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Education

- 2016 University of Arizona | Ph.D. in Geosciences
Thesis: Crustal and Upper Mantle Structure of the Anatolian Plate: Imaging the effects of subduction termination and continental collision with seismic techniques
- 2012 Arizona State University | B.S. Earth and Space Exploration – Geosciences

Professional/Research Experience

- 2020-Present Assistant Professor | Purdue University
- 2019-2020 Post-doctoral Researcher | University of Oregon
- 2016-2019 Wiess Departmental Postdoctoral Research Fellow | Rice University
- 2015 Deep Water Exploration and Production Intern | Chevron
- 2012-2016 Graduate Teaching and Research Assistant | University of Arizona
- 2012 WestCarb Carbon Sequestration Project Intern | Arizona Geological Survey
- 2011 IRIS Undergraduate Summer Intern | Virginia Tech
- 2010-2012 NASA SpaceGrant Undergraduate Intern | Arizona State University

Research Interests

- Improving imaging techniques and seismic models of the lithosphere and upper mantle
- Combining seismic and geochemical characteristics to understand the structure of arcs
- Understanding the magmatic and tectonic evolution of Cordilleran systems
- Investigating the relationships of fluids with the seismic characteristics in subduction zones (tremor, seismic structure, earthquake behavior)
- Linking the stress-state (tectonic regime) of the continental lithosphere with seismic characteristics

Peer Reviewed Publications

19. **Delph JR**, Shimizu K, & Ratschbacher B (2021) “The architecture of the southern Puna magmatic system: integrating seismic and petrologic observations with geochemical modeling” *J. Geophys. Res.*, 126, e2020JB021550, doi:10.1029/2020JB021550
18. Koch CD, **Delph JR**, Beck SL, Lynner C, Ruiz M, Hernandez S, Samaneigo P, Meltzer A, Mothes P, Hidalgo S (2021) “Crustal thickness and Magma Storage Beneath the Ecuadorian Arc” *J. S. Am. Earth Sci.*, 110, 103331, doi:10.1016/j.jsames.2021.103331
17. **Delph JR**, Thomas AM, & Levander A (2021) “Subcretionary tectonics: Linking variability in the expression of subduction along the Cascadia forearc” *Earth Planet. Sci. Lett.*, 556, 116724, doi:10.1016/j.epsl.2020.116724
16. Cosca MA, Reid MR, **Delph JR**, Whitney DL, Teyssier C, Kuşcu G, Blichert-Toft J, & Rojay B (2021) “Temporal and geochemical evolution of Quaternary magmatism associated with the Anatolia-Arabia-Africa triple junction” *Geosphere*, 17, doi:10.1130/GES02266.1
15. Condit CB, Guevara VE, **Delph JR**, & French ME (2020) “Punctuated slab dehydration at depths of episodic tremor and slip in warm subduction zones” *Earth Planet. Sci. Lett.*, 552, 116601, doi:10.1016/j.epsl.2020.116601

14. Koch C, Lynner C, **Delph JR**, Beck SL, Meltzer A, Soto-Cordero L, Hoskins M, Stachnik J, Ruiz M, Alvarado A, Font Y, Agurto-Detzel H, Charvis P, Regnier M, & Rietbrock A (2020) “Structure of the Ecuadorian Forearc from the Joint Inversion of Receiver Functions and Ambient Noise Surface Waves” *Geophys. J. Int.*, doi:10.1093/gji/ggaa237
13. **Delph JR**, Levander A, & Niu F (2019) “Constraining crustal properties using receiver functions and the autocorrelation of earthquake-generated body waves”, *Journal of Geophysical Research*, doi:10.1029/2019JB017929
12. Reid MR, **Delph JR**, Cosca MA, Schlieffarth WK, & Kuscu, GG (2019) “Melt equilibration depths as sensors of lithospheric thickness during Eurasia-Arabia collision and the uplift of the Anatolian Plateau”, *Geology*, doi:10.1130/G46420.1
11. **Delph JR**, Levander A, & Niu F (2018) “Fluid controls on the heterogeneous seismic characteristics of the Cascadia margin”, *Geophysical Research Letters*, 45, 11021-11029, doi:10.1029/2018GL079518
10. Portner DE, **Delph JR**, Biryol CB, Beck SL, Zandt G, Ozacar AA, Sandvol E, & Turkelli N (2018) “Subduction termination through progressive slab deformation across eastern Mediterranean subduction zones from updated P-wave tomography beneath Anatolia”, *Geosphere*, 14, 907-925, doi:10.1130/GES01617.1
9. Abgarmi B, **Delph JR**, Ozacar AA, Beck SL, Zandt G, Sandvol E, Turkelli N, & Biryol CB (2017) “The nature of central Anatolian crust and uppermost mantle from teleseismic receiver functions; the role of slab dynamics on rapid uplift”, *Geosphere*, 13, doi:10.1130/GES01509.1
8. **Delph JR**, Abgarmi B, Ward KM, Beck SL, Ozacar AA, Zandt G, Sandvol E, Turkelli N, & Kalafat D (2017) “The effects of subduction termination on the continental lithosphere: Linking volcanism, deformation, surface uplift, and slab tearing in Central Anatolia”, *Geosphere*, 13, doi:10.1130/GES01478.1
7. Ward KM, **Delph JR**, Zandt G, Beck SL, & Ducea, MN (2017) “Magmatic evolution of a Cordilleran flare-up and its role in the creation of silicic crust”, *Scientific Reports*, doi:10.1038/SREP-17-12272-T
6. Reid MR, Schlieffarth WK, Cosca M, **Delph JR**, Blichert-Toft J, & Cooper KM (2017) “Shallow melting of MORB-like mantle under hot continental lithosphere, Central Anatolia”, *Geochem. Geophys. Geosyst.*, **18**, 1866-1888, doi:10.1002/2016GC006772
5. **Delph JR**, Ward KM, Zandt G, Ducea MN, & Beck SL (2017) “Imaging a magma plumbing system from MASH zone to magma reservoir”, *Earth planet. Sci. Lett.*, 457, 313-324, doi:10.1016/j.epsl.10.008
4. Han L, Hole JA, Stock JM, Fuis GS, Williams CF, **Delph JR**, Davenport KK, & Livers AJ (2016) “Seismic imaging of the metamorphism of young sediment into new crystalline crust in the actively rifting Imperial Valley, California”, *Geochem. Geophys. Geosyst.*, 17, 4566-4584, doi:10.1002/2016GC006610
3. **Delph JR**, Zandt G, & Beck SL (2015) “A new approach to obtaining a 3D shear wave velocity model of the crust and upper mantle: An application to eastern Turkey”, *Tectonophysics*, 665C, 92-100, doi:10.1016/j.tecto.2015.09.031
2. **Delph JR**, Biryol CB, Beck SL, Zandt G, & Ward KM (2015) “Shear wave velocity structure of the Anatolian Plate: anomalously slow crust in southwestern Turkey”, *Geophys. J. Int.*, 202, 261-276, doi:10.1093/gji/ggv141
1. **Delph JR** & Porter RC (2015) “Crustal Structure beneath Southern Africa: Insight into how Tectonic Events Affect the Mohorovicic Discontinuity”, *Geophys. J. Int.*, 200, 254-264, doi:10.1093/gji/ggu376

Manuscripts in preparation/submitted

1. Kaviani A, Sandvol E, Ku W, Beck SL, Turkelli N, Ozacar AA, & **Delph JR** “Sn attenuation tomography beneath the Anatolian-Iranian Plateau and Zagros Mountain Belt” *in revision at Geosphere*
2. Lynner C, **Delph JR**, Portner DE, Beck SL, Sandvol E, Ozacar, AA, Turkelli N “Slab induced mantle upwelling beneath the Anatolian Plateau” in review at *Geophys. Res. Lett.*
3. Schleiffarth WK, Umhoefer PJ, Cosca MA, Reid MR, **Delph JR**, Portner DE, & Beck SL “Evidence for a dynamic relationship between crustal deformation, mantle geodynamics, and Neogene-Quaternary volcanism in central Anatolia (Turkey) explained by flat-slab subduction and rollback” in prep
4. **Delph JR**, Thomas AM, Stanciu C, Aslam K, Chatterjee A, & Sassard V “JESTER: A high-density nodal array to study the structure and seismogenic behavior of the southern Cascadia forearc” in prep for *Bull. Seism. Soc. Am.*

Other Published Correspondences

2. **Delph JR**, Singer BS, & Dufek J (2018) “Geoscientists collaborate to understand silicic magma systems” *Eos*, 99, doi.org/10.1029/2018EO097577
1. Ward KM, **Delph JR**, & Beck SL, (2016) “Extending recent seismic imaging successes to South America” *Eos*, 97, doi:10.1029/2016EO051271

Invited Lectures

17. University of Texas Institute of Geophysics (UTIG) at UT-Austin “Linking heterogeneous expressions of subduction along the Cascadia margin” (Fall, 2022; Date TBD)
16. “The relationship and composition of low velocity zones in regions of non-volcanic tremor and episodic slow slip” at *Subduction interface properties and processes in the source region of deep slow slip and tremor* Workshop, Syros, Greece (April 15 - 22, 2022)
15. University of Missouri “Linking heterogeneous expressions of subduction along the Cascadia margin” (November 12, 2021)
14. GSA Annual Meeting “Linking Plate Interface Processes with the Surface Expression of Subduction” in *T4: Feedbacks between Upper-plate Deformation, Accretion and Alteration and Plate Boundary Processes in Subduction Systems* (Oct. 10, 2021)
13. Missouri S&T “Linking heterogeneous expressions of subduction along the Cascadia margin” (November 18, 2020)
12. GSA Annual Meeting “Relating seismic structure to seismogenic behavior in the Cascadia forearc” in *T10 Subduction Zone Slip Behavior: The Intersection of Deformation and Metamorphism* (Oct. 28, 2020)
11. Northern Arizona University “Controls on variations in the manifestation of subduction along the Cascadia margin” Flagstaff, AZ (March 11, 2020)
10. Oregon State University “Probing the Architecture of a Lithospheric-scale Magma Plumbing System: the Puna Plateau” Corvallis, OR (April 18, 2019)
9. Purdue University “Probing the Architecture of a Lithospheric-scale Magma Plumbing System: the Puna Plateau” West Lafayette, IN (March 21, 2019)
8. University of Oregon “Controlling mechanisms on lateral variations along the Cascadian margin” Eugene, OR (February 1, 2019)
7. University of Houston “Imaging the terminal stages of subduction: The neotectonic evolution of Anatolia” Houston, TX (November 16, 2018)
6. Goldschmidt Conference “A geochemical and seismic search for deep, active MASH zones” in *The Igneous Architecture of Arcs throughout the Crustal Column*, Boston, MA (August 2018)

5. AGU Chapman Conference “The Evolution and Seismic Expression of a Lithospheric-scale Magmatic System: The Puna Plateau” in *Merging Geophysical, Petrochronologic, and Modeling Perspectives of Large Silicic Magma Systems*, Quinamavida, Chile (January 8, 2018)
4. Lamont Doherty Earth Observatory “The Evolution and Seismic Expression of a Lithospheric-scale Magmatic System: The Puna Plateau” Palisades, NY (November 13, 2017)
3. The University of Utah “The inversion of multiple datasets: a necessity for constraining the velocity structure of the lithosphere” Salt Lake City, UT (November 14, 2016)
2. Rice University “Linking Seismic Characteristics to Tectonic Evolution: The Anatolian Plate” Houston, TX (February 11, 2016)
1. Kandilli Observatory and Earthquake Research Institute (KOERI), Bogazici University “Shear wave velocity structure of the Anatolian Plate: a view of past and present processes” Istanbul, Turkey (May 2015)

Conference Sessions Chaired

8. **Delph JR**, Janiszewski H, Bodmer M, Shamloo H “The Cascadia Margin: Linking Geophysical Characteristics With Subduction Zone Structure and Evolution” AGU 2021 Fall Meeting
7. Chen MN, Bigdoli T, **Delph JR** “Growth and Modification of the Continental Crust in Compressional and Extensional Regions” AGU 2021 Fall Meeting
6. **Delph JR**, Triantafyllou A, & Ratschbacher BC “The manifestation of subduction: geochemical, petrological, and geophysical constraints on lithospheric structure, composition, and evolution” AGU 2019 Fall Meeting
5. Chen MN, Ying Z, Songqiao SW, **Delph JR** “Seismic Imaging and Geodynamical Modeling of Lithosphere and Mantle” AGU 2019 Fall Meeting
4. Triantafyllou A, Ducea MN, Reagan M, & **Delph JR** “Subduction Zone Systems: Geochemical, Petrochronological, and Geophysical Constraints on Lithospheric Structure, Composition, and Geodynamics” GSA 2019 Annual Meeting
3. Condit CB, Dragovic B, **Delph JR**, & French ME “The Varied Roles of Aqueous Fluids Near the Subduction Interface” AGU 2018 Fall Meeting
2. Chen M & **Delph JR** “The Seismic Structure of Convergent Plate Margins”, Seismology of the Americas SSA-LACSC joint meeting
1. Gogus O, **Delph JR**, Govers RMA, & Reid MR “Alpine-Mediterranean Investigations: Geology, Geophysics, and Geochemistry”, AGU 2017 Fall Meeting

Conference Abstracts

2021

1. Bhattacharya R, **Delph JR**, Cole P (2021) “Constraining the Composition of Subcreted Material along the Cascadia Forearc using 3D Gravity Modeling” in *The Cascadia Margin: Linking Geophysical Characteristics With Subduction Zone Structure and Evolution*, 2021 AGU Fall Meeting
2. **Delph JR**, Thomas AM (2021) “The Structure of the Southern Cascadia Forearc from a Nodal Receiver Function Dataset” in *Subduction Top to Bottom: Focus on the Forearc*, 2021 AGU Fall Meeting
3. **Delph JR**, Thomas AM (2021) “Linking plate interface processes with the surface expression of subduction” in *T4. Feedbacks between Upper-Plate Deformation and Plate Boundary Processes in Subduction Systems*, 2021 GSA Annual Meeting (*Invited*)
4. **Delph JR**, Shimizu K, Ratschbacher B (2021) “Integrating seismic, geochemical, and petrologic observations to understand the trans-lithospheric structure of magmatic systems: the Southern Puna Plateau” in *T24. The Life and Times of Arc Volcanoes from Bottom to Top*, 2021 GSA Annual Meeting

5. Condit CB, Guevara VE, Holt AF, French M, **Delph JR** (2021) “Warm thermal structures in subduction zones lead to ample dehydration at the depths of deep slow slip and tremor and resultant transformations in viscous rheology” EGU Annual Meeting Abstract EGU21-13926
6. **Delph JR**, Thomas AM (2021) “JESTER: A nodal array to study the structure and seismogenic behavior of the southern Cascadia forearc” Northern California Earthquake Hazards Workshop (Feb 2 – 4, 2021)

2020

7. **Delph JR**, Thomas AM (2020) “A high-density nodal array to study the structure and seismogenic behavior of the southern Cascadia forearc” AGU Fall Meeting
8. Condit CB, Guevara VE, **Delph JR**, French ME, Holt A (2020) “Forearc dehydration in warm subduction zones provides ample fluids at the depths of episodic slip and tremor” AGU Fall Meeting
9. **Delph JR**, Thomas AM, Levander A (2020) “Relating seismic structure to seismogenic behavior in the Cascadia forearc” GSA Annual Meeting (*Invited*)
10. Condit CB, Guevara VE, **Delph JR**, & French ME (2020) “Metamorphic dehydration from oceanic crust provides fluid sources for deep slow slip and tremor in subduction zones” GSA Annual Meeting
11. Cosca MA, **Delph JR**, Reid MR, Whitney DL, Teyssier C, Kuşcu G, Blichert-Toft J, & Rojay B (2020) “Temporal and geochemical evolution of Quaternary magmatism associated with the Anatolia-Arabia-Africa triple junction” Goldschmidt Conference Abstract
12. Condit CB, Holt, AF, Guevara VE, **Delph JR**, & French ME (2020) “Thermal controls on oceanic lithosphere dehydration and fluid flux to the mantle during subduction” Goldschmidt Conference Abstract

2019

13. **Delph JR**, Thomas AM, & Levander A (2019) “The seismic expression of hydration in the crust and mantle of the Cascadia margin” AGU Fall Meeting
14. Xiong N, **Delph JR**, Niu F, & Levander A (2019) “Crustal Thickness Variation Beneath the United State Using Teleseismic Body Wave Autocorrelations and Receiver Functions” AGU Fall Meeting
15. **Delph JR**, Thomas AM, & Levander A (2019) “The seismic expression of hydration in the crust and mantle of the Cascadia margin” GSA Annual Meeting
16. Reid MR, **Delph JR**, Cosca MA, Scheiffarth WK, & Kuscu, GG (2019) “Evolution of lithospheric thickness during Eurasia-Arabia collision and uplift of the Anatolian Plateau” EGU General Assembly Conference Abstracts EGU2019-11846
17. **Delph JR**, Shimizu K, Ratschbacher BC, Rasmussen DJ, & Pu X (2019) “Insights into the architecture of active continental arcs from geochemical and seismic data” Geoprisms TEI Workshop

2018

18. **Delph JR**, Levander A, & Niu F (2018) “Constraining the crustal velocity structure of the conterminous United States using receiver functions and the autocorrelation of earthquake-generated body waves” AGU Fall Meeting, Washington DC
19. Levander A, Kiser E, Schmandt B, Hansen S, Ulberg CW, Creager K, **Delph JR**, Crosbie K, and Abers GA (2018) “3D Autocorrelation Reflectivity Imaging of the Magmatic Plumbing System of Mount St Helens” AGU Fall Meeting, Washington DC
20. Scheiffarth WK, Umhoefer PJ, Cosca M, Reid MR, **Delph JR**, Portner DE, Beck SL, Abgarmi B, Ozacar AA (2018) “Evidence for dynamic relationship between faulting and Neogene-Quaternary volcanism in post-collisional Central Anatolia (Turkey): Implications for shallow slab subduction and rollback” AGU Fall Meeting, Washington DC
21. Koch CD, Lynner C, **Delph JR**, Beck SL, Meltzer A, Hoskins M, Soto-Cordero L, Ruiz MC, Alvarado AP, Font Y, Regnier MM, Audin L, Charvis P, & Rietbrock A (2018) “Crustal Structure of the

Ecuadorian Forearc from the Joint Inversion of Receiver Functions and Ambient Noise Dispersion Data” AGU Fall Meeting, Washington DC

22. **Delph JR**, Shimizu K, Rasmussen DJ, Ratschbacher BC, & Pu X (2018) “A geochemical and seismic search for deep, active MASH zones” Goldschmidt Conference Abstract (*Invited*)
23. Reid MR, Schleiffarth WK, Cosca M, **Delph JR**, Kuscu G, & Blichert-Toft J (2018) “Melting under Central Anatolia” Goldschmidt Conference Abstract
24. **Delph JR**, Levander A, & Niu F (2018) “Constraining the crustal velocity structure of the conterminous United States using the autocorrelation of earthquake-generated body waves” 4D Workshop: Deep-time Data Driven Discovery and the Evolution of the Earth, Washington DC
25. **Delph JR**, Levander A, & Niu F (2018) “Evidence for slab permeability-controlled tremor along the Cascadia Margin” SSA-LACSC Meeting Abstract
26. Beck SL, Portner DE, Bishop BT, Koch CD, Rodriguez EE, Lynner C, Ryan JC, Ward KM, **Delph JR**, Wagner LS, Alvarado P, Porter RC, Scire A, & Linkimer L (2018) “Contributions of Modern Seismic Imaging to Understanding the Andean Convergent Margin” SSA-LACSC Meeting Abstract
27. **Delph JR** & Ward KM (2018) “The Evolution and Seismic Expression of a Lithospheric-scale Magmatic System: The Puna Plateau” in *Merging Geophysical, Petrochronologic, and Modeling Perspectives of Large Silicic Magma Systems*, AGU Chapman Conference Abstract 328312 (*Invited*)

2017

28. **Delph JR**, Levander A, & Niu F (2017) “Slab dehydration in Cascadia and its relationship to volcanism, seismicity, and non-volcanic tremor” Eos Trans AGU Fall Meeting Suppl Abstract T33F-02
29. Pu X, **Delph JR**, Shimizu K, Rasmussen DJ, Ratschbacher B (2017) “Where do arc magmas differentiate? A seismic and geochemical search for active, deep crustal MASH zones” Eos Trans AGU Fall Meeting Suppl Abstract T11C-0359
30. Whitney DL, Abgarmi B, Beck SL, Brocard GY, Cosca MA, Darin MH, **Delph JR**, Hui H, Kahraman M, Kaymakeci N, Kuscu G, Meijers MJM, Mulch A, Ozacar AA, Portner DE, Reid MR, Rey PF, Rojay B, Schlieffarth WK, Sandvol E, Schoenbohm LM, Tank B, Teoman U, Teyssier CP, Thomson SN, Turkelli N, Umhoefer PJ, Uslular G, Willenbring JK, and the CD-CAT team (2017) “Mantle to Surface Dynamics Across Subduction-Collision Transitions in Space and Time: Results from the CD-CAT Project in Anatolia” Eos Trans AGU Fall Meeting Suppl Abstract T52A-07 (*Invited*)
31. Koch C, Isaacs DR, **Delph JR**, & Beck SL (2017) “Variations in the Crust-Mantle Transition Beneath the Andean Cordillera and Implications for Orogenic Processes” Eos Trans AGU Fall Meeting Suppl Abstract T23D-0640
32. Beck SL, Zandt G, Wagner L, Ward KM, **Delph JR**, Lynner C, Portner D, Bishop B, Alvarado P, Porter R, Scire A, Antojevic SK, Linkimer L, & Koch C (2017) “Contributions of Modern Seismic Imaging to Understanding the Formation of the Andes” *George P Woollard Lecture*, GSA Annual Meeting
33. **Delph JR**, Levander A, & Niu F (2017) “The effects of subduction on the seismic structure of the crust and upper mantle in the Pacific Northwest” Earthscope National Meeting 7
34. **Delph JR**, Abgarmi B, Ward KM, Beck SL, Ozacar AA, Zandt G, Sandvol E, Turkelli N, & Kalafat D (2017) “The effects of subduction termination on the continental lithosphere: Linking volcanism, deformation, surface uplift, and slab tearing in Central Anatolia” EGU General Assembly Conference Abstracts EGU2017-1086
35. Reid MR, **Delph JR**, Schleiffarth WK, & Cosca M (2017) “Contrasting melt equilibrium conditions across Anatolia” EGU General Assembly Conference Abstracts EGU2017-17864
36. Darin MH, Brocard G, **Delph JR**, Meijers MJM, Schleiffarth WK, Lefebvre C, Portner DE, Abgarmi B, Tank SB, Türkelli N, Umhoefer PJ, Whitney DL, Teyssier C, Thomson SN, Reid MR, Beck SL, Sandvol E, Mulch A, Cosca MA, Rey PF, Özacar AA, Kuscu G (2017) “Geodynamic evolution of

subduction to collision to escape in Central Anatolia from surface to mantle – Results from the CD-CAT Project” EGU General Assembly Conference Abstracts EGU2017-6411

37. Tank SB, Özaydin S, Uslular G, **Delph JR**, Karas M, & Sandvol E (2017) “Preliminary Results of Three-Dimensional Magnetotelluric Imaging at the Vicinity of Nigde Massif” EGU General Assembly Conference Abstracts EGU2017-6411

2016

38. **Delph JR**, Ward KM, Zandt G, Ducea MN, & Beck SL (2016) “Seismic Imaging of a Magma Plumbing System from MASH Zone to Magma Reservoir” Eos Trans AGU Fall Meeting Suppl Abstract V44A-06
39. Ward KM, **Delph JR**, Zandt G, Beck SL, & Ducea MN (2016) “Quantifying the Plutonic to Volcanic Relationship Along the Puna Plateau: Implications for Cordilleran Plateau Evolution” Eos Trans AGU Fall Meeting Suppl Abstract V33E-3173
40. Abgarmi B, **Delph JR**, Ozacar AA, Beck SL, Zandt G, Sandvol EA, Turkelli N, & Biryol CB “The Nature of Central Anatolian Crust and Uppermost Mantle from Teleseismic Receiver Functions: The Role of Slab Dynamics on Rapid Uplift” Eos Trans AGU Fall Meeting Suppl Abstract T51A-2895
41. Portner DE, Biryol CB, **Delph JR**, Beck SL, Zandt G, Ozacar A, Sandvol EA, & Turkelli N (2016) “New Finite-Frequency Teleseismic P-wave Tomography of the Anatolian Sub-continent and the Fate of the Subducted Cyprean Slab” Eos Trans AGU Fall Meeting Suppl Abstract T54A-04
42. Reid MR, Schleiffarth WK, Cosca MA, **Delph JR**, Kuscu G, & Blichert-Toft J (2016) “Melting under Central Anatolia, Turkey: Hot, Young, Shallow” Eos Trans AGU Fall Meeting Suppl Abstract T53B-03
43. Lynner C, Beck SL, Zandt G, Ward KM, **Delph JR**, Porritt RW, Long MD, & Wagner LS (2016) “Radial anisotropy from ambient noise tomography in the Central Andes” Eos Trans AGU Fall Meeting Suppl Abstract S33F-08
44. Ward KM, Zandt G, Beck SL, **Delph JR** (2016) “Is Magmatic Addition a Significant Crustal Growth Mechanism in Cordilleran Systems?” GSA Annual Meeting
45. **Delph JR**, Ward KM, Zandt G, Ducea MN, & Beck SL (2016) “Imaging a magma plumbing system from MASH zone to magma reservoir” Incorporated Research Institutions for Seismology 2016 Workshop Science Highlight 0033
46. Lynner C, Beck SL, Zandt G, Ward KM, **Delph JR**, Long MD, Wagner LS (2016) “Rayleigh and Love wave ambient noise tomography of the Central Andes” Incorporated Research Institutions for Seismology 2016 Workshop Science Highlight 0027

2015

47. **Delph JR**, Zandt G, & Beck SL (2015) “Crustal and upper mantle structure of the Eastern Anatolian Plateau using a new approach to the joint inversion of surface waves and receiver functions” Eos Trans AGU Fall Meeting Suppl Abstract T22B-05
48. Teoman U, Polat G, Sandvol E, Turkelli N, Kahraman M, Özacar A, Beck SL, & **Delph JR** (2015) “Investigation of lithospheric deformation and mantle anisotropy beneath Central Anatolia from Shear Wave Splitting Analysis” Eos Trans AGU Fall Meeting Suppl Abstract T22B-04
49. Ozacar AA, Abgarmi B, **Delph JR**, Beck SL, Sandvol E, Turkelli N, Kalafat D, Kahraman M, & Teoman U (2015) “Central Anatolian Seismic Network: Initial Analysis of Seismicity and Earth Structure” EGU General Assembly Conference Abstracts 17 9024

2011-2014

50. **Delph JR**, Kahraman M, Zandt G, Beck SL, Ozacar AA, & Turkelli N (2014) “Crustal Structure of the Western Anatolian Extensional Province: Evidence for a ductile lower crust through the joint inversion of Receiver Functions and Dispersion Data” Eos Trans AGU Fall Meeting Suppl Abstract T13A-4627

51. Ozacar AA, Abgarmi B, **Delph JR**, Beck SL, Sandvol E, Turkelli N, Kalafat D, Kahraman M, Teoman U, & Polat G (2014) “CAT Seismic Network: Preliminary Results & Implication on Central Anatolian Tectonics” 8th International Symposium on Eastern Mediterranean Geology
52. Abgarmi B, Ozacar AA, **Delph JR**, Beck SL, Sandvol E, Turkelli N, Kalafat D, Kahraman M, Teoman U (2014) “Structure of the Crust beneath Central Anatolia: Preliminary Analysis of Teleseismic Receiver Functions” 8th International Symposium on Eastern Mediterranean Geology
53. **Delph JR**, Biryol CB, Beck SL Zandt G, & Ward KM (2014) “Shear-wave velocity structure of the Anatolian Plate: Implications for Pre-collisional Tectonics” University of Arizona Earthweek Annual Symposium
54. **Delph JR**, Beck SL, Zandt G, Biryol CB, & Ward KM (2013) “Shear wave velocity structure of the Anatolian Plate and surrounding regions using Ambient Noise Tomography” Eos Trans AGU Fall Meeting Suppl Abstract T31E-2561
55. **Delph JR**, Beck SL, Zandt G, & Biryol CB (2013) “Investigating the Tectonics of the Anatolian Plate using Ambient Noise Tomography” University of Arizona Earthweek Annual Symposium
56. **Delph JR** & Fouch MJ (2012) “New Seismic Images of Crustal Structure Beneath Southern Africa” Eos Trans AGU Fall Meeting Suppl Abstract T23C-2679
57. Livers AJ, Han L, **Delph JR**, White-Gaynor AL, Petit R, Hole JA, Stock JM, & Fuis GS (2012) “Structure of the active rift zone and margins of the northern Imperial Valley from Salton Seismic Imaging Project (SSIP) data” Eos Trans AGU Fall Meeting Suppl Abstract T51B-2577
58. Han L, Hole JA, **Delph JR**, Livers AJ, White-Gaynor AL, Stock JM, Fuis GS, Driscoll NW, Kell AM, Kent G (2012) “Crustal Structure during Active Continental Rifting in Central Salton Trough, California, constrained by the Salton Seismic Imaging Project (SSIP)” GSA Annual Meeting Paper No 121-4
59. **Delph JR**, Hole JA, Fuis GS, Stock JM, & Rymer MJ (2011) “The Salton Seismic Imaging Project: Seismic velocity structure of the Brawley Seismic Zone, Salton Buttes and Geothermal Field Salton Trough, California” Eos Trans AGU Fall Meeting Suppl Abstract T33G-2497
60. **Delph JR** & Fouch MJ (2011) “Crustal Structure Beneath Southern Africa” Arizona NASA/SpaceGrant Annual Symposium Abstract D27

Field Experience

- *JESTER: Jefferson Seismicity and Tectonics Array*
 - Deployed 60 short-period (5 Hz) three-component Fairfield Nodal seismometers in the northern California forearc to study microseismicity and non-volcanic tremor
- *Upper Geyser Basin Seismic Imaging Project*
 - Deployed ~500 short-period (5 Hz) three-component Fairfield Nodal seismometers around Old Faithful in Yellowstone National Park
- *Continental Dynamics-Central Anatolian Tectonics: surface to mantle dynamics during collision to escape* (NSF Award #1109336)
 - Deployed and serviced ~72 broadband three-component seismic instruments in central Turkey
- *Deformation and Magmatic Modification of a Steep Continental Margin, Western Idaho – eastern Oregon* (NSF Award #0844260)
 - Assisted in the deployment of broadband three-component seismic instruments

Supervisory Roles

- Rahul Bhattacharya (EAPS Ph.D. Student: project in progress)
 - “Constraining the Composition of Subcreted Material along the Cascadia Forearc using 3D Gravity Modeling”
- Brandon Herr (EAPS undergraduate student: project in progress)

- “Receiver function imaging of the lithospheric structure of the Hawaiian shield volcano using H-k and adaptive CCP stacking”
- Madigan Graber (EAPS undergraduate student: project complete)
“Imaging the crustal structure of Mt. St. Helens using P-wave coda”
- Dequan Hong (Rice University visiting student: project complete)
“Joint inversion of receiver functions and ambient noise data beneath the Qinling orogenic belt”
- Clinton Koch (UArizona PhD Student: graduated in 2021)
Koch CD, **Delph JR**, Beck SL, Lynner C, Ruiz M, Hernandez S, Samaneigo P, Meltzer A, Mothes P, Hidalgo S (2021) “Crustal thickness and Magma Storage Beneath the Ecuadorian Arc” *J. S. Am. Earth Sci.*, 110, 103331, doi.10.1016/j.jsames.2021.103331
Koch CD, Lynner C, **Delph JR**, Beck SL, Meltzer A, Hoskins M, Soto-Cordero L, Ruiz MC, Alvarado AP, Font Y, Regnier MM, Audin L, Charvis P, & Rietbrock A (2018) “Crustal Structure of the Ecuadorian Forearc from the Joint Inversion of Receiver Functions and Ambient Noise Dispersion Data” AGU Fall Meeting, Washington DC
- Daniel Portner (UArizona PhD Student: graduated in 2018)
Portner DE, **Delph JR**, Biryol CB, Beck SL, Zandt G, Ozacar AA, Sandvol E, & Turkelli N (2018) “Subduction termination through progressive slab deformation across eastern Mediterranean subduction zones from updated P-wave tomography beneath Anatolia”, *Geosphere*, 14, 907-925, doi:10.1130/GES01617.1
- Bijan Abgarmi (UArizona PhD Student: graduated in 2017)
Abgarmi B, **Delph JR**, Ozacar AA, Beck SL, Zandt G, Sandvol E, Turkelli N, & Biryol CB (2017) “The nature of central Anatolian crust and uppermost mantle from teleseismic receiver functions; the role of slab dynamics on rapid uplift”, *Geosphere*, 13, doi:10.1130/GES01509.1
- Dakota R Isaacs (UArizona Masters Student: graduated in 2016)
Isaacs DR, **Delph JR**, & Beck SL (2016) “Imaging the lithospheric-scale Structure of the Central Andes using P-S Receiver Functions, 16° - 25° S”, Master Thesis, University of Arizona

Teaching Experience

- **Purdue University**

EAPS 591: Global Tectonic Systems (Instructor: Fall 2020, 2021)

EAPS 591: Subduction Zone Inputs and Outputs (Instructor: Spring 2022)

EAPS 591: Applications of Gravity and Magnetic Data (Instructor: Spring 2022)

EAPS 354: Plate Tectonics (Instructor: Spring 2022)

- **Workshop Instructor**

MIMOSA Ambient Noise Tomography Workshop (January 17-23, 2016, Tucson, AZ, USA)

Co-taught a workshop aimed at teaching ambient noise tomography to faculty, graduate students, and network operators from South America as part of the NSF-funded Multi-scale Imaging of Modern Orogenic South America (MIMOSA)

- **Rice University**

ESCI 520: Geophysical Research Seminar (Co-Instructor: Spring 2017, 2018)

ESCI 519: Geophysical Research Seminar (Co-Instructor: Fall 2016, 2017, 2018)

- **University of Arizona**

GEOS 432/532: Introduction to Global Seismology (Teaching Assistant: Fall 2014)

GEOS 211: Oceanography (Teaching Assistant: Fall 2012, Spring 2013)

GEOS 432/532: Introduction to Global Seismology (Guest Lecturer: Fall 2014)

GEOS 419/519: Physics of the Earth (Guest Lecturer: Fall 2014)

- **Arizona State University**

GEO 103: Introduction to Geology (Laboratory Instructor, Fall 2011)

GEO 101: Introduction to Geology (Teaching Assistant, Spring 2012)

Honors, Scholarships, and Awards

- Earthscope Annual Meeting Early Career Travel Grant (\$720) 2017
- EGU 2017 Early Career Scientist's Travel Support (ECSTS; €455) 2017
- Wiess Post-doctoral Fellowship (\$60,000/yr + \$3,500 research allowance) 2016
- ChevronTexaco Geology Fellowship (\$900) 2016
- Graduate Professional Student Council Travel Grant (\$600) 2014
- Peter J. Coney Scholarship (\$1500) 2014
- Galileo Circle Scholarship (\$1000) 2014
- Graduate Professional Student Council Travel Grant (\$500) 2013
- ChevronTexaco Research Grant (\$1500) 2013
- ConocoPhillips Research Grant (2 semesters funding) 2012-2013
- GSA/ExxonMobil Bighorn Basin Field Award 2012
- Summa Cum Laude (Arizona State University) 2012
- Provost Scholarship (Arizona State University) 2008-2012

Outreach, Volunteering, and Other Activities

2018 Get Outside: Texas Parks and Wildlife (Houston, TX)

Educate urban youth in environmental responsibility and sustainability.

2015 The 43rd University of Arizona GeoDaze Annual Symposium Co-chair

Organize and run the Annual Student Symposium for the Dept. of Geosciences at the University of Arizona. The department head chooses graduate students for this position, which comes with a full semester of funding. This two-day symposium consisted of over 30 oral presentations and 50 poster presentations.

2014 Introduction to MATLAB short course

Created, organized and led a two-day MATLAB introductory short course for undergraduate and graduate students enrolled in *GEO419/519 - Physics of the Earth* at the University of Arizona.

2014 Geology Field Trip for Science Teachers (University of Arizona)

Assisted in leading a geology field trip for Arizona 5-12th grade science teachers to the Tucson Mountains. Teachers gained hands-on experience in geosciences to broaden their knowledge and complement Earth Science curricula in their classrooms.

2014 5th Annual Saturday Science Academy (University of Arizona)

Co-taught a lecture and hands-on activity teaching under-represented K-12 students from southern Arizona how to identify different soil textures and why they are important.

2014-2016 University of Arizona Geophysical Society (UAGS) President

The UAGS is affiliated with the Society of Exploration Geophysicists, founded by the University of Arizona students interested in a broad spectrum of popular geophysics.

2014-2015 Tucson Festival of Books (University of Arizona)

Geophysics education exhibit: Installed and operated a single-component geophone for K-8th grade children to create "Kid-quakes" and view their seismogram on a monitor.