CURRICULUM VITAE

Juan Pablo CANALES

Marine Geophysicist
Associate Scientist
Department of Geology and Geophysics, MS# 24
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Education

Ph.D.	1997	Institute of Earth Sciences (Barcelona, Spain)/University of Barcelona joint program (Marine Geophysics)
M.S	1993	Institute of Earth Sciences (Barcelona, Spain)/University of Barcelona joint program (Marine Geophysics)
B.S.	1991	University of Barcelona, Spain (Physics)

Professional Experience

2011 – Present: Associate Scientist (Tenured), Woods Hole Oceanographic Institution, Woods Hole, MA.
2005–2011: Associate Scientist, Woods Hole Oceanographic Institution, Woods Hole, MA.
1999–2005: Research Associate III, Woods Hole Oceanographic Institution, Woods Hole, MA.
1999: Postdoctoral Guest Investigator, Woods Hole Oceanographic Institution, Woods Hole, MA.
1997-1999: Postdoctoral Investigator, Woods Hole Oceanographic Institution, Woods Hole, MA. Funded by *Commission for Cultural, Educational and Scientific Exchange between the USA and Spain*, Fulbright Scholar Program (ref.# FU-96/0028992999).
1993-1997: Pre-doctoral investigator at Institute of Earth Sciences (CSIC), Barcelona, Spain.

Research Interests

Marine geophysics; formation and evolution of the oceanic lithosphere; seismic structure of mid-ocean ridges; hydrothermal circulation; lithospheric flexure, hotspots and intraplate volcanic islands.

To address these topics I use primarily seismic methods such as 2D/3D seismic tomography, seismic reflection imaging, and waveform inversion.

Teaching and Lectures

Fall 2006. Active Source Marine Seismology Course, Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program in Oceanography.

May 2005. Lecturer and Field Leader at the RIDGE-2000 Field School in Troodos Ophiolite, Cyprus.

Student Advising

2011-Present: Gregory Horning (MIT/WHOI Joint Program)
2006-2012: Min Xu (MIT/WHOI Joint Program)
2009: Shaunak Ghosh (WHOI Summer Student Fellow)
2007: Sreeja Nag (WHOI Summer Student Fellow)

Editorial and Community Service

2010-Present. Guest Associate Editor for *Geochemistry, Geophysics, Geosystems*

Manuscript Reviewer for:
AGU Geophysical Monograph
Earth and Planetary Science Letters
Geochemistry, Geophysics, Geosystems
Geology
Geophysical Journal International
Journal of Geophysical Research
Journal of Volcanology and Geothermal Research
Marine Geology
Marine Geophysical Researches
Tectonics
Tectonophysics

Proposal Reviewer for:
National Science Foundation (NSF, USA)
National Environment Research Council (NERC, UK)
Agencia de Evaluación y Prospectiva (ANEP, Spain)

Proposal Panel Member for:
National Science Foundation, MARGINS Program

Postgraduate Courses:

Iceland Summer School on Plume-Ridge Interactions. Organized by: RIDGE (NSF) and NordVulk (Nordic Volcanological Institute). Mytvan, Iceland, 20th-30th August 2000.

Professional Associations

American Geophysical Union

Honors

"García-Siñeriz" Foundation Award: Best Earth Sciences Ph.D. Thesis published in Spain in 1997.

Meetings and Workshops

Workshop "The MoHole: A Crustal Journey and Mantle Quest", Kanazawa, Japan, 3-5 June 2010: Steering committee member.

AGU Chapman Conference on "Detachments in Oceanic Lithosphere: Deformation, Magmatism, Fluid Flow and Ecosystems", 2010: Co-convener.

Joint EGS-AGU-EUG Assembly, 2003: Co-convener. Session: Structure, evolution, and hydrothermalism of oceanic core complexes.

American Geophysical Union Fall Meeting, 2002: Co-convener. Session: Crustal Structure and Tectonics of Intermediate Spreading-Rate Mid-ocean Ridges.

American Geophysical Union Fall Meeting, 2001: Co-convener. Session: Structure and evolution of the Galápagos Volcanic Province.

XXIV European Geophysical Society General Assembly, 1999: Convener. Session: Melt generation beneath mid-ocean ridges and hotspots.

XXIII European Geophysical Society General Assembly, 1998: Co-convener. Session: Structure and composition of the oceanic lithosphere: processes of crustal accretion at mid-ocean ridges.

Publications in Refereed Journals

(* Student authored publication) (# Post-doc authored publication)

In Press

47. **Canales, J.P.**, R.A. Dunn, G. Ito, R.S. Detrick, and V. Sallarès, Effect of variations in magma supply on the crustal structure of mid-ocean ridges: Insights from the western Galapagos Spreading Center, in "The Galapagos: An Earth Science Laboratory", edited by N. d'Ozouville, D. Graham, K. Harpp, and E. Mittelstaedt, *AGU Geophysical Monograph.*, in press.
46. Aghaei, O., M.R. Nedimović, H. Carton, S.M. Carbotte, **J.P. Canales**, and J. Mutter, Crustal thickness and Moho character of the fast-spreading East Pacific Rise from 9˚42'N to 9˚57'N from poststack-migrated 3D MCS data, *Geochem., Geophys., Geosyst.*, in press.

2014

45. Han, S., S.M. Carbotte, H. Carton, J. Mutter, O. Aghaei, M.R. Nedimović, and **J.P. Canales**, Architecture of off-axis magma bodies at EPR 9°37-40'N and implication for oceanic crustal accretion, *Earth Planet. Sci. Lett.*, *390*, 31-44, 2014.

2013

44. Carbotte, S.M., M. Marjanović, H. Carton, J.C. Mutter, **J.P. Canales**, M.R. Nedimović, S. Han, and M.R. Perfit, Fine-scale segmentation of the crustal magma reservoir beneath the East Pacific Rise, *Nat. Geosci., 6*, 866-870, 2013.

2012

43. #Zhao, M., **J.P. Canales**, and R.A. Sohn, Three-dimensional seismic structure of a Mid-Atlantic Ridge segment characterized by active detachment faulting (Trans-Atlantic Geotraverse, Mid-Atlantic Ridge 25°55'N-26°20'N), *Geochem., Geophys., Geosyst., 13*, Q0AG13, 2012.

2012

42. Henig, A.S., D.K. Blackman, A.J. Harding, **J.P. Canales**, and G.M. Kent, Downward continued multi-channel seismic refraction analysis of Atlantis Massif Oceanic Core Complex, 30°N Mid-Atlantic Ridge, *Geochem., Geophys., Geosyst*, 13, Q0AG07, 2012.
41. **Canales, J.P.**, H. Carton, J.C. Mutter, A. Harding, S.M. Carbotte, M.R. Nedimović, Recent advances in multichannel seismic imaging for academic research in deep oceanic environments, *Oceanography, 25*, 1, 113-115 2012.
40. Carbotte, S.M, **J.P Canales,** M.R. Nedimović, H. Carton, J.C. Mutter, Insights into mid-ocean ridge hydrothermal and magmatic processes from recent seismic studies at the EPR 8°20'-10°10'N and Endeavour Segments, *Oceanography*, *25*, 1, 100-112 2012.

39. **Canales, J.P.**, H. Carton, S.M. Carbotte, J.C. Mutter, M.R. Nedimović, M. Xu, O. Aghaei, M. Marjanović, and K. Newman, Network of off-axis melt bodies at the East Pacific Rise, *Nat. Geosci.*, *5*(4), 279-283, 2012.

2011

38. Marjanović, M., S. M. Carbotte, M. R. Nedimović, and **J.P. Canales**, Gravity and seismic study of crustal structure along the Juan de Fuca Ridge axis and across pseudofaults on the ridge flanks, *Geochem., Geophys., Geosyst., 12*, Q05008, 2011.
37. Newman, K.R., M. R. Nedimović, **J.P. Canales,** and S. M. Carbotte, Evolution of seismic layer 2B across the Juan de Fuca Ridge from hydrophone streamer 2D traveltime tomography, *Geochem., Geophys., Geosyst.*, *12*, Q05009, 2011.

2010

36. **Canales, J.P.**, Small-scale structure of the Kane Oceanic Core Complex, Mid-Atlantic Ridge 23°30′N, from waveform tomography of multichannel seismic data, *Geophys. Res. Lett.*, *37*, L21305, doi:10.1029/2010GL044412, 2010.

2009

35. *Xu, M., **J. P. Canales**, B. E. Tucholke, and D. L. Dubois, Heterogeneous seismic velocity structure of the upper lithosphere at the Kane oceanic core complex, Mid-Atlantic Ridge, *Geochem.*, *Geophys.*, *Geosyst.*, *10*, Q10001, doi:10.1029/2009GC002586, 2009.
34. Blackman, D. K., **J. P. Canales**, and A. Harding, Geophysical signatures of oceanic core complexes, *Geophys. J. Int.*, *178*, 593-613, 2009.
33. **Canales, J. P.**, M. R. Nedimović, G. M. Kent, S. M. Carbotte, and R. S. Detrick, Seismic reflection images of a near-axis melt sill within the lower crust at the Juan de Fuca Ridge, *Nature, 460*, 7251, 89-93, 2009.
32. Nedimović, M. R., D. R. Bohnenstiehl, S. M. Carbotte, **J. P. Canales**, and R. P. Dziak, Faulting and hydration of the Juan de Fuca plate system, *Earth Planet. Sci. Lett.*, 284, 94-102, 2009.

2008

31. Blacic, T. M., G. Ito, A. K. Shah, **J. P. Canales**, and J. Lin, Axial high topography and partial melt in the crust and mantle beneath the Western Galapagos Spreading Center, *Geochem.*, *Geophys.*, *Geosyst.*, *9*, Q12005, doi:10.1029/2008GC002100, 2008.
30. Nedimović, M. R., S. M. Carbotte, J. B. Diebold, A. Harding, **J. P. Canales**, and G. M. Kent, Upper crustal evolution across the Juan de Fuca ridge flanks, *Geochem., Geophys., Geosyst.*, *9*, Q09006, doi:10.1029/2008GC002085, 2008.
29. **Canales, J. P.,** B. E. Tucholke, M. Xu, J. A. Collins, and D. DuBois, Seismic evidence for large-scale compositional heterogeneity of oceanic core complexes, *Geochem., Geophys., Geosyst. 9*, Q08002, doi:10.1029/2008GC002009, 2008.
28. Carbotte, S. M., M. R. Nedimović, **J.P. Canales,** G. M. Kent, A. J. Harding, and M. Marjanović, Variable crustal structure along the Juan de Fuca Ridge: Influence of on-axis hotspots and absolute plate motions, *Geochem., Geophys., Geosyst., 9*, Q08001, doi:10.1029/2007GC001922, 2008.

2007

27. **Canales, J.P.**, R.A. Sohn, and B.J. deMartin, Crustal structure of the Trans-Atlantic Geotraverse (TAG) segment (Mid-Atlantic Ridge, 26° 10′N): Implications for the nature of hydrothermal circulation and detachment faulting at slow spreading ridges, *Geochem., Geophys., Geosyst. 8*, Q08004, doi:10.1029/2007GC001629, 2007.
26. deMartin, B., R.A. Sohn, **J.P. Canales**, and S.E. Humphris, Kinematics and geometry of active detachment faulting beneath the Trans-Atlantic Geotraverse (TAG) hydrothermal field on the Mid-Atlantic Ridge, *Geology*, *35*, 711-714, 2007.

25. Van Ark, E., R.S. Detrick, **J.P. Canales**, S.M. Carbotte, A.J. Harding, G.M. Kent, M.R. Nedimović, W.S.D. Wilcock, J.B. Diebold, and J. Babcock, Seismic structure of the Endeavour segment, Juan de Fuca Ridge: Correlations with seismicity and hydrothermal activity, *J. Geophys. Res.*, *112*, B02401, doi:02410.01029/02005JB004210, 2007.

2006

24. Singh, S. C., W. C. Crawford, H. Carton, T. Seher, V. Combier, M. Cannat, **J. P. Canales**, D. Dusunur, J. Escartín, and M. J. Miranda, Discovery of a magma chamber and faults beneath a Mid-Atlantic Ridge hydrothermal field, *Nature*, *442*, 1029-1032, 2006.
23. **Canales, J.P**., S. Singh, R.S. Detrick, S. Carbotte, A. Harding, G.M. Kent, J.B. Diebold, J.M. Babcock, and M.R. Nedimović, Seismic evidence for variations in axial magma chamber properties along the southern Juan de Fuca Ridge, *Earth Planet. Sci. Lett.*, *246*, 353-366, 2006.
22. Carbotte, S.M., R.S. Detrick, A.J. Harding, **J.P. Canales**, J. Babcock, G.M. Kent, E. van Ark, M.R. Nedimović, and J.B. Diebold, Rift topography linked to magmatism at the intermediate spreading Juan de Fuca Ridge, *Geology, 34*, 209-212, 2006.

2005

21. **Canales, J.P.**, R.S Detrick, S. Carbotte, G.M. Kent, J.B. Diebold, A. Harding, J.M. Babcock, M.R. Nedimović, and van Ark, E., Upper crustal structure and axial topography at intermediate-spreading ridges: Seismic constraints from the Southern Juan de Fuca Ridge, *J. Geophys. Res.*, B12104, doi:10.1029/2005JB003630, 2005.
20. Nedimović, M.R., S.M. Carbotte, A.J. Harding, R.S. Detrick, **J.P. Canales,** J.B. Diebold, G.M. Kent, M. Tischer, and J.M. Babcock, Frozen magma lenses below the oceanic crust, *Nature, 436*, 1149-1152, 2005.

2004

19. Blacic, T., G. Ito, **J.P. Canales**, R.S Detrick, and J. Sinton, Constructing the crust of the Galapagos Spreading Center 91.3° - 95.5° W: Correlation of seismic layer 2A with axial magma lens and topographic characteristics, *J. Geophys. Res., 109*, B10310, doi:10.1029/2004JB003066, 2004.
18. **Canales, J.P**., B. Tucholke, and J.A. Collins, Seismic reflection imaging of a young megamullion: Atlantis Massif (Mid-Atlantic Ridge, 30°10'N), *Earth and Planet. Sci. Lett.*, *222*, 543-560, 2004.

2003

17. Sinton, J.M., R.S Detrick, **J.P. Canales**, G. Ito, and M. Behn, Morphology and Segmentation of the Western Galápagos Spreading Center, 90.5° - 98°W: Plume-Ridge Interaction at an Intermediate Spreading Ridge, *Geochem., Geophys., Geosys.*, *4* (12), 8515, doi:10.1029/2003GC000609, 2003.
16. **Canales, J.P**., R.S. Detrick, D.R. Toomey, and W.S.D. Wilcock, Segment-Scale Variations in Crustal Structure of 150- to 300-k.y.-Old Fast Spreading Oceanic Crust (East Pacific Rise, 8°15'N-10°15'N) From Wide-Angle Seismic Refraction Profiles, *Geophys. J. Int*., *152*, 766-794, 2003.

2002

15. Detrick, R.S., J.M. Sinton, G. Ito, **J.P. Canales**, M. Behn, T. Blacic, B. Cushman, J.E. Dixon, D.W. Graham, and J.J. Mahoney, Correlated geophysical, geochemical and volcanological manifestations of plume-ridge interaction along the Galápagos Spreading Center, *Geochem., Geophys., Geosys.*, 3 (10), 8501, doi:10.1029/2002GC000350, 2002.
14. **Canales, J.P.,** G. Ito, R.S. Detrick, and J. Sinton, Crustal thickness along the western Galápagos Spreading Center and the compensation of the Galápagos hotspot swell, *Earth Planet. Sci. Lett., 203 (1)*, 311-327, 2002.

2000

13. J.J. Dañobeitia, and **J.P. Canales**, Magmatic underplating in the Canary Archipelago, *J. Vocanol. Geotherm. Res., 103* (1-4), 27-41, 2000.
12. **Canales, J.P.**, J.J. Dañobeitia, and A.B. Watts, Wide-angle seismic constraints on the internal structure of Tenerife, Canary Islands, *J. Vocanol. Geotherm. Res., 103*, 65-81, 2000.
11. **Canales, J.P**., J.A. Collins, J. Escartín, and R.S. Detrick, Seismic structure across the rift valley of the Mid-Atlantic Ridge at 23°20'N (MARK area): Implications for crustal accretion processes at slow spreading ridges, *J. Geophys. Res., 105*, 28,411-28,425, 2000.
10. **Canales, J.P.**, R.S. Detrick, J. Lin, J.A. Collins, and D.R. Toomey, Crustal and upper mantle seismic structure beneath the rift mountains and across a non-transform offset at the Mid-Atlantic Ridge (35°N), *J. Geophys. Res., 105*, 2699-2719, 2000.

1999

9. Ye, S., **J.P. Canales**, R. Rihm, J.J. Dañobeitia, and J. Gallart, A crustal transect through the northern and northeastern part of the volcanic edifice of Gran Canaria, Canary Islands, *J. Geodynamics, 28*(1), 3-26, 1999.

1998

8. Bazin, S., H. van Avendonk, A.J. Harding, J.A. Orcutt, **J.P. Canales**, and R.S. Detrick, Crustal structure of the flanks of the East Pacific Rise: Implications for overlapping spreading centers, *Geophys. Res. Lett., 25*, 2213-2216, 1998.
7. **Canales, J.P.**, R.S. Detrick, S. Bazin, A.J. Harding, and J.A. Orcutt, Off-axis crustal thickness across and along the East Pacific Rise within the MELT area, *Science, 280*, 1218-1221, 1998.
6. Forsyth, D.W., D.S. Scheirer, S.C. Webb, L.M. Dorman, J.A. Orcutt, A.J. Harding, D.K. Blackman, J. Phipps Morgan, R.S. Detrick, Y. Shen, C.J. Wolfe, **J.P. Canales**, D.R. Toomey, A.F. Sheehan, S.C. Solomon, and W.S.D. Wilcock, Imaging the deep structure beneath a mid-ocean ridge: The MELT experiment, *Science, 280*, 1215-1218, 1998.
5. **Canales, J.P.** and J.J. Dañobeitia, The Canary Islands swell: a coherence analysis of bathymetry and gravity, *Geophys. J. Int., 132*, 479-488, 1998.

1997

4. **Canales, J.P.**, J.J. Dañobeitia, R.S. Detrick, E.E.E. Hooft, R. Bartolomé, and D.F. Naar, Variations in axial morphology along the Galápagos spreading center and the influence of the Galápagos hotspot, *J. Geophys. Res., 102*, 27,341-27,354, 1997.
3. Collier, J.S., J.J. Dañobeitia, **J.P. Canales**, R. Dalwood, S. Gadd, N. Hayward, T. Henstock, S. Krastel, C. Pierce, and A.B. Watts, Evidence for asymmetric accretion and low angle, planar faults in slow-spreading oceanic crust, *Geology, 25*, 1075-1078, 1997.
2. Watts, A.B., C. Pierce, J. Collier, R. Dalwood, **J.P. Canales**, and T.J. Henstock, A seismic study in Tenerife, Canary Islands: implications for volcano growth, lithospheric flexure and magmatic underplating, *Earth and Planet. Sci. Lett., 146,* 431-447, 1997.

1994

1. Dañobeitia, J.J., **J.P. Canales**, and G.A. Dehghani, An estimation of the elastic thickness of the lithosphere in the Canary Archipelago using admittance function, *Geophys. Res. Lett., 21,* 2649-2652, 1994.

Sea experience:

17. 2013, *R/V Marcus Langseth,* Chief Scientist, MARINER: Seismic Investigation of the Rainbow Hydrothermal Field and its Tectono/Magmatic Setting, Mid-Atlantic Ridge 36°14'N.

16. 2012, *R/V Oceanus,* Chief Scientist, Evolution and Hydration of the Juan de Fuca Crust and Uppermost Mantle: A Plate-Scale Seismic Investigation from Ridge to Trench.

15. 2008, *R/V Marcus Langseth,* Shipboard Scientist, 3D Multichannel Seismic Imaging of the EPR, 9°50'N area.

14. 2005, *N/O L'Atalante,* Shipboard Scientist, SISMOMAR: Seismic structure of the Slow-Spreading Lucky Strike Segment: Plumbing System of a Hydrothermal System and Temporal and Spatial Evolution of Magmatic Accretion.

13. 2004, *R/V Knorr,* Chief Scientist, Seismicity and Fluid Flow of the TAG Hydrothermal Mound – Leg III.

12. 2003, *R/V Maurice Ewing,* Chief Scientist, Seismicity and Fluid Flow of the TAG Hydrothermal Mound – Leg II.

11. 2003, *R/V Atlantis,* Co-chief Scientist, Seismicity and Fluid Flow of the TAG Hydrothermal Mound – Leg I.

10. 2002, *R/V Maurice Ewing*, Shipboard Scientist, A Multichannel Seismic Investigation to Study Axial Crustal Structure and Alteration of the Upper Crust at the Juan de Fuca Ridge.

9. 2001, *R/V Maurice Ewing*, Shipboard Scientist, Multichannel seismic reflection study of megamullions on the Mid-Atlantic Ridge.

8. 2000, *R/V Maurice Ewing,* Shipboard Scientist, An integrated seismic and petrologic investigation of the effects of plume-ridge interaction: The Galapagos spreading center, 91°W to 98°W.

7. 1997, *R/V Maurice Ewing*, Shipboard Scientist, Shallow crustal structure at a slow spreading ridge.

6. 1996, *B.O. Hespérides*, Graduate Research Assistant, Tectonic evolution of the western continental margin of Mexico: Middle-American trench and Gulf of California.

5. 1994, *B.O. Hespérides,* Graduate Research Assistant, Geophysical study in the South Pacific: Easter volcanic chain and Society Islands.

4. 1993, *R.R.S. Charles Darwin*, Graduate Research Assistant, A Multichannel seismic study of lithospheric flexure in the vicinity of the Canary Islands.

3. 1993, *M.V. Meteor,* Graduate Research Assistant, Volcanic Islands Clastic Apron Project (Gran Canaria).

2. 1993, *M.V. Seisquest*, Graduate Research Assistant, ESCI Cantábrica.

1. 1992, *B.O. Hespérides,* Graduate Research Assistant, Crustal differenciation in the western Betic Range-Alborán Basin: structural images from dense seismic profiling.

Research Grants

Collaborative Research: Seismic Investigation of the Rainbow Hydrothermal Field and its Tectono/Magmatic Setting
Funding: NSF Grant OCE-0961680 ($715,330). *Duration:* 2013-2016
Principal Investigators: **J.P. Canales**, R.A. Sohn.

Collaborative Research: Evolution and Hydration of the Juan de Fuca Crust and Uppermost Mantle: A Plate-Scale Seismic Investigation from Ridge to Trench
Funding: NSF Grant OCE-1029305 ($372,675). *Duration:* 2012-2015
Principal Investigators: **J.P. Canales**.

Collaborative research: Integrated studies of early stages of continental extension: From incipient (Okavango) to young (Malawi) rifts
Funding: NSF Grant EAR-1010432 ($2,355,342). *Duration:* 2011-2015
Principal Investigators: **J.P. Canales**, R. Evans, D. Lizarralde, A. Shaw, M. Behn.

Modeling the Seismic Reflection Response of the TAG Detachment Fault: A Pilot Study in Preparation for a 3D MCS Proposal to Image Hydrothermal Fluid Flow Along an Active Oceanic Detachment Fauls
Funding: WHOI Independent Study Award ($49,259). *Duration:* 2010-2012
Principal Investigators: **J.P. Canales**.

Support of an AGU Chapman Conference: Detachments in Oceanic Lithosphere: Deformation, Magmatism, Fluid Flow and Ecosystems
Funding: WHOI Deep Ocean Exploration Institute ($15,000). *Duration:* 2010
Principal Investigators: **J.P. Canales**.

Collaborative Research: Advanced MCS processing of the SISMOMAR 3D data volume: Exploring linkages within the magmatically driven hydrothermal system of the Lucky Strike Volcano (MAR, 37°N)
Funding: NSF Grant OCE-0825018 ($110,261). *Duration:* 2008-2010
Principal Investigators: **J.P. Canales**.

Collaborative Research: Seismic Structure and Evolution of Oceanic Crust Along the Juan de Fuca Ridge and its Flanks
Funding: NSF Grant OCE-0648923 ($181,234). *Duration:* 2007-2009
Principal Investigators: **J.P. Canales**.

Investigating the Nature of the Seismic Layer 2A/2B Boundary at Mid-Ocean Ridges
Funding: WHOI Deep Ocean Exploration Institute ($49,764). *Duration:* 2007
Principal Investigators: **J.P. Canales**.

At the Forefront of Controlled-Source Marine Seismology: High-Resolution Seismic Waveform Tomography Using Wide-Aperture Hydrophone Streamer Data
Funding: WHOI Independent Study Award ($43,595). *Duration:* 2007
Principal Investigators: **J.P. Canales**.

Shallow Seismic Structure of the Ocean Crust and its Correlation with Seafloor Lithologies on the Kane Megamullion, Mid-Atlantic Ridge 23°20'-23°40'N.
Funding: NSF Grant OCE-0621660 ($280,135). *Duration:* 2006-2008
Principal Investigators: **J.P. Canales** and B. Tucholke.

Collaborative Research: 3D/4D Seismic Reflection Imaging of the Internal Structure of the Magmatic-Hydrothermal System at the East Pacific Rise RIDGE 2000 Integrated Study Site.
Funding: NSF Grant OCE-0327885 ($317,228). *Duration:* 2006-2008
Principal Investigators: **J.P. Canales** and R. Detrick.

Collaborative Research: Integrated Petrological, Geophysical and Numerical Modeling Constraints on Crustal and Mantle Processes Along the Galápagos Spreading Center.
Funding: NSF Grant OCE-0327289 ($181,234). *Duration:* 2004-2005
Principal Investigators: **J.P. Canales** and R.S. Detrick.

Seismicity, Structure, and Fluid Flow of the TAG Hydrothermal System.
Funding: NSF Grant OCE-0137329 ($480,806). *Duration:* 2002-2005
Principal Investigators: **J.P. Canales,** S. Humphris, and R. Sohn.

A Multichannel Seismic Investigation to Study Axial Crustal Structure and Alteration of the Upper Crust at the Juan De Fuca Ridge.
Funding: NSF Grant OCE-0002551 ($373,872). *Duration:* 2002-2005
Principal Investigators: **J.P. Canales** and R.S. Detrick.

Constraining Mantle Flow, Melt Supply, and Lower Crustal Structure Between the Clipperton and Siqueiros Fracture Zones From a Seismic Undershoot Experiment.
Funding: NSF Grant OCE-0118383 ($85,201). *Duration:* 2002-2003
Principal Investigators: **J.P. Canales** and R.S. Detrick.

Participation in Other Research Programs

Multichannel Seismic Investigation of Velocity Structure of Megamullions on the Mid-Atlantic Ridge.
Year: 2001-2003 Principal Investigators: B. Tucholke and J. Collins.
Research: Multichannel seismic data acquisition, processing and imaging of the internal structure of three Atlantic megamullions to understand the formation of oceanic core complexes.

A Seismic Investigation of the Effects of Plume-Ridge Interaction: The Galapagos Spreading Center, 91°W to 98°W.
Principal Investigators: R.S. Detrick, J. Sinton.
Year: 2000-2002 Research: Modeling of crustal structure and mantle melting along the Galapagos Spreading Center to understand the compensation mechanism of oceanic swells, and to investigate the role of magma supply as a variable in crustal accretion processes.

Mapping Melt and Matrix Flow in the Uppermost Mantle: Undershooting the East Pacific Rise Between the Siqueiros and Clipperton.
Year: 1998-2000 Principal Investigators: D.R. Toomey, R.S. Detrick, W. Wilcock.
Research: Modeling of wide-angle seismic data to investigate segment-scale crustal structure variations along the East Pacific Rise (9°N).

Mid-Atlantic Ridge Bullseye Seismic Refraction and Multichannel Reflection Experiment.
Year: 1998-1999 Principal Investigators: R.S. Detrick
Research: Modeling of wide-angle seismic data to investigate segment-scale crustal structure variations along the Mid-Atlantic Ridge (35°N).

Shallow Crustal Structure at a Slow Spreading Ridge.
Year: 1998-1999 Principal Investigators: J.A. Collins
Research: Modeling of wide-angle seismic data to investigate the emplacement of mantle rocks on the seafloor along the Mid-Atlantic Ridge (MARK area).

Mantle Electromagnetics and Tomography (MELT) Experiment.
Year: 1997 Principal Investigators: D.W. Forsyth, R.S. Detrick.
Research: Modeling of wide-angle seismic data to constrain the crustal structure in the MELT area (Southern East Pacific Rise).

Tectonic Evolution of the Western Continental Margin of Mexico: Middle-American Trench and Gulf of California (Cortes-P-96).
Year: 1996 Principal Investigators: J.J. Dañobeitia.
Research: Acquisition of wide-angle and multichannel seismic data in the Gulf of California.

Plume-Ridge Interaction: Galapagos Spreading Center.
Year: 1996-1997 Principal Investigators: J.J. Dañobeitia.
Research: Analysis of ridge-plume interaction along the Galapagos Spreading Center from multibeam barthymetry.

Geophysical Study in the Southern Pacific: Easter Island and Society Islands (Paso'94).
Year: 1994-1996 Principal Investigators: J.J. Dañobeitia.
Principal Investigators: J.J. Dañobeitia.

Research: Modeling of crustal and upper mantle structure beneath the Society Islands (French Polynesia) from wide-angle seismic data.

A Multichannel Seismic Study of Lithospheric Flexure in the Vicinity of the Canary Islands.
Year: 1993-1996 Principal Investigators: A.B. Watts.
Research: Modeling of crustal and upper mantle structure beneath Tenerife (Canary Islands) from wide-angle seismic data.

Geophysical Study of Intraplate Volcanism (Canary and Society Islands)
Year: 1993-1994 Principal Investigators: J.J. Dañobeitia.
Research: Thermal and mechanial properties of the lithosphere beneath the Canary Islands from spectral analysis of bathymetry and gravity data.

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