epsl.2008.10.024)
34. F. Cammarano, B. Romanowicz, L. Stixrude and C. Lithgow-Bertelloni (2009) *Inferring the thermochemical structure of the upper mantle from seismic data*, Geophysical Journal International, 179, 1169-1185, doi: 10.1111/j.1365-246X.2009.04338.x
35. J. Ritsema, P. Cupillard, B. Tauzin, **W. Xu**, L. Stixrude and C. Lithgow-Bertelloni (2009) *Joint mineral physics and seismic modeling of upper mantle temperature*, Geology, 37, 363 - 366.
36. **J. B. Naliboff**, C. Lithgow-Bertelloni and C. P. Conrad (2009) *Modification of the lithospheric stress field by lateral variations in plate-mantle coupling*, Geophysical Research Letters, 36, L22307, doi:10.1029/2009GL040484. (**Highlighted in EOS**)
37. S. L. Bilek , C.E., Elliott and C. Lithgow Bertelloni (2009) *Triggered Seismicity Associated with the 1990 Nicoya Gulf, Costa Rica ( $M_w=7.0$ ) Earthquake*, Geochemistry, Geophysics and Geosystems(G3), 10, Q04S13, doi:10.1029/2008GC002317.
38. **B. Wu**, C. Conrad, A. Heuret, C. Lithgow-Bertelloni and S. Lallemand (2008) *Reconciling strong slab pull and weak plate bending: The plate motion constraint on the strength of mantle slabs*, Earth and Planetary Science Letters, 272, 412-421.

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39. **W. Xu**, C. Lithgow-Bertelloni, L. Stixrude and J. Ritsema (2008) *The effect of bulk composition on seismic structure*, Earth and Planetary Science Letters, 275, 70-79, doi:10.1016/j.epsl.2008.08.012 .
40. A. M. Courtier, M. Jackson, J. Lawrence, Z. Wang, Cin-Ty Lee\*, R. Halama, J. Warren, R. Workman, W. Xu, M. Hirschmann, A. M. Larson, S. Hart, C. Lithgow-Bertelloni, L. Stixrude, W. P. Chen (2007) *Correlation of seismic and petrologic thermometers argues for deep thermal anomalies*, Earth and Planetary Science Letters, 264, 308-316.
41. **C. P. Conrad** and C. Lithgow-Bertelloni (2007) *Faster seafloor spreading and lithosphere production during the Mid-Cenozoic*, Geology, 35, 29–32; 10.1130/G22759A.1.
42. L. Stixrude and C. Lithgow-Bertelloni (2007) *Influence of phase transformations on lateral heterogeneity and dynamics in Earth's mantle*, Earth and Planetary Science Letters, 263, 45-55.
43. L. Stixrude, C. Lithgow-Bertelloni, B. Kiefer and P. Fumagalli (2007) *Phase stability and shear softening in CaSiO<sub>3</sub> perovskite at high pressure*, Physical Review B, 75, 024108-024117, 10.1103/PhysRevB.75.024108.
44. S. J. Loyd, T. W. Becker, C. P. Conrad, C. Lithgow-Bertelloni and F. A. Corsetti (2007) *Time-variability in Cenozoic reconstructions of mantle heat flow: plate tectonic cycles and implications for Earth's thermal evolution*, Proceedings of the National Academy of Sciences, 104, 14266-14271. 10.1073/pnas.0706667104.
45. **X. Xu**, C. Lithgow-Bertelloni and C. P. Conrad (2006) *Global Reconstructions of Cenozoic seafloor ages: Implications for bathymetry and sea level*, Earth and Planetary Science Letters, vol. 243, 552-564, doi:10.1016/j.epsl.2006.01.010.
46. Y. Ricard, F. Chambat and C. Lithgow-Bertelloni (2006) *Gravity observations and 3D structure of the Earth*, Comptes rendus de l'Académie Nationale des Sciences, C.R. Geoscience, 338, 992-1001.
47. **C. P. Conrad** and C. Lithgow-Bertelloni, *Influence of continental roots and asthenosphere on plate-mantle coupling* (2006) Geophysical Research Letters, vol. 33, L05312, 10.1029/2005GL025621.
48. A. H. Jahren, C. P. Conrad, N. Arens, G. Mora, and C. Lithgow-Bertelloni (2005) *A plate tectonic mechanism for methane hydrate release along subduction zones*, Earth and Planetary Science Letters, vol. 236, 691-704, 10.1016/j.epsl.2005.06.009.
49. L. Stixrude and C. Lithgow-Bertelloni (2005a) *Mineralogy and elasticity of the oceanic upper mantle: Origin of the low velocity zone*, Journal of Geophysical Research, vol. 110, B03204, 10.1029/2004JB002965.
50. **S. L. Bilek**, **C. P. Conrad** and C. Lithgow-Bertelloni (2005) *Slab pull, slab weakening and their relation to deep intraslab seismicity*, Geophysical Research Letters, vol. 32, L14305, 10.1029/2005GL022922.
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