Masako Tominaga (she/her) ver. May 11 2025

Address	Clark South 172E, 266 Woods Hole Rd. Woods Hole, MA02543	**ORCID ID**	0000-0002-1169-4146
Work Phone	+1 508 289 2871	**Scopus Author ID**	14627779900
Email	mtominaga@whoi.edu		
Nationality	Japanese (US Permanent Resident)		

Research Interest

Conducting multiscale geophysics for subsurface/subseafloor characterization. Establishing interdisciplinary science programs internationally to decipher lithosphere formation and maturation with in situ CO2, H2, Fe, and S cycles, seabed hydrogeology, minerals, and habitability. Expanding geophysical sensors and autonomous seasurface and deep submergence vehicle capabilities. Deciphering the evolution of Earth's outercore and Wilson cycle using geo/paleo/rock-magnetism.

835 days at sea, 29 cruises, 11 Chf/CoChf, worked with 12 research vessels from 4 countries and worked with 1 human occupied and 9 unmanned underwater vehicles from 4 countries.

Education

2009 Ph.D., Geological Oceanography, Department of Oceanography, Texas AM University

2005 M.S., Geological Oceanography, Department of Oceanography, Texas AM University

2002 B.Eng., Petroleum Prod. Lab., Dept. Nat. Res. and Env. Eng., Waseda Univ., Tokyo, Japan

Appointments

2023—present Associate Scientist w/ tenure, Stommel Chair in Oceanography Dept. Geology and Geophysics, WHOI

2023—present co-Chief Scientist of UNOLS Multidisciplinary Instrumentation in Support of Oceanography Program (i.e. supporting chemical, physical, optical sensors on towing platform and coring systems)

2021—present PI and the Chief Scientist of UNOLS Potential Field Pool Equipment Program (i.e. supporting all the shipboard gravimeters and magnetometers on US Academic Research Fleet)

2021—2023 Assistant Scientist II, Dept. Geology and Geophysics, WHOI

2019.4—2021.10 Operations Manager, Ocean Bottom Seismic Instrument Center, WHOI

2019.9 – 2020.8 Adjunct Assist. Prof., Dept. Geology and Geophysics, Texas A&M University

2017.11- 2019.3 Field Ops. Coordinator, Science Services Manager, National Deep Submergence Facility, WHOI

2015.7-2019.8 Assistant Professor, Dept. Geology and Geophysics, Texas A&M University
Tenure package filed in 2018.4, leave of absence for 2018.8-2019.8

2012.12- 2017.11 Adjunct Scientist, Dept. Geology and Geophysics, WHOI

2012.8- 2015.6 Assistant Professor Dept. Geol. Sci., Michigan State University
Tenure-track with 3rd year mid-term reappointment granted

2011.3- 2012.7 Postdoctoral Investigator, Dept. of Geology and Geophysics, WHOI

2009.9-2011.2 Postdoctoral Scholar, Dept. of Geology and Geophysics, WHOI

2010.9-2010.12 Term-appointed Lecturer, Dept. of Earth and Env. Geosciences, Boston College

2009.4-2009.7 Postdoctoral Research Associate, Dept. of Oceanography, Texas A&M University

2003.1-2009.2 Graduate Research Assistant, Dept. of Oceanography, Texas A&M University

2004-2005 Adjunct Trainee for IODP Exps. 305 & 309, JAMSTEC*

*JAMSTEC = Japan Agency for Marine-Earth Science and Technology

Publications (* graduate, ** undergraduate students supervised, and *** project role)

54-58 are **in prep.** to be submitted in 3-6 months.

58. *Wu, J.-N.,* ***Tominaga, M.****, et al., The new life-cycle of shipboard marine gravimeters on University National Oceanographic Laboratory Systems Academic Research Fleet, to be submitted to G3 Data,* ***in prep.*** **** Program lead PI*

57. ***Tominaga, M.****, M. Cannat, S. Mahato, and M. Maia, High resolution near-bottom magnetic characterization of ultramafic seafloor at ultra-slow spreading 64.5 E, Southwest Indian Ridge, to be submitted to JGR,* ***in prep.*** **** Project collaborator, WHOI IRD*

56. ***Tominaga, M.****, M. A. Tivey, D. Carress, J. Pudeman, C. Galley, S. Walker, D. Butterfield, M. Anderson, and J. Beason, High resolution seafloor magnetometry imaging the nature of hydrothermalism within the volcanic mound, Puy de Folles, 21°N at Mid Atlantic Ridge, to be submitted to G3,* ***in prep.*** **** Project collaborator, WHOI IRD*

55. ***Tominaga, M.****, M. A. Tivey, H. Mark, W. W. Sager, and J. Preine, What really is the Jurassic Quiet Zone?, to be submitted to GRL,* ***in prep.*** **** Project lead PI*

54. *Chen, J.,* ***Tominaga, M.****, and J. Escartin, New faults on slow-spreading ridges record links between modes of magma supply and dike-related deformation, to be submitted to GRL,* ***in prep.*** **** Project lead PI*

53. **Tominaga, M.**, K. Panter, C. berthod, M. A. Tivey, J.-N. Wu, J. Preine, M. Cannat, F. Neumann, K. Shanks, J. Kalemba, E. Hayden, M. Small, D. Wildrick, and NBP25-01 shpboard science support staff, Where ice meets magma: subglacial explosive volcanism in the Ross Sea, Nature, *submitted. ***lead PI of the project, Chief Scientist of the NBP2501 Expedition.*

52. Manga, M., **M. Tominaga**...et al., Low heat flow in the Anhydros Basin, Aegean Sea, recorded by deep subsurface temperatures, GRL, *submitted. ***Full proposal IODP-932 proponent, Shipboard physical properties/logging science lead.*

51. Manga, M., ..., **M. Tominaga**...et al., Contrasting seismic velocity and compaction of marine1 oozes and volcaniclastic deposits, Geochem. Geophys. Geosys, *submitted. ***Full proposal IODP-932 proponent, Shipboard physical properties/logging science lead.*

50. **FUTURE 2024 PIs team** et al. ....,**M. Tominaga**,The FUTURE of the US marine seafloor and subseafloor sampling capabilities, ..., AGU Advances, 2024AV001357, *accepted. ***Lead project PI and lead workshop organizer for the FUTURE 2024 workshop and outcome paper(this effort).*

49. Metcalfe, A., ... **M. Tominaga**..et al., Far-travelled ash megaturbideite fed by shoreline-crossing pyroclastic currents from a large explosive volcanic eruption, Science Advances, ads9642, *submitted. ***Full proposal IODP-932 proponent, Shipboard physical properties/logging science lead.*

48. Preine, J., ... **M. Tominaga**..et al., 2024 , Hazardous explosive eruptions of a recharging multi-cyclic island arc caldera. Nature Geosi., 17, 323-331. doi.org/10.1038/s41561-024-01392-7****Full proposal IODP-932 proponent, Shipboard physical properties/logging science lead.*

47. Druitt, T., ... **M. Tominaga**..et al. 2024, Giant offshore pumice deposit records a shallow submarine explosive eruption of ancestral Santorini. Nature Commun Earth Environ 5, 24. doi.10.1038/s43247-023-01171-z. ****Full proposal IODP-932 proponent, Shipboard physical properties/logging science lead.*

46. Choi, E., and **M. Tominaga**, 2023, A thin elastic plate model for thermally contracting young oceanic lithosphere: Insights from comparison with modern seafloor observations, GRL, *h*ttps://doi.org/10.1029/2023GL103511. ****Project co-I with Dr. Choi, equal weight collaboration.*

45. Chen, Jie, T. Zhang, **M. Tominaga**, J. Escartin, and R. Kang, 2023, Mapping with the Spilhaus Projection: A refreshing perspective on the unbroken world ocean, Sci Data 10, 410 . https://doi.org/10.1038/s41597-023-02309-6**** Project collaborator*

44. **Tominaga, M.**, A. Beinlich, A. E. Lima, P. Pruett**, N. Vento**, and B. Weiss, 2023, High-resolution magnetic-geochemical mapping of the serpentinized and carbonated Atlin ophiolite, British Columbia: toward establishing magnetometry as a monitoring tool for in situ mineral carbonation, G-cubed, *doi.org/10.1029/2022GC010730. ***Project lead PI*

43. Philip, B. T., E.A .Solomon, D. S. Kelley, T. L. Whorley, E. Roland, A. M. Tréhu, **M. Tominaga**, and R. W. Collier, 2023,Fluid sousrces and overpressures within the central Cascadia Subduction Zone revealed by a warm, high-flux seafloor seep, Science Adv., DOI: 10.1126/sciadv.add6688. ****Project PI/Chief scientist of the RR1718 cruise that collected both water column and seismic data that are central to this study. Lead author was an undergraduate participant from UW to the cruise.*

42. Tréhu, A. M., **M. Tominaga**, M. Lyle, K. K. Davenport, B. J. Phrampus, J. E. Favorito, E. Zhang, B. L. Lenz, S. Shreedharan, and S. Yelisetti, 2022, The hidden history of the south-central Cascadia subduction zone recorded on the Juan de Fuca plate offshore southwest Oregon, G3, doi.org/10.1029/2021GC010318. ****Project PI of NSF-OCE-EAGER funded high-res MCS and underway geophysics training cruise to broaden next-gen sea-going geophysicists/Chief-scientist of RR1718 cruise.*

41. **Tominaga, M.**, M. A. Tivey, and W. W. Sager, 2021, A new Middle to Late Jurassic Geomagnetic Polarity Time Scale (GPTS) from a multiscale marine magnetic anomaly survey of the Pacific Jurassic Quiet Zone, Journ. Geophys. Res., https://doi.org/10.1029/2020JB021136. ****Project PI of NSF-OCE-ISP funded high-res MCS and underway geophysics training cruise to broaden next-gen sea-going geophysicists.*

40. **Tominaga, M.**, E. Ortiz, J. Einsel, N. Vento, M. Schrenk, I. Buisman, I. Ezad, and D. Cardace, 2021, Tracking subsurface active weathering processes in serpentinite, Geophys. Res. Lett., https://doi.org/10.1029/2020GL088472. **** The lead project PI of the NSF EAR funded/co-I of NASA-Inst. Astrobiology funded program*

39. Huang, Y., W. W. Sager, J. Zhang, **M. Tominaga**, J. Greene*, and M. Nakanishi, 2020, Magnetic anomaly map of Shatsky Rise and its implications for oceanic plateau formation, Journ. Geophys. Res., https://doi.org/10.1029/2019JB019116. ****Provided analytical advice, home-brew software, and magnetic expertise to two PhD students (Huang and Zhang) and my PhD advisor/collaborator*

38. Greene*, J., **M. Tominaga**, and N. G. Miller, Along-margin variations in breakup volcanism at the eastern North American Margin, Journ. Geophys. Res., https://doi.org/10.1029/2020JB020040. ****Project lead-PI, PhD Advisor (Greene)*

37. Greene*, J. A., D. Lizarralde, **M. Tominaga**, and M. A. Tivey, 2020,Ongoing silica diagenesis in the northwestern Pacific identified by high-resolution seismic images, Marine Geology, https://doi.org/10.1016/j.margeo.2020.106330. ****Project lead-PI, Chief scientist, PhD Advisor (Greene)*

36. Beinlich, A., T. John, H. Vrijmoed, **M. Tominaga**, T. Magna, Y. Padladchikov, 2020, Near- instantaneous physicochemical rock equilibration during regional scale deformation and reactive fluid flow, Nature Geosci., 10.1038/s41561-020-0554-9. ****Project lead-PI/co-I, Field expedition leader*

35. Sager, W. W., T. Huang, **M. Tominaga**, J. Greene*, M. Nakanishi, and J. Zhang, 2019, Oceanic plateau formation by seafloor spreading implied by Tamu Massif magnetic anomalies, Nature Geosci., doi:10.1038/s41561-019-0390-y. ****Provided analytical advice, home-brew software, and magnetic expertise to two PhD students (Huang and Greene) and my PhD advisor/collaborator*

34. Huang, Y., W. W. Sager, **M. Tominaga**, J. A. Greene*, J. Zhang, M. Nakanishi, 2018, Magnetic anomaly map of Ori Massif and its implications for oceanic plateau formation, Earth Planet. Sci. Lett., 501, 46-55. ****Provided analytical advice, home-brew software, and magnetic expertise to two PhD students (Huang and Greene) and my PhD advisor/collaborator*

33. **Tominaga, M.**, A. Beinlich, E. A. Lima, B. Hampton, M. A. Tivey, B. Weiss, and Y. Harigane, 2017, Multi-scale magnetic mapping of serpentinite carbonation, Nature Comm., doi:10.1038/s41467-017-01610-4.

32. Ortiz, E.*, **M. Tominaga**, D. Cardace, M. O. Schrenk, T. M. Hoehler, M. D. Kubo, and D. F. Rucker, 2017, Geophysical Characterization of Serpentinite Hosted Hydrogeology at the McLaughlin Natural Reserve, Coast Range Ophiolite, Geochem. Geophys. Geosys., doi:2017GC007001. ****Project co-I, MS Advisor (Ortiz)*

31. Greene*, J. A., **M. Tominaga**, N. G. Miller, D. R. Hutchinson, and M. R. Karl*, 2017, Refining the Formation and Early Evolution of the Eastern North American margin (ENAM): New Insights from Multiscale Magnetic Anomaly Analyses, Journ. Geophys. Res., doi/10.1002/2017JB014308. ****Project lead-PI, PhD Advisor (Greene)*

30. Escartin, J., C. Mével, S. Petersen, D. Bonnemains, M. Cannat, M. Andreani, N. Augustin, A. Bezo, V. Chavagnac, Y. Choi, M. Godard, K. Haaga, C. Hamelin, B. Ildefonse, J. Jamieson, B. John, T. Leleu, C. J. MacLeod, M. Massot-Campos, P. Nomikou, J. A. Olive, M. Paquet, C. Rommevaux, M. Rothenbeck, A. Steinfuhrer, **M. Tominaga**, L. Triebe, R. Garcia, R. Campos, 2017, Tectonic structure, evolution, and the nature of oceanic core complexes and their detachment fault zones (13° 20'N and 13° 30'N, Mid Atlantic Ridge), Geochem. Geophys. Geosys., doi:10.1002/2016GC006775. ****Provided deep submergence magnetometer system, home-brew software, and participated in the cruise to lead ROV/AUV magnetometry*

29. Miller, H., J. M. Matter, P. Kelemen, E. T. Ellison, M. E. Conrad, N. Fierer, T. Ruchala**, **M. Tominaga**, and A. S. Templeton, 2016, Reply to Methane origin in the Samail ophiolite by Etiope 2016, Geochim. Cosmochim. Acta., doi:10.1016/j.gca.2016.11.011. ****Project co-I, MS Advisor (Ruchala)*

28. **Tominaga, M.**, M. A. Tivey, C. J. MacLeod, C. J. Lissenberg, A. Morris, D. J. Shillington, and V. Ferrini, 2016, Characterization of the in situ magnetic architecture of oceanic crust (Hess Deep) using near-source vector magnetic data, Jour. Geophys. Res., 121,doi:10.1002/2015JB012783.

27. Escartín, J., F. Leclerc, M. Catherine, C. Mathilde, S. Petersen, N. Augustin, N. Feuillet, D. Christine, A. Bezos, D. Bonnemains, V. Chavagnac, Y. Choi, M. Godard, K. A. Haaga, C. Hamelin, B. Ildefonse, T. Leleu, J. Jamieson, B. E. John, C. J. MacLeod, M. M. Campos, P. Noumikou;, J.-A. Olive, M. Paquet, C. Rommevaux-Jestin, M. Rothenbeck, A. Steinfürer, **M. Tominaga**, L. Triebe, R. Campos, N. Gracias, N. Gracias, R. Garcia, and M. Andreani, 2016, First direct observation of coseismic slip and seafloor rupture along a submarine normal fault and implications for fault slip history, Earth Planet Sci. Lett., 450, 96-107. ****Provided deep submergence magnetometer system, home-brew software, and participated in the cruise to lead ROV/AUV magnetometry*

26. Miller, H., J. M. Matter, P. Kelemen, E.T. Ellison, M.E. Conrad, N.Fierer, T. Ruchala*, **M. Tominaga**, and A. Templeton, 2016, Modern water/rock reactions in Oman hyperalkaline peridotite aquifers and implications for microbial habitability, Geochim. Cosmochim. Acta, 179, 217-241. ****Project co-I, MS Advisor (Ruchala)*

25. **Tominaga, M.**, M. A. Tivey, and W. W. Sager, 2015, Revealing globally coherent magnetic reversals in the Jurassic Quiet Zone, Geophys. Res. Lett., doi:10.1002/2015GL065394.

24. Stadler*, T. A., and **M. Tominaga**, 2015, Intraplate volcanism of the Western Pacific: Insights from Geological and Geophysical Observations in the Pigafetta Basin, Geochem. Geophys. Geosyst., doi:10.1002/2015GC005873.

23. Sager, W. W., M. Pueringer, M. Ooga, B. Housen, C. Carvallo, and **M. Tominaga**, 2015, Paleomagnetism of igneous rocks from Shatsky Rise and implications for Oceanic Plateau Volcanism, in Neal, C. R., Sager, W., Sano, T., and Erba, E., eds., The Origin, Evolution, and Environmental Impact of Oceanic Large Igneous Provinces: Geol. Soc. Amer. Spec. Paper 511, doi: 10.1130/2015.2511(08). ****Project co-PI, Sailed as paleomagnetist (IODP Exp. 324), instructed MS student (Ooga)*

22. Greene**, J. A., **M. Tominaga**, and D. K. Blackman, 2015, Subsurface implications of spatially variable seafloor character on the Atlantis Massif, Deep Sea Research II, 246-255. ****Project lead-PI, Undergraduate thesis advisor (Greene)*

21. **Tominaga, M.**, G. Itturino, and H. Evans, 2015, The uppermost crustal formation history of Shatsky Rise, a large igneous province in the northwestern Pacific, Geophys. Res. Lett. doi: 10.1002/2014GL061630. ****Project lead-PI*

20. Augustin, N., C. W. Devey, F. M. van der Zwan, P. Feldens, **M. Tominaga**, R. A. Bantan, and T. Kwasnitschka, 2014, The rifting to spreading transition in the Red Sea, Earth Planet. Sci. Lett., 395, 217-230.

19. Veloso, E., R. Anma, N. Hayman, **M. Tominaga**, N. Astudillo, Karuya, R. González, T, Yamazaki, and C. Arriagada, 2014, Construction Methanism of Sheeted Dike Complex at Superfast-Spreading oceanic ridges, insights from IODP Hole 1256D (Eastern Pacific), Geochem. Geophys. Geosys., doi: 10.1002/2013GC004957.

18. **Tominaga, M.**, 2013, "Imaging" the cross section of oceanic crust: the development and future of scientific ocean basement electrical resistivity logging, Tectonophysics, doi:10.106/j.tecto.2013.06.018.

17. Ferrini, V. L., D. J. Shillington, K. Gillis, D. A. H. Teagle, C. J. MacLeod, A. Morris, P. W. Cazenave, S. Hurst, **M. Tominaga**, and JC21 Scientific Party, 2013, Evidence of mass failure in the Hess Deep Rift from multi-resolutional bathymetry data, Marine Geology, 339, 13-21.

16. **Tominaga, M.**, H. Evans and G. Itturino, 2012, "Equator-Crossing" of Shatsky Rise? The tectonic motion captured in GPIT data at the drilled basement of a large igneous province, Geophys. Res. Lett., doi:10.1029/2012GL052967.

15. Malinverno, A., J. C. Hildebrandt, **M. Tominaga**, J. Channel, 2012, M-sequence geomagnetic polarity time scale (MHTC12) that steadies global spreading rates and incorporates astrochronology constraints, Journ. Geophys. Res., doi.10.1029/2012JB009260.

14. Blackman, D. K., B. Ildefonse, B. E. John, Y. Ohara, D. J. Miller, N. Abe, A. Abratis, E. S. Andal, M. Andreani, S. Awaji, J. S. Beard, D. Brunelli, A. B. Charney, D. M. Christie, J. Collins, A. G. Delacour, H. Delius, M. Drouin, F. Einaudi, J. Escartin, B. R. Frost, G. Früh-Green, P. B. Fryer, J S. Gee, M. Godard, C. B. Grimes, A. Halfpenny, H.-E. Hansen,

A. C. Harris, A. Tamura, N. W. Hayman, E. Hellebrand, T. Hirose, J. G. Hirth, S. Ishimaru, K. T. M. Johnson, G. D. Karner, M. Linek, C. J. MacLeod, J. Maeda, O. U. Mason, A. M. McCaig, K. Michibayashi, A. Morris, T. Nakagawa, T. Nozaka, M. Rosner, R. C. Searle, G. Suhr, **M. Tominaga**, A. von der Handt, T. Yamazaki, and X. Zhao, 2011, Drilling constraints on lithospheric accretion and evolution at Atlantis Massif, Mid-Atlantic Ridge 30ºN, Journ. Geophys. Res., doi:10.1029/20010JB007931.

13. **Tominaga, M.**, Lyle, M. C., and Mitchell, N., 2011, Seismic Interpretation of pelagic sedimentation regimes in the 18-53 Ma eastern equatorial Pacific: Basin-scale sedimentation and infilling of abyssal valleys, Geochem. Geophys. Geosys., doi:10.1029/2010GC003347.

12. **Tominaga, M.**, and W. W. Sager, 2010a, Revised Pacific M-anomaly Geomagnetic Polarity Time Scale, Geophys. Journ. Int., 182, 203-232.

11. **Tominaga, M.**, and W. W. Sager, 2010b, The Tectonic Origin of the Magnetic Smooth Zone in Early Cretaceous North Atlantic, Geophys. Res. Lett., 37, doi:10.1029/2009GL040984.

10. **Tominaga, M.**, and S. Umino, 2010, East Pacific Rise Lava Deposition History: the First Cross Section View of the Superfast Spreading Upper Oceanic Crust, Geochem. Geophys. Geosys., Q05003, doi:10.1029/2009GC002933.

9. Zhao, X., and **M. Tominaga**, 2009, Paleomagnetic and rock magnetic results from lower crustal rocks of IODP Site U1309: implication for thermal and accretion history of the Atlantic Massif, Tectonophysics, doi:10.1016/j.tecto.2009.04.017.

8. **Tominaga, M.**, D. A. H. Teagle, J. C. Alt, and S. Umino, 2009, Determination of the Volcanostratigraphy of Oceanic Crust Formed at Superfast Spreading Ridge: Electrofacies Analyses of ODP/IODP Hole 1256D, Geochem. Geophys. Geosys., 10, Q01003, doi:10.1029/2008GC002143.

7. Iwashita, D., N. Morita, and **M. Tominaga**, 2008, Shear-type Borehole Wall Shifts Induced during Lost Circulations, Soc. Petrol. Eng. Dril. Compl., 23, 301-313.

6. Swift, S, M. Raichow, A. Tikku, **M. Tominaga**, and L. Gilbert, 2008, Vertical velocity structure of upper ocean crust at ODP Hole 1256D, Geochem. Geophys. Geosys.,Q10O13, doi:10.1029/2008GC002188.

5. **Tominaga, M.**, W. W. Sager, M. A. Tivey, and S. M. Lee, 2008, Deep-tow Profile Study of the Pacific Jurassic Quiet Zone and Inferences for the Geomagnetic Polarity Reversal Timescale and Jurassic Geomagnetic Field Behavior, Journ. Geophys. Res, 113, doi:10.1029/2007JB005527.

4. Ildefonse, B., D. K. Blackman, B. E. John, Y. Ohara, D. J. Miller, C. J. MacLeod, and **Integrated Ocean Drilling Program Expeditions 304/305 Science Party**, 2007, Oceanic core complexes and crustal accretion at slow-spreading ridges, Geology, 35, 623-626.

3. Tivey, M. A., W. W. Sager, S. Lee, and **M. Tominaga**, 2006, Rapid magnetic field reversal and low amplitude as a cause of the Pacific Jurassic Quiet Zone, Geology, 34, 9, 789-792, doi:10.1130/G22849.

2. Wilson, D. S., D. A.H. Teagle, J. C. Alt, N. R. Banerjee, S. Umino, S. Miyashita, G. D. Acton, R. Anma, S. R. Barr, A. Belghoul, J. Carlut, D. M. Christie, R. M. Coggon, K. M. Cooper, C. Cordier, L. Grispini, S. R. Durand, F. Einaudi, L. Galli, Y. Gao, J. Geldmacher, L. A. Gilbert, N. W. Hayman, E. Herrero-Bervera, N. Hirano, S. Holter, S. Ingle, S. Jiang, U. Kalberkamp, M. Kerneklian, J. Koepke, C. Laverne, H. L. Lledo Vasquez, J. Maclennan, S. Morgan, N. Neo, H. J. Nichols, S. Park, M. K. Reichow, T. Sakuyama, T. Sano, R. Sandwell, B. Scheibner, C. E. Smith-Duque, S. A. Swift, P. Tartarotti, A. A. Tikku, **M. Tominaga**, E. A. Veloso, Toru Yamazaki, S. Yamazaki, and C. Ziegler, 2006, Drilling to Gabbro in Intact Ocean Crust, Science, 312, 1016-1020.

1. **Tominaga, M.**, W. W. Sager, and J. E. T. Channel, 2005, Paleomagnetism of the Basaltic Section, Site1213, Shatsky Rise, In Bralower, t. J., Premoli Silva, I., and Malone, M. J., (Eds.), Proc. ODP, Sci. Res., 198: College Station, TX (Ocean Drilling Program), 1-15.

Conferences

(*supervised graduate student, **supervised undergraduate student)

[Last 5 Years]

Tominaga, M... et al., 2023, Characterizing Mid-Atlantic Ridge subseafloor processes using high resolution AUV magnetometory , AGU Fall meeting 2023, OS13A-03.

...**Tominaga, M.**.. et al., 2023, ((many related to IODP Expedition 398)), EGU meeting 2024, EGU24-6392(Yoshimoto et al.), EGU24-11729(Preine et al.)

Caress, D. W., ...**Tominaga, M.**.. et al., 2023, One-meter-scale mapping of a developing Oceanic Core Complex and off-axis hydrothermal venting in the EMARK area, the eastern inside corner high south of the Kane Fracture Zone, Mid-Atlantic Ridge , AGU Fall meeting 2023, OS13A-01.

Butterfield, D. A., ...**Tominaga, M.**.. et al., 2023, Discovery of Three Hydrothermal Vent Fields on the Mid-Atlantic Ridge with Falkor (too) , AGU Fall meeting 2023, OS11B-1281.

Beeson, J. W., ...**Tominaga, M.**.. et al., 2023, One-meter-scale mapping of a hydrothermally active, non-transform offset, at the Mid-Atlantic Ridge 24.9°N , AGU Fall meeting 2023, OS11B-1283.

...**Tominaga, M.**.. et al., 2023, ((many related to IODP Expedition 398)), AGU Fall meeting 2023, V13B-0116 (Druitt et al.), V41E-0149A, (Kletetschka et al.,), V41E-0150 (Beethe et al.), V41E-0153 (Manga et al.), V41E-0156 (Morris et al.), V43A-08 (KLutterolf et al.), V44B-02 (Druitt et al.), V44B-03(Preine et al.), V44B-06(Ronge et al.),

Kletetschka, G., ...**Tominaga, M.**.. et al., 2023, A sequence of volcanic events from sediment cores IODP398, U1589, near Santorini , AGU Fall meeting 2023, V14E-0149A.

Beethe, S., ...**Tominaga, M.**.. et al., 2023, After the Minoan: New Radiocarbon Ages of Recently Uncovered Eruptions in the Santorini Caldera , AGU Fall meeting 2023, V14E-0150.

Manga, M., ...**Tominaga, M.**.. et al., 2023, Physical properties of submarine volcaniclastic deposits in the central Hellenic volcanic arc , AGU Fall meeting 2023, V14E-0153.

Panter, K. S., **Tominaga, M.**, 2022, A synthesis: heat sources and flux distributions in the western ROss Sea seafloor, Antarctica - links between rifting, volcanism, and ie sheets, AGU Fall meeting 2022, C45D-1112.

Tominaga, M., D. J. Fornari, J. Zhu, M. Tivey, D. S. Scheirer, R. Harr, N. Brady. D. Aliod, and PFPE Technical Team WHOI-SSSG, 2021, A new generation shipboard marine gravimeter by dynamic gravity systems for the UNOLS Academic Research Fleet, AGU Fall meeting 2021, G35B-0290.

Brady, N., D. Aliod, D. J. Fornari, **M.Tominaga**, M. A. Tivey, and J. Zhu, 2021, A comparison between a BGM-3 and a new AT1M marine gravity meter during a survey in the North Atlantic in Deceember 2020, AGU Fall meeting 2021, G33A-04.

Beinlich, A., John, T., Vrijmoed, J. C., **Tominaga, M.**, Magna, T., and Podladchikov, Y. Y., 2020, Instantaneous rock transformations in the deep crust driven by reactive fluid flow, EGU General Assembly 2020, Online, 4–8 May 2020, EGU2020-1266.

Tominaga,M., M. A. Tivey, and W. W. Sager, 2019, A New Geomagnetic Polarity Time Scale Model for Middle Jurassic to Early Cretaceous, AGU Fall 2019 Meeting GP44A-08.

Pruett**, N. P., **M. Tominaga**, A. Beinlich, J.A. Greene, E.A. Lima, B. P. Weiss, N. F. R. Vento**, E. Ortiz*, and P. N. Fulton, 2019, Global applicability of ultramafic serpentinization and carbonation magnetic mapping, AGU Fall 2019 Meeting T51F-0347.

Greene*,J. A., **M. Tominaga**, and N. C. Miller, 2019, Multi-scale along-margin varications in breakup volcanism at the Eastern North American Margin identified by magnetic anomaly modeling, AGU Fall 2019 Meeting T33G-0434.

Tivey, M. A., J*. A. Greene, **M. Tominaga**, H. J. Dick, G. Alodia, and M. J. Cheadle, 2019, Geophysical Investigation of the Marine Rise, Southwest Indian Ridge from the Discovery to Indomed Fracture Zones reveals vast exposures of mantle at the sea floor, AGU Fall 2019 Meeting T21D-0365.

» 65 abstracts for 2002-2018 period (list available upon request).

Research Cruises and Field Works (835 days at sea, 29 cruises, 11 Chs/CoChs)

SVC= Science Verification Cruise of the UNOLS vessels

2025 RVIB Nathaniel B. Palmer 25-01 expedition, Ross Sea, Antarctica	Chief Scientist/lead PI
2024 R/V Sikuliaq SKQ202418S JQZ$_{Phoenixseismiccruise}$	co-Chief Scientist/lead PI
2024 R/V Kaimei KM24-08 BMS seabed drill shake down	Scientist/lead PI on FUTURE Workshop
2024 R/V Sikliaq SKQ2406T DGS gravimeter verification	Chief Scientist for PFPE gravimeter program
2023 R/V Sally Ride SR2312 Shipboard Heat Flow Probe science verification	Scientist/funded user
2023 R/V Falkor (too) Fkt230303 Mid Atlantic Ridge Hydrothermal vents (telepresence)	Magnetist
2022 R/V JOIDES Resolution - IODP Exp.398	Logging Scientist/Physical Properties
2021 R/V Oceanus - Cascadia Ocean Bottom Seismograph Leg 2	Interim co-Chief Scientist
2019 R/V Atlantis - HOV Alvin Eng.cruise (Alvin Acoustic Image Transmission)	Project Lead
2019 R/V JOIDES Resolution - IODP Exp. 385T	re:APL-769 lead PI, Chief Scientist
2018 R/V Atlantis - HOV Alvin/AUV Sentry Engineering Cruise	AUV Sentry/NDSF personnel
2017 R/V Revelle - Early Career Scientist Seismic Chief Scientist Training Cruise	PI, Chief Scientist
2016 R/V Armstrong SVC Leg4 (AUV mode of Nereid-Under Ice eval.)	co-Chief Scientist
2016 R/V Armstrong SVC Leg2 (Underway geophysics, EM122/710&EK80 trial)	invited geophysicist
2016 Geomagnetic field expedition, Atlin Ophiolite, BC	Expedition leader, project PI
2015/2016 Electrical Resistivity Tomography, Coast Range Ophiolite, CA	Expedition leader, project PI
2014 R/V Sikuliaq AUV Sentry Pacific Jurassic Quiet Zone	Chief Scientist, project PI
2014 R/V Sikuliaq SVC Leg7 (AUV Sentry trial)	invited Chief Scientist
2014 E/V Nautilus ROV Hercules Kick'em Jenny Volcano mapping (telepresence)	invited project PI
2014 R/V Sikuliaq SVC Leg5 (shipboard system/sonar trial, NSF inspection)	Chief Scientist
2014 Liguria Ophiolite geophysical survey, Genova, Italy	Expedition leader
2013 N/O Pourquois Pas? ROV Victor/AUV Abbyss MAR cruise	invited ROV/AUV lead geophysicist
2012 R/V Langseth ROV Jason JdF Middle Valley/Autonomous Magnetic Drifter	project co-I
2011 R/V Thompson AUV Sentry Pacific Jurassic Quiet Zone	PI, Chief Scientist
2011/2013 Geophysical Mapping of Linnajavri Ophiolie, Arctic Norway	project PI,Expedition leader
2008 RRS James Cook ROV Isis Hess Deep Near-Bottom Survey	Invited Geomagnetist
2007 R/V Revelle 90E Ridge Multichannel Seismics survey	co-chief scientist
2005-2011 IODP Exp. 305, 309, 312, 324, and 335 on JOIDES Resolution	Phys.Properties, project co-I
2004 R/V Gyre Deeptow Subbottom/sidescan sonar survey, Sigsbee Basin	Watchstander
2003 (unnamed boat) Houston ship channel Side Scan sonar mapping	Field assistant
2002 R/V Thompson DSL-120 Jurassic seafloor magnetics and acoustic mapping	Watchstander
2000 JAPEX/Canada Oil Sands Co.Ltd. Internship, Fort McMurray, Canada	Student intern

---

Leadership in the Field/Services

2024-present Rolling Deck to Repository (R2R) Advisory panel chair

R2R: UNOLS Shipboard underway data repository system

2023-present UNOLS MISO(Multidisciplinary Instr. in Support of Oceanography) incoming Chief Scientist

2020-present UNOLS PFPE (Potential Field Pool Equipment) Chief Scientist

2019-present UNOLS FIC (Fleet Implementation Committee)

2024-2025 NSF AC-GE Subcommittee for Drilling Vessel

2024 PI/Workshop convener, The Future of US Marine Seafloor and Subseafloor Sampling Capabilities Workshop

2020-2023 Rolling Deck to Repository (R2R) Advisory panel

R2R: UNOLS Shipboard underway data repository system

2017 IEDA* Science Community Advisory Panel

IEDA Interdisciplinary Earth Data Alliance, NSF/Columbia University

2016 NSF-OCE Facility R2R Advisory Committee

2015-2017 UNOLS* Council member

2014 Co-convener "Marine magnetics, plate kinematics and the oceanic crust' (GP22A/23A), AGU fall meeting

2012 NSF-OCE-MGG R2R Advisory Committee

2012 English-Japanese Interpreter "Frontiers in Ocean and Earth Science (by W. Munk)", Univ. Tokyo.

2010-2013 Science Technology Panel (Phys. Prop., Geophysics), Integrated Ocean Drilling Program

2010 Report writing committee: IODP Mohole Workshop, Kanazawa, Japan

2009 Steering committee: Ocean Leadership-IODP "IODP Primer: An Introduction to Ocean Drilling Programs"

2009 Co-convener for Geomagnetism and Paleomagnetism general session (GP01), AGU fall meeting

Panel services:NSF Committee of Visitors (OCE-ISP), OCE-MGG, EAR-Geophys, MRI&FI (multiple review cycles), OCE-ISP

Reviewer: DoE ARPA-E programs, NSF (OCE/MGG,EAR/Geophysics,OCE-OTIC,MRI), JGR-Solid Earth, EPSL, G3, GRL, Appld. Geophys., Tectonophysics, Geology, Scientific Drilling, Nature Geosci.

Supervision and Mentoring

-During WHOI appointments

» Supervisor of:

2024-present Jonas Preine (Postdoc Scholar, Dept. G&G, WHOI))

2024-present Jyun-nai Wu (Postdoc Investigator, Dept. G&G, WHOI))

2024 Spring Semester Annette Limoges (APO Intern., Dept. Computer Sci., Univ. Mass Dartmouth))

2019-2021 Hannah Brewer (Eng. Assis. II, Dept. G&G, WHOI))

2019-2021 Timothy Kane (Senior Eng. Assis. II, Dept. G&G, WHOI))

2019-2021 Daniel Kot (Senior Eng. Assis. I, Dept. G&G, WHOI))

2019-2021 Walker Heard (Lab Assis. II, Dept. G&G, WHOI))

2019-2020 Tony Grueninger (Eng. Assis. II, Dept. G&G, WHOI))

2018 Sawyer Newman (Res.Assist.II, Dept. Appl. Phys.Ocean Eng., NDSF data, WHOI))

» Mentor of:

2023-present Renne Gruner-Mitchell (Eng.I, AOPE, WHOI))

2019-2023 Joe Garcia (Eng.II, AOPE, WHOI))

» Research program students
(+ chair, ++thesis graduate advisor, +++ graduate committee, *grad and **undergrad, *** WHOI Guest Student)

-During WHOI appointments

2019-2021 +++Collin Brandle (PhD. student, Univ. New Mexico)

2021 ***Bailey Fruegel (Undergrad. res. assistant, Northwestern Univ.)

2018-2019 ***Paiden Pruet (Undergrad. res. assistant, Dept. Geol. Geophys., Texas AM Univ., then MS student at School of Geology, Oklahoma State Univ.)

-During tenure-track appointments

2014-2020 +*John Greene (PhD student, Dept. Geol. Geophys., Texas AM Univ.)

2017 **Noah Vento (Undergrad. res. assistant, Dept. Geol. Geophys., Texas AM Univ.)

2015-2017 **Estefania Ortiz (MS student, Diversity Scholarship awardee, Undergrad. res. assistant, Dept. Geol. Geophys., Texas AM Univ.)

2015 **Max Chen (Undergrad. res. assistant, Dept. Geol. Geophys., Texas AM Univ.)

2014-2016 +*Matthew Karl (MS student, Dept. Geol. Sci., Michi. State Univ.)

2014-2016 +*Tylor Ruchala (MS student, Dept. Geol. Geophys., Texas AM Univ.) 2013-present ++*Helen Feng (Ph.D dissertation committee, MIT-WHOI Joint Program)

2013 +++Harrison Lisabeth (Ph.D, Dept. Geol. Geophys., Univ. Maryland)

2013-2015 +*Timothy Stadler (MS student, Dept. Geol. Sci., Michi. State Univ.)

2012-2015 **Laney Hart (Undergrad. res. assistant, Dept. Geol. Sci., Honors Coll.,Michi. State Univ.)

2014 **Cody Normington (TREET undergraduate participant, Dept. Phys, Michi. State Univ.)

2014 **Carly Scott (TREET undergraduate participant, Dept. Geol. Sci., Michi. State Univ.)

2013-2014 Michael Chandler (Postdoctral Research Associate, Dept. Geol. Sci., Michi. State Univ.)

2011-2013. +++Rachel Gipe (M.S thesis committee, Dept. of Earth Atm. Sci., Purdue Univ.)

2012 **Aiman Shahpurwala (Undergraduate res. assistant, Dept. Geol. Sci., Michigan State Univ.)

-During postdoc

2012 *Beatrice Parker (Geodynamics Seminar graduate student project supervisor, Deep Earth Exploration Institution, Woods Hole Oceanographic Institution)

2011 **Brendan Murphy (Summer Guest Student, Dept. Geology Geophysics, Boston College, Woods Hole Oceanographic Institution)

Courses Taught

[classroom size,# graduate courses] -During tenure-track appointment

2016 Texas A&M GEOG #645 Geochronology (co-teaching with Dr. Brent Miller) [12]

2016, 2017 Texas A&M GEOP #666-600 Principle of Geodynamics [5-7]

2015, 2016 Texas A&M GEOP431-500 Near Surface Geophysics [36]

2014 MSU GLG#892 Special Topic in Geophysics and Geodynamics (“Serpentinization”) [6]

2014 MSU GLG471 Applied Geophysics [32]

2013 MSU GLG481 Petrophysics

2013, 2014, 2015 MSU GLG301 Geology of the Great Lakes (“Geology of Continents and Oceans”) [80-92]

-During postdoc

2011 Calculus for Engineers and Earth Scientists, MIT-Woods Hole Joint Program [10]

2010 Marine Geology (GE#530) Fall 2010 – semester-contracted Lecturer [8]

Outreach

- During WHOI appointments

2024 Summer Student Fellows Seminar Series spin-off lunch seminar: "AUV Sentry"

2024 Summer Student Fellows Seminar Series "The Power of Scales:From Space to the Seafloor, what different technologies can tell us about Earth-Ocean processes"

2022, 2023, 2024 "Ask a Scientist" summer public QA at Water Street)

2018, 2019, 2023 Woods Hole Science Stroll (2018- R/V Atlantis tour guide and NDSF booth; 2019 -OBSIC seismometer demo: "StepQuake", attracted more than 300 general-public; 2023 "Seafloor Rock Samples")

2019 "Know Your Science" talk "Listening Closely to see into the Earth" at WHOI Discovery Center)

2022 GEOL 1040 Guest Lecture on "Seafloor Mapping", Bowling Green State University

2019 Wentworth Institute of Technology, Co-op Program "Career" presentation and students counseling

2019 IODP JOIDES Resolution Academy broadcast, blogpost, and undergraduate research mentor.

2018 R/V Atlantis/HOV Alvin/AUV Sentry San Diego open house (as an NDSF rep.)

- During tenure-track appointments

2017 The 3-days Informational Webinars for NSF-UNOLS Early Career Scientist Training in Seismic Data Acquisition and Processing (organizer in collaboration with UNOLS office)

2016 AGU blogpost "A tale of Atlin ophiolite" (http://blogs.agu.org/geospace/2016/09/02/tale-atlin-ophiolite/) in collaboration with Rebecca Fowler.

2015 Michigan Science Olympiad (Oceanography) organizer and examiner (in collaboration with Tim Stadler, M.S. candidate/supervisee)

2015 Global Awareness Festival: Focus on Pacific Rim –"The Ring of Fire", Muskegon Comm. College, Michigan.

2014 Educator/Early Career Scientist Participant (no cost), NSF-INSPIRE-Transforming Remotely- conducted Research through Ethnography, Education, and rapidly evolving Technologies (PIs: Chris German (WHOI); Katy Bell (Ocean Exploration Trust); Amy Pallant (Concord Consortium); Sheila Jasanoff (Harvard Univ.); Kanna Rajan (the Monterey Bay Aquarium Research Institute)).

2013 "Salt Water Encounters" Sharper Focus/Wider Lens lecture, Honors College, Michigan State University.

- During Postdoc

2012 Judge for Science Fair, Falmouth High School, Falmouth, MA.

2011 PI of Jurassic Quiet Zone cruise outreach science website with Kutztown Univ. undergraduates

2011 IODP Exp.335 outreach broadcast program (American International School, Shanhai, China)

2010 Judge for the best student paper award, Ocean Science (OS21C), AGU Fall 2010 Meeting

2010 Judge for Science Fair, Lawrence School, Falmouth, MA.

2009 IODP Exp.324 weekly broadcast program (National Museum of Nature and Science, Tokyo)

2009 Lead proponent for the white paper to IODP-US Advisory Committee "Workshop to broaden the participation in IODP science and programs"

2009 Event Coordinator/Supervisor, "Compute This" (geological/environmental), Texas Science Olympiad, College Station, TX

- During graduate school

2009 Judge for 2009 International Sustainable World (Energy, Eng., and Env.) Olympiad, Houston, TX

2008 Judge for Science Fair, Harmony Sci. Acad. (K-12), Bryan, TX

2007 Participant in "Sea90E" (NSF-IODP JOI Learning, http://www.joilearning.org/sea90e/)

Honors and Awards

2016 "Deep Sea Six" – 1 full-page profile as a deep sea magnetics explorer in Popular Science Magazine 2017 Jan./Feb. printed issue (http://www.popsci.com/masako-tominaga-underwater-geophysicist).

2010 AGU Editor's Highlight re: Tominaga, M., and W. W. Sager (2010)

2009 Distinguished Graduate Student Awards in Research, The Association of Former Students and the Office of Graduate Studies at Texas AM University.

2008 Schlanger Ocean Drilling Fellowships

2007 Outstanding Student Paper Award, AGU Fall 2007 Meeting

2005 Geosciences Graduate Excellence Scholarship, College of Geoscience, Texas AM University

2002 College of Geoscience GERAC Fellowship, Texas AM University.

Science Talks

2024 Tominaga, M., Beyond Seafloor Spreading, US InterRidge Spring 2024 Webinar inauguration talk

2023 Tominaga, M., Oceanic Crust, The Committee on the 2025-2035 Decadal Survey of Ocean Sciences for the National Science Foundation, National Academy of Sciences

2022 Tominaga, M., High-resolution magnetic-geochemical mapping of the serpentinized and carbonated peridotite: toward establishing magnetometry as a monitoring tool for in situ mineral carbonation, Institut de Physique du Globe de Paris

2019 Tominaga, M., Multiscale magnetometry frontiers: Establishing a magnetic monitoring scheme of in situ metasomatism in mantle peridotite, Ecole Normale Superieure.

2019 Tominaga, M., In search of the origin of the Pacific Plate, JAMSTEC

2017 Tominaga, M., The Origin of the Jurassic Magnetic Quiet Zone and the evolution of deep submergence magnetometry, Oregon State University.

2016 Tominaga, M., The Origin of the Jurassic Magnetic Quiet Zone and the evolution of deep submergence magnetometry, New Mexico State University.

2016 Tominaga, M., The Origin of the Jurassic Magnetic Quiet Zone and the evolution of deep submergence magnetometry, Univ. Texas Institute of Geophysics.

14 invited colloquial talks 2004-2014

Contributions to IODP publications, Data Bank and Book Chapters

14. Expedition 398 bibliography. http://publications.iodp.org/proceedings/398/398title.htmlbib

13. Tominaga, M., Orcutt, B.N., and Blum, P., 2019. Expedition 385T Scientific Prospectus: Panama Basin Crustal Architecture and Deep Biosphere. International Ocean Discovery Program. https://doi.org/10.14379/iodp.sp.385T.2019

12. Tominaga, M., Orcutt, B.N., Blum, P., and the Expedition 385T Scientists, 2019. Expedition 385T Preliminary Report: Panama Basin Crustal Architecture and Deep Biosphere. International Ocean Discovery Program. https://doi.org/10.14379/iodp.pr.385T.2019

11. Michibayashi, K., M. Tominaga, B. Ildefonse, and D.A.H Teagle, 2019, What lies beneath; The formation and evolution of oceanic lithosphere, Oceanography, 32, 1, 138-149.

10. A chapter for downhole-logging technology and science in Anma et al. "Foundation for Ocean Floor Science" (ISBN:978-4-320-04729-7).

9. Expedition 335 Scientists, 2011. Superfast spreading rate crust 4: drilling gabbro in intact ocean crust formed at a superfast spreading rate. IODP Prel. Rept., 335. doi:10.2204/iodp.pr.335.2011

8. Ildefonse, B., N. Abe, D. K. Blackman, J. P. Canales, Y. Isozaki, S. Kodaira, G. Meyers, K. Nakamura, M. Nedimovic, A. C. Skinner, N. Seama, E. Takazawa, D. A. H. Teagle, M. Tominaga, S. Umino, D. S. Wilson, and M. Yamao, 2010, The Mohole: A Crustal Journey and Mantle Quest, Workshop in Kanazawa, Japan, 3-5 June 2010, Scientific Drilling, 10, 56-63.

7. Expedition 324 Preliminary Report: "Testing plume and plate models of ocean plateau formation at Shatsky Rise, northwest Pacific Ocean", doi:10.2204/iodp.pr.324.2010.

6. Tominaga, M. and M. C. Lyle, Multi-channel seismic reflection data processing: TUIM03 site survey cruise (UTIG Marine Seismic Data Bank).

5. Expedition 304/305 Scientists, 2006. Site U1309. In Blackman, D.K., Ildefonse, B., John, B.E., Ohara, Y., Miller, D.J., MacLeod, C.J., and the Expedition 304/305.

4. Scientists, Proc. IODP, 304/305: College Station TX (Integrated Ocean Drilling Program Management International, Inc.). doi:10.2204/iodp.proc.304305.103.2006.

3. Expedition 309/312 Scientists, 2006. Superfast spreading rate crust 3: a complete in situ section of upper oceanic crust formed at a superfast spreading rate, IODP Prel. Rept., 309. doi:10:2204/iodp.pr.312.2006. http://iodp.tamu.edu/publications/PR/312PR/312PR.html.

2. Expedition 309 Scientists, 2005. Superfast spreading rate crust 2: a complete in situ section of upper oceanic crust formed at a superfast spreading rate. IODP Prel. Rept., 309. doi:10:2204/iodp.pr.309.2005. http://iodp.tamu.edu/publications/PR/309PR/309PR.html.

1. Expedition 305 Scientists, 2005. Oceanic Core Complex 2. IODP Prel. Rept., 305. doi:10:2204/iodp.pr.305.2005. http://iodp.tamu.edu/publications/PR/305PR/305PR.html.