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Research Interests

My research is focused on the use of seismograms to better image earth structure and earthquake ruptures. My specific interests include earthquake processes, evolution of the lithosphere, seismic wave propagation, and quantitative data modeling.

Employment History

2022 -	Associate Head for Undergraduate Programs, Geosciences, Penn State
2007 -	Professor of Geosciences, Penn State
2001 - 2006	Associate Professor of Geosciences, Penn State
1998 - 2001	Associate Professor of Geophysics, Saint Louis University
1994 - 1998	Assistant Professor of Geophysics, Saint Louis University
1991 - 1993	Postdoctoral Researcher, University of California, Santa Cruz

Education

Ph.D. in Geophysics, Department of Geosciences, Penn State, 1991

M.A. in Geology, Department of Geological Sciences, State University of New York, Binghamton, 1986

B.S. in Physics, Department of Physics, Penn State, 1983

Professional Societies and Memberships

American Geophysical Union

American Association for the Advancement of Science

Seismological Society of America

Academic Honors and Notable Professional Service

Member of the U.S. Air Force Seismic Review Panel, 2006 -

G. Montgomery and Marion Mitchell Award For Innovative Teaching, College of Earth and Mineral Sciences, Penn State - 2020

US Geological Survey NEHRP Proposal Review Panel, 2019

Member of Board of Directors, Incorporated Research Institutes for Seismology, 2006-2008; 2019-2021

Vice-Chair of IRIS Board of Directors, Incorporated Research Institutes for Seismology, 2021

Chair of the IRIS Presidential Search Committee, 2019-2020

Elected a Fellow of the American Geophysical Union - 2015

Wilson Award for Excellence in Research, College of Earth and Mineral Sciences, Penn State - 2009

Chair of the Incorporated-Research-Institutes-for-Seismology Global Seismic Network Standing Committee, 2011-2013

Member of Coordination Committee, Incorporated Research Institutes for Seismology, 2011-2013

Member of the Data Products Working Group, Incorporated Research Institutes for Seismology, 2013-

Member of the Incorporated-Research-Institutes-for-Seismology Planning Committee, 2010-2010

Vice Chair of the Board of Directors, Incorporated Research Institutes for Seismology, 2007-2008

Associate Editor, Bulletin of the Seismological Society of America 1993-1996

American Geophysical Union Program Committee Chair for Seismology (Fall & Spring Meetings), 1994-1996

Member of Board of Directors, Seismological Society of America, 1997-1999

Member of IRIS Global Seismic Network Standing Committee, 1999-2000, 2005

US Geological Survey National Earthquake Information Center Advisory Panel, 2002

US Geological Survey NEHRP Proposal Review Panel, 2004

Books Published

1. Ammon, C J, Velasco, A A, Lay, T, and Wallace, T C, *Foundations of Modern Global Seismology*, Academic Press (an Elsevier imprint), 2021, https://doi.org/10.1016/C2017-0-03756-4, ISBN: 978-0-12-815679-7.

Articles Published in Refereed Journals

1. Chai, C., Ammon, CJ, Maceira, M, & Herrmann, R (2022). Crust and upper mantle structure beneath the Eastern United States. Geochemistry, Geophysics, Geosystems, 23, e2021GC010233. https://doi.org/10.1029/2021GC010233

2. Ringler, AT, RE Anthony, RC Aster, CJ Ammon, S Arrowsmith, H Benz, C Ebeling, A Frassetto, WY Kim, Paula Koelemeijer, HCP Lau, V Leki, JP Montagner, PG Richards, DP Schaff, M Valle, W Yeck, Achievements and prospects of global broadband seismographic networks after 30 years of continuous geophysical observations, Reviews of Geophysics, 60, 1985.

3. Chai, C, J Kintner, K M Cleveland, J Luo, M Maceira, and C J Ammon, Automatic Waveform Quality Control for Surface Waves Using Machine Learning, *Seismological Research Letters, 93*, 112, 2022, https://doi: 10.1785/0220210302.

4. Herrmann, R B, Ammon, C J, Benz, H M, Aziz-Zanjani, A, and Boschelli, J. Short-Period Surface-Wave Tomography in the Continental United States - A Resource for Research, *Seismological Research Letters, 92*, 36423656, 2021.

5. Kintner, J A, Ammon, C J, Homman, K, and Nyblade, A, Precise relative magnitude and relative location estimates of low-yield industrial blasts in Pennsylvania, *Bulletin of the Seismological Society of America, 110*, 226240, 2020.

6. Kintner, J A, Michael Cleveland, K, Ammon, C J, and Nyblade, A, Testing a Local-Distance Rg/Sg Discriminant Using Observations from the Bighorn Region, Wyoming, *Bulletin of the Seismological Society of America, 110*, 727741, 2020.

7. Chai, C, Ammon, C J, and Cleveland, K M, Aftershocks of the 2012 Off-Coast of Sumatra Earthquake Sequence. *Tectonophysics, 763*, 6172, 2019.

8. Kintner, J A, C Wauthier, C J Ammon, InSAR and seismic analyses of the 2014-15 earthquake sequence near Bushkan, Iran: shallow faulting in the core of an anticline fold, *Geophys J Int, 217*, 1011-1023, https://doi.org/10.1093/gji/ggz065, 2019.

9. Chai, C, C J Ammon, and K M Cleveland, Aftershocks of the 2012 Off-Coast of Sumatra Earthquake Sequence, *Tectonophysics, 763*, 61-72, 2019.

10. Cleveland, K M, Ammon, C J, and Kintner, J, Relocation of Light and Moderate-Magnitude (M46) Seismicity Along the Central Mid-Atlantic. *Geochemistry, Geophysics, Geosystems, 19*, 28432856, 2018.

11. Chai, C, Ammon, C J, Maceira, M, and Herrmann, R B, Interactive visualization of complex seismic data and models using bokeh. *Seismological Research Letters, 89*, 668676, 2018.

12. Pourpoint, M, S Anandakrishnan, C J Ammon, and R B Alley, Lithospheric structure of Greenland from ambient noise and earthquake surface wave tomography, *J Geophys Res, 123*, 7850-7876, https://doi.org/10.1029/2018JB015490, 2018.

13. Kintner, J A, C J Ammon, K M Cleveland, M Herman, Rupture processes of the 2013-2014 Minab earthquake sequence, Iran, *Geophys J Int, 213*, 1898-1911, https://doi.org/10.1093/gji/ggy085, 2018.

14. Pourpoint, M, S Anandakrishnan, and C J Ammon, Highresolution Rayleigh wave group velocity variation beneath Greenland, *J Geophys Res, 123*, 1516-1539, https://doi.org/10.1002/2017JB015072, 2018.

15. Chai, C C J Ammon, S Anandakrishnan, C Ramirez, A Nyblade; Estimating subglacial structure using P-wave receiver functions, *Geophysical Journal International, 209, 1064-1079*, https://doi.org/10.1093/gji/ggx075, 2017.

16. Lay, T., L. Ye, C. J. Ammon, H. Kanamori, Intraslab rupture triggering megathrust rupture coseismically in the December 17, 2016 Solomon Islands Mw 7.9 earthquake, *Geophysical Research Letters 44.3, 1286-1292*, 2017.

17. Lay, T., L. Ye, C. J. Ammon, A. Dunham, and K. D. Koper (2016), The 2 March 2016 Wharton Basin Mw 7.8 earthquake: High stress drop north-south strike-slip rupture in the diffuse oceanic deformation zone between the Indian and Australian Plates, *Geophys. Res. Lett., 43, 7937-7945*, doi:10.1002/2016GL069931, 2016.

18. Syracuse, E. M., M. Maceira, G. A. Prieto, H. Zhang, and C. J. Ammon, Multiple plates subducting beneath Colombia, as illuminated by seismicity and velocity from the joint inversion of seismic and gravity data, *Earth and Planetary Science Letters, 444(C), 139-149*, doi:10.1016/j.epsl.2016.03.050, 2016.

19. Cleveland, K. M., T. F. VanDeMark, and C. J. Ammon, Precise Relative Locations for Earthquakes in the Northeast Pacific Region, *J. Geophys. Res.*, 120, doi:10.1002/2015JB012161, 2015.

20. Chai, Chengping, C. J. Ammon, M. Maceira, and R. B. Herrmann. Inverting interpolated receiver functions with surface wave dispersion and gravity: Application to the western U.S. and adjacent Canada and Mexico. *Geophys. Res. Letters*, doi:10.1002/2015GL063733, 2015.

21. Cleveland, K. M. and C.J. Ammon, Precise relative earthquake magnitudes from cross correlation, *Bull. Seism. Soc. Am., 105*, 1792-1796, doi:10.1785/0120140329, 2015.

22. Cleveland, K. M., C. J. Ammon, and T. Lay, Large earthquake processes in the northern Vanuatu subduction zone, *J. Geophys. Res. Solid Earth, 119*, doi:10.1002/2014JB011289, 2014.

23. Cleveland, K. M. and Ammon, C. J., Precise relative earthquake relocation using surface waves, *J. Geophys. Res., 18*, 1-12, doi:10.1002/jgrb.50146, 2013.

24. Lay, T., Kanamori, H., Ammon, C. J., Koper, K., Hutko, A., Ye, L., Yue, H., Rushing, T. M., Depth-varying rupture properties of subduction zone megathrust faults, *J. Geophys. Res. 117*, 2012, http://dx.doi.org/10.1029/2011JB009133.

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26. Ammon, C. J., T. Lay, H. Kanamori, and M. Cleveland, A rupture model of the 2011 off the Pacific coast of Tohoku Earthquake, *Earth Planets and Space, 63*, 693-696, 2011.

27. Koper, K. D., A. R. Hutko, T. Lay, C. J. Ammon, and H. Kanamori, Frequency-dependent rupture process of the 2011 M(w) 9.0 Tohoku Earthquake: Comparison of short-period P wave backprojection images and broadband seismic rupture models, *Earth Planets and Space, 63*, 599-602, 2011.

28. Lay, T., C. J. Ammon, H. Kanamori, M. J. Kim, and L. Xue, Outer trench-slope faulting and the 2011 M(w) 9.0 off the Pacific coast of Tohoku Earthquake, *Earth Planets and Space, 63*, 713-718, 2011.

29. Lay, T., C. J. Ammon, H. Kanamori, L. Xue, and M. J. Kim, Possible large near-trench slip during the 2011 M(w) 9.0 off the Pacific coast of Tohoku Earthquake, *Earth Planets and Space, 63*, 687-692, 2011.

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31. Lay, T., C. J. Ammon, H. Kanamori, Y. Yamazaki, K. F. Cheung, and A. R. Hutko, The 25 October 2010 Mentawai tsunami earthquake (M(w) 7.8) and the tsunami hazard presented by shallow megathrust ruptures, *Geophysical Research Letters, 38*, 2011.

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34. Lay, T., C. J. Ammon, H. Kanamori, K. D. Koper, O. Sufri, and A. R. Hutko, Teleseismic inversion for rupture process of the 27 February 2010 Chile (Mw 8.8) earthquake, *Geophys. Res. Lett., 37*, L13301, doi:10.1029/2010GL043379, 2010.

35. Miller, V., B. Voight, C. J. Ammon, E. Shalev, and G. Thompson, Seismic expression of magma-induced crustal strains and localized fluid pressures during initial eruptive stages, Soufriere Hills Volcano, Montserrat, *Geophys. Res. Lett., 37*, L00E21, doi:10.1029/2010GL043997, 2010.

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41. Furlong, K. P., T. Lay, and C.J. Ammon, A Great Earthquake Rupture Across a Rapidly Evolving Three-Plate Boundary, *Science, 324*, 226-229, doi:10.1126/science.1167476, 2009.

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43. Ammon, C. J., H. Kanamori, and T. Lay, A great earthquake doublet and seismic stress transfer cycle in the central Kuril islands, *Nature, 451*, 561-565, 2008.

44. Cho, K. H., R. B. Herrmann, C. J. Ammon, and K. Lee, Imaging the Upper Crust of the Korean Peninsula by Surface-Wave Tomography, *Bull. Seism. Soc. Am., 97*, 198-207, DOI: 10.1785/0120060096, 2007.

45. Ammon, C. J., H. Kanamori, T. Lay, and A. A. Velasco, The 17 July 2006 Java Tsunami Earthquake (Mw = 7.8), *Geophys. Res. Lett., 33*, L24308, doi:10.1029/2006GL028005, 2006.

46. Velasco, A. A., C. J. Ammon, and T. Lay, A search for seismic radiation from late slip for the December 26, 2004 Sumatra-Andaman (Mw = 9.15) earthquake, *Geophys. Res. Lett., 33*, L18305, doi:10.1029/ 2006GL027286, 2006.

47. Ketter, B. S., A. A. Velasco, C. J. Ammon, and G. E. Randall, Path-specific velocity structure of western China from surface-wave dispersion, *Pure and Appl. Geophys., 163*, 1235-1255, doi:10.1007/s00024-006-0071-9, 2006.

48. Ammon, C. J., A. A. Velasco, and T. Lay, Rapid estimation of first-order rupture characteristics for large earthquakes using surface waves: 2004 Sumatra-Andaman earthquake, *Geophys. Res. Lett., 33*, L14314, doi:10.1029/2006GL026303, 2006.

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57. Julià, J., C. J. Ammon, and R. B. Herrmann, Lithospheric Structure of the Arabian Shield from the Joint Inversion of Receiver Functions and Surface Wave Dispersion, *Tectonophysics, 371*, 1-21, 2003.

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Articles Published in Nonrefereed Journals

1. B. Voight, R. S. J. Sparks, E. Shalev, T. Minshull, M. Paulatto, C. Annen, C. Kenedi, J. Hammond, T. J. Henstock, L. Brown, E. Kiddle, P. Malin, G. Mattioli, C. Ammon, E. Arias-Dotson, A. Belousov, K. Byerly, L. Carothers, A. Clarke, S. Dean, L. Ellett, D. Elsworth, D. Hidayat, R. A. Herd, M. Johnson, A. Lee, V. Miller, B. Murphy, C. Peirce, G. Ryan, S. Saldana, C. Snelson, R. Stewart, R. Syers, J. Taron, J. Trofimovs, C. Widiwijayanti, S. R. Young, and W. Zamora, Chapter 15 of The SEA-CALIPSO volcano imaging experiment at Montserrat: plans, campaigns at sea and on land, scientific results, and lessons learned, Geological Society, London, Memoirs, 39:253-289, doi:10.1144/M39.15

2. Ammon, C. J., M. Maceira, M. Cleveland, 3d Modeling Of Iran And Surrounding Areas From Simultaneous Inversion Of Multiple Geophysical Datasets, NNSA/AFRL 2011 Monitoring Research Review, Tucson, AZ, September, 2011.

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Creative Works: Outreach-Related Software

1. *Epicentral* for the iPhone/iPodTouch, free application to display recent earthquake activity and event information. The total number of downloads from Apple's iTunes App Store as of 2009 was over 50,000. I stopped tracking the number.

2. *Epicentral+* for the iPad, an application to display recent earthquake activity and event information, real-time seismograms from the global seismic networks, and information on volcanic eruptions.