

**Education – University of Hawai‘i at Mānoa**

B.S., with distinction, Geology &amp; Geophysics, Aug. 1994–May 1998

M.S., Marine Geology &amp; Geophysics, Jan. 2003–May 2006, Advisor: Dr. Paul Wessel

- Thesis topic: “Improving the Quality Control of Marine Geophysical Trackline Data”

Ph.D., Marine Geology &amp; Geophysics, Aug. 2006–Dec. 2011, Advisor: Dr. Paul Wessel

- Dissertation topic: “Tectonic History of the Greater Ontong Java Plateau and Errata-based Correction of Marine Geophysical Trackline Data”

**Experience**

*Oceanographer* Naval Oceanographic Office, Bay Saint Louis, MS Mar. 2023–present  
I am involved in data collection and production of an assortment of oceanographic products to aid in providing to DoD the best available knowledge of the maritime environment.

*Marine Geophysicist* University of Hawai‘i, Honolulu, HI Nov. 2021–present  
I produce geophysical exchange files in the current standard MGD77T format and perform QA/QC prior to publishing surveys slated for release. I also engage in public outreach to inform the scientific community of the new data sets as well as engaging in a host of other geophysical investigations.

*Geophysical Consultant* Trackline Marine, LLC, Honolulu, HI Aug. 2019–Apr. 2022  
As a consultant specializing in marine gravity, magnetic, and sonar data acquisition, processing, visualization, quality control and archival, I participated in numerous short-term geophysical projects.

*Postdoctoral Scientist* Korea Institute of Ocean Science & Technology Feb. 2016–May 2018  
Engaged in numerous geophysical investigations of the Central Indian Ridge, N Fiji Basin and E Equatorial Pacific. Also developed methods for rapid estimation of seafloor spreading rates and synthetic magnetic anomaly modeling at ridge crossings with continued data archival and quality control work.

*Affiliate Researcher* University of Hawai‘i, Honolulu, HI Aug. 2014–present  
Investigated the tectonics of the Ontong Java–Manihiki–Hikurangi super plateau break-up and tectonics of the Ellice, Lau and West Philippine basins. Additional ongoing academic work includes deploying a marine geophysical processing system I developed to prepare raw shipboard geophysical data for archival.

*Geophysicist* University of Hawai‘i, Honolulu and abroad July. 2014–June 2019  
Hawaii Mapping Research Group member and deep tow sonar operator for: July–Aug. 2014 E. Equatorial Pacific, Nov.–Dec. 2014 W. Pacific, and May–June 2019 Indian Ridge expeditions chartered by the Korea Institute of Ocean Science & Technology.

*Postdoctoral Researcher* Michigan State University, East Lansing, MI July 2013–July 2014  
Reduced three component magnetic data gathered by a prototype array of drifting magnetic sensors. Continued with ongoing review of trackline geophysical data and generation of errata correction tables for the removal of extreme data errors in existing data archives. Also mentored two graduate students.

*Postdoctoral Research Associate* University of Hawai‘i, Honolulu, HI Jan. 2012–June 2013  
Compiled geophysical maps of W Philippine, Ellice, Osbourn, and Northwest Lau basins for tectonic interpretation and corrected published geophysical archives to better resolve seafloor features. Also upgraded University of Hawaii’s marine geophysical data processing capability and prepared shipboard data for archival.

*Graduate Assistant* University of Hawai‘i, Honolulu, HI Jan. 2003–Dec. 2011  
Developed and implemented marine geophysical data quality control and error reduction methods to improve the quality of new data submitted to the national archive as well as improve existing data dating back to the early 1950s. My Ph.D. studies also involved geophysical studies of the NW Lau Spreading Center and a tectonic investigation of the breakup of the Ontong Java/Manihiki/Hikurangi super plateau. I also spent three semesters teaching geology lab classes and participated in numerous seagoing research expeditions.

*Senior Data Processor* Oceanic Imaging Consultants, Inc., Honolulu, HI Jan. 2001–Dec. 2002  
Processed sonar data to produce seafloor maps. Configured and tested seafloor survey systems, tested new software versions and wrote documentation for manuals.

*Senior Survey Technician* NOAA Ship *RUDE*, Norfolk, VA Feb. 5, 1999–Aug. 25, 2000  
Duties included manual operation of multibeam, sidescan, and single beam sonar systems, processing sonar data, SCUBA diving on ship wrecks and underwater obstructions, administering the ship PC/UNIX network and website, as well as training new employees on the use of survey systems.

**Scientific Publications**

Hamilton, M (2021): Marine geophysical data exchange files for R/V Kilo Moana: 2002 to 2018 (Version 0.1.1) [Data set]. Zenodo. <http://doi.org/10.5281/zenodo.4722013>.

- Hamilton, M, Wessel, P, Luis, J, Taylor, B, and Ko, YT (2019): The seagoing scientist's toolbox: Integrated methods for quality control of marine geophysical data at sea, *Geochem. Geophys. Geosys.*, 20, 1–10. <https://doi.org/10.1029/2018GC007891>.
- Hamilton, M, Wessel, P, Taylor, B, and Luis, J (2019): Producing marine geophysical archive files from raw underway data, *Comp & Geosci.*, 133, <http://doi.org/10.1016/j.cageo.2019.104321>.
- Kim, HJ, et al., Chandler, MT, et al. (2018): Sinking particle flux in the subtropical oligotrophic northwestern Pacific from a short-term sediment trap experiment, *Ocean Sci. J.*, doi: <https://doi.org/10.1007/s12601-018-0025-z>.
- Wessel, P., M. T. Chandler, and N. Wright (2017), SURVEY - tools for at-sea data processing and display via Google Earth, <http://www.soest.hawaii.edu/pwessel/survey>. Published online, not peer reviewed.
- Pak, SJ, Moon, JW, Kim, J, Chandler, MT, Kim, HS, Son, J, Son, SK, Choi, SK, and Baker, ET (2017): Widespread tectonic extension at the Central Indian Ridge between 8°S and 18°S, *Gondwana Res.*, <http://doi.org/10.1016/j.jgr.2016.12.015>.
- Wessel, P, Matthews, KJ, Muller, RD, Mazzoni, A, Whittaker, JM, Myhill, R, and MT Chandler (2015), Semiautomatic fracture zone tracking, *Geoch Geophys Geosys.*, <http://doi.org/10.1002/2015GC005853>.
- Chandler, MT, Wessel, P, and B Taylor (2015): Tectonic reconstructions in magnetic quiet zones: Insights from the Greater Ontong Java Plateau, in Neal, C.R., Sager, W.W., Sano, T., and Erba, E., eds., *The Origin, Evolution, and Environmental Impact of Oceanic Large Igneous Provinces*: *Geol. Soc. Amer. Special Paper* 511, p. 185-193, [doi.org/10.1130/2015.2511\(10\)](https://doi.org/10.1130/2015.2511(10)).
- Sandwell, DT, Garcia, E, Soofi, K, Wessel, P, Chandler, MT, and WHF Smith: (2013) Towards 1 mGal global marine gravity from CryoSat-2, Envisat, and Jason-1, *The Leading Edge*.
- Chandler, MT, Wessel, P, and W Sager (2013): Analysis of Ontong Java Plateau Paleolatitudes: Evidence for large-scale rotation since 123 Ma?, *Geophys. J. Int.*, <http://doi.org/10.1093/gji/ggt075>, pp. 1-12.
- Chandler, MT and P Wessel (2012): Errata-based Correction of Marine Geophysical Trackline Data, *Geochem. Geophys. Geosys.*, 13, 10, <http://doi.org/10.1029/2012GC004294>.
- Chandler, MT, Wessel, P, Taylor, B, Seton, M, Kim, SS and K Hyeong (2012): Reconstructing Ontong Java Nui: Implications for Absolute Plate Motion, Hotspot Drift and True Polar Wander, *Earth and Planet. Sci. Letters*, 331-332, <http://doi.org/10.1016/j.epsl.2012.03.017>, pp. 140-151.
- Seton, M, Muller, D, Zahirovic, S, Gaina, C, Torsvik, T, Shephard, G, Talsma, A, Gurnis, M, Turner, M and M Chandler (2012): Global Continental and Ocean Basin Reconstructions since 200 Ma, *Earth Sci. Rev.*, [doi:10.1016/j.earscirev.2012.03.002](https://doi.org/10.1016/j.earscirev.2012.03.002).
- Wessel, P, and MT Chandler (2011): The Spatial and Temporal Distribution of Marine Geophysical Surveys, *Acta Geophysica*, 59, no. 1, pp. 55-71.
- Wessel, P, Anderson, T, Austin, R, Benediktsdottir, A, Chandler, MT, Conley, MM, Kim, SS, Michaud, RL, Rumpf, E, Sleeper, JD, and JR Weiss (2009): Seminar 2.0: Learning with Skype and Video Podcasts, *AGU EOS Trans.*, 90, No. 17, 145-147.
- Chandler, MT, and P Wessel (2008), Improving the quality of marine geophysical track line data: Along-track analysis, *J. Geophys. Res.*, 113, B02102, <http://doi.org/10.1029/2007JB005051>.
- Wessel, P, MT Chandler (2007), The mgd77 supplement to the Generic Mapping Tools, *Comp & Geosci*, 33, 62-75.

## Conference Abstracts

- Hamilton, M., Taylor, B. and Wessel, P. (2021), *Abstract*: Public Release of R/V Kilo Moana geophysical data: 2002 to 2018, AGU Fall Meeting, Virtual participant, New Orleans.
- Kim, S.-S., Uieda, L., Chandler, M. T., Pak, S. J., and Son, S.-K. (2018), *Oral*: Three-dimensional Forward and Inverse Gravity Modeling of Ocean Core Complexes at the Central Indian Ridge, Asia Oceania Geoscience Meeting, Honolulu.
- Chandler M. T., Pak, S. J., Ko, Y. T., and Kim, S. S. (2017), *Poster*: Automatic methods for estimating seafloor spreading rates and modeling synthetic magnetic anomalies at ridge crossings, Geological Society of Korea Annual Fall Joint Geology Meeting, Jeju, Korea.
- Chandler M. T., Wessel, P., Taylor, B., and Benyshek, E. (2017), *Poster*: New shipboard magnetic and gravity data from the Cretaceous Ellice Basin, 113th GSA Cordilleran Section Annual Meeting, <http://doi.org/10.1130/abs/2017CD-293051>, Honolulu.
- Benyshek, E., Wessel, P., Chandler, M. T., Taylor, B., Wright, N. M., Hellebrand, E., Davidson, P., and Koppers, A., *Abstract*: Mapping the Ellice Basin: Preliminary results from cruise KM1609, 113th GSA Cordilleran Section Annual Meeting, <http://doi.org/10.1130/abs/2017CD-292688>, Honolulu.
- Kim, S.-S., Choi, H., Dymant, J., Granot, R., Park, S.-H., Chandler, M. T. *Abstract*: Revised MacQuarie plate motion and its tectonic implications on Pacific-Antarctic-Australian Interaction, 113th GSA Cordilleran Section Annual Meeting, <http://doi.org/10.1130/abs/2017CD-293074>, Honolulu.
- Chandler, M. T., Wessel, P., Ko, Y.-T., Kim, S.-S. (2017), *Oral presentation*: Real-time data quality control, monitoring, and archival preparation at sea: A geoscientist-centric approach, 2017 Joint Conference of the Korean Society of Economic and Environmental Geology, Gyeongju, Korea.
- Joo, J.-M., Choi, J.-W., Ko, Y.-T., Kim, J., Pak, S.-J., Chandler, M.T., Son, S.-K., Lee, K.-Y., Moon, J.-W., Chi, S.-B.

(2016), *Short Paper*: Various applications of acoustic data to deep-seabed mineral deposits, Symposium on UltraSonic Electronics, Busan, South Korea.

Joo, J.-M., Ko, Y.-T., Chandler, M.T., Kim, J., Pak, S.-J., Choi, J.-W., Yoo, C.-M., Son, S.-K., Moon, J.-W., (2016), *Poster*: Estimation of manganese crust coverage by seafloor image binarization, Underwater Mining Conference, Seoul, Korea.

Chandler, M. T.; Pak, S.-J., Kim, H.-S., Kim, S.-S., Kim, J., Son, S.-K., Moon, J.-W., (2016), *Oral presentation*: Gravity and Magnetism of the Central Indian Ridge: Preliminary findings in the vicinity of 17°S to 8°S, Underwater Mining Conference, Seoul, Korea.

Chandler, M. T.; Tominaga, M.; Sager, W. W.; Tivey, M. A.; Fucile, P. (2014), *Abstract*: Mapping the marine magnetic field using autonomous magnetic drifters, Ocean Sciences Meeting, Honolulu.

Chandler, M. T.; Miller, J.; Ferguson, J. S.; Taylor, B.; Wessel, P., *Abstract*: Sharing SOEST underway data: A new approach, Ocean Sciences Meeting, Honolulu.

Chandler, M.T., Wessel, P., Taylor, B., and W.W. Sager (2012), *Abstract*: Reassembling the Ontong Java-Manihiki-Hikurangi large igneous province: Insights and challenges, AGU Fall Meeting, San Francisco.

Miller, J.E., Chandler, M.T., Taylor, B., Shor, A., Ferguson, J.S., and P. Wessel (2012), *Abstract*: R/V Kilo Moana's New Geophysical Instrumentation, Processing Methods, and Online Data Repository, AGU Fall Meeting, San Francisco.

Chandler, M.T. and Wessel, P. (2011), *Poster*: Analysis of Ontong Java Plateau paleolatitudes and evidence for rotation since 123 Ma, AGU Fall Meeting, San Francisco.

Wessel, P., S. Kim, and M.T. Chandler (2008): *Abstract*: Marine gravity from satellite altimetry and the search for seamounts and oceanic fracture zones, International Geological Conference, Oslo, Norway.

Chandler, M. and P. Wessel (2007), *Poster*: Improving marine geophysical data quality, AGU Fall Meeting, San Francisco.

Chandler, M. and P. Wessel (2004), *Poster*: Improving NGDC track-line data quality control, AGU Fall Meeting, San Francisco.

Ito, G., Chandler, M.T., Martel, S.J., and D. Bercovici (1998), *Abstract*: Magma transport in the lithosphere: Connecting the surface to the source, Gordon Research Conference, New Hampshire.

## Skills

Experienced with Generic Mapping Tools, C, Shell scripts, Matlab, MB-System, Hypack-ISIS-Caris-OIC toolkit. Skilled in acquisition/analysis/reduction of marine geophysical data, along-track and crossover analyses, QC and archival, science writing, production of maps and other scientific illustrations, seafloor mapping, sonar data acquisition/processing, and plate tectonic reconstructions. Also skilled in PHP/MySQL/HTML, LaTeX, OS X/UNIX/Linux/Windows. BOSIET thru 2018/06/03 (not current), Escape Systems Training, certified NOAA Working Diver and NAUI Worldwide Master SCUBA Diver (not current) with Nitrox and Drysuit qualifications.

## Honors and Awards

Co-PI NSF grant no. 1458964 (2016–2018: Ellice Basin survey–QZ tectonics), Leonida Family Scholarship (2011), UH Graduate Student Organization Student Travel Grant (2010), International Association for Mathematical Geosciences Student Research Grant (2010), J Watumull Merit Scholarship (2009), NOAA Unit Commendation for outstanding service in locating JFK Jr's downed aircraft (1999), SOEST Dean's List (1996, 1997, 1998), twice recipient of the Geology and Geophysics Undergraduate Research Fellowship (1997, 1998), John A. Burns Foundation Scholarship (1994).

## Seagoing Experience

Date	Days	Vicinity	Survey	Capacity	Data Purview	Employer	Vessel
03/03/99–03/31/99	29	Chesapeake Bay, VA	OPR-E350	Asst Survey Tech	SB/R9003/E272	NOAA	RUDE
04/12/99–05/28/99	47	Penobscot Bay, ME	OPR-B343	Asst Survey Tech	SB/R9003/E272	NOAA	RUDE
06/01/99	1	Penobscot Bay, ME	OPR-A366	Asst Survey Tech	SB/R9003/E272	NOAA	RUDE
06/06/99–08/26/99	82	Block Island Sound, RI	OPR-B663	Asst Survey Tech	SB/R9003/E272	NOAA	RUDE
07/17/99–07/23/99	7	Martha's Vineyard, MA	JFKJR-SAR	Asst Survey Tech	SB/R9003/E272	NOAA	RUDE
09/23/99–10/14/99	22	Hudson River, NY/NJ	OPR-B330	Survey Technician	SB/R9003/E272	NOAA	RUDE
10/12/99–10/13/99	2	Fire Isl to Staten Isl, NY	S-C906	Survey Technician	SB/R9003/E272	NOAA	RUDE
02/16/00–03/31/00	45	Chesapeake Channel, VA	OPR-E350	Survey Technician	SB/R9003/E272	NOAA	RUDE
03/22/00–06/23/00	94	Hussey Sound, ME	OPR-A329	Senior Survey Tech	SB/R9003/E272	NOAA	RUDE
05/31/00	1	Boston North Channel, MA	F00465	Senior Survey Tech	SB/R9003/E272	NOAA	RUDE
05/08/00–05/31/00	24	West Code Ledge, ME	OPR-A329	Senior Survey Tech	SB/R9003/E272	NOAA	RUDE
06/14/00–08/01/00	49	Montauk Point, NY	OPR-B663	Senior Survey Tech	SB/R9003/E272	NOAA	RUDE
12/26/03–12/31/03	6	Kauai/Niihau Channel, HI	KM0326	Student Scientist	EM120+1002/M/G	SOEST	Kilo Moana
10/22/04–11/10/04	20	Woodlark Basin, W Pac	KM0418	Student Scientist	EM120+1002/M/G	SOEST	Kilo Moana
10/24/05–10/28/05	5	South of Kauai, HI	KM0518	Student Scientist	EM120+1002/M/G	SOEST	Kilo Moana
04/30/08–06/07/08	39	Lau Basin, SW Pac	SS072008	Magnetometry	M	SOEST	Southern Surveyor
09/13/09–09/28/09	16	Ellice Basin, W Pac	KORDI093	Geophysicist	EM120+1002/M/G	SOEST	Onnuri
07/10/11–08/14/11	36	Eastern Equatorial Pac	KODOS11-1	Deep Tow Sonar Operator	IMI30	HMRG	Ka'imiki Kai O Kanaloa
06/21/12–06/24/12	4	South of Oahu, HI	KM1212	Systems Testing	EM120+1002	SOEST	Onnuri
09/29/12–10/25/12	27	Eastern Equatorial Pac	KODOS12-2	Deep Tow Sonar Processor	DSL120	HMRG	Onnuri
07/15/14–08/08/14	25	Eastern Equatorial Pac	KODOS14-1	Deep Tow Sonar Operator	IMI30	HMRG	Onnuri
11/15/14–12/10/14	26	W Pac (Guam)	KODOS14-2	Deep Tow Sonar Operator	IMI30	HMRG	Onnuri
10/23/16–11/16/16	25	N Fiji Basin	NFB2016-1	3-component Magnetometry	ROV R7125/3-axis M	KIOST	Pelagia
12/03/16–01/10/17	39	Ellice Basin, W Pac	KM1609	Geophysicist	SUB/EM122+710/M/G	SOEST	Kilo Moana
07/18/17–08/14/17	28	Central Indian Ridge	CIR1701-1	Deep Tow Sonar Operator	IMI30	KIOST	Onnuri
03/05/18–04/03/18	30	Eastern Equatorial Pac	KODOS-1801	Geophysicist	EM122+710/M/G	KIOST	Kilo Moana
05/20/19–06/16/19	28	Central Indian Ridge	CIR1901	Deep Tow Sonar Operator	DSL120	HMRG	Isabu
757		27					

*Note*: Data purview types include: Multibeam sonars: (R9003) Reson Seabat 9003; (EM120+1002) Kongsberg EM120 and 1002; (EM122+710) Kongsberg EM122 and 710; (R7125) Reson Seabat 7125. (SB) Single-beam sonars (generic). Sidescan sonars: (E272) Edgetech 272 for shallow; (DSL120) 120 kHz deep tow sidescan/interferometry (true sidescan with bathymetry); (IMI30) 30 kHz deep tow sidescan/interferometry (true sidescan with bathymetry). (SUB) Sub-bottom (3.5 kHz). (M) Towed magnetics (total field unless otherwise noted). (G) Marine gravimetry (including L&R spring and BGM-3 forced-feedback meter types).