

Andrea J. Fassbender

Research Scientist
NOAA Pacific Marine Environmental Laboratory
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EDUCATION

- 2010 - 2014 Ph.D. Oceanography
University of Washington (UW), School of Oceanography, Advised by Dr. Christopher L. Sabine
Dissertation: New approaches to study the marine carbon cycle
- 2007 - 2010 M.S. Oceanography
UW School of Oceanography, Advised by Dr. Christopher L. Sabine
- 2007 - 2009 Graduate Certificate in Climate Science
UW Program on Climate Change
- 2003 - 2007 B.S. Combined Honors: Chemistry and Oceanography
University of British Columbia, Advised by Dr. Kristin Orians
Thesis: Manganese as a tracer of bottom water renewal in Saanich Inlet, British Columbia

APPOINTMENTS

- 2021 - present Affiliate Assistant Professor in Chemical Oceanography, University of Washington
- 2020 - present Research Physical Scientist, NOAA Pacific Marine Environmental Laboratory (PMEL)
- 2020 - present Adjunct Scientist, Monterey Bay Aquarium Research Institute
- 2018 - present Adjunct Assistant Professor in Ocean Sciences, UC Santa Cruz
- 2017 - 2020 Scientist, Monterey Bay Aquarium Research Institute
- 2014 - 2016 UCAR Postdoctoral Fellow: Postdocs Applying Climate Expertise; Host: NOAA PMEL
- 2007 - 2014 Chemical Oceanography Ph.D. Student, UW

PUBLICATIONS (*lab member/mentee)

UNDER REVIEW

- *Arroyo, M.C., A.J. Fassbender, B.R. Carter, C.A. Edwards, J. Fiechter, *A. Norgaard, and R.A. Feely. Dissimilar sensitivities of ocean acidification metrics to anthropogenic carbon accumulation in the Central North Pacific Ocean and California Current System. *Accepted at Geophysical Research Letters*.
- Neibergall, A.K., S. Traylor, *Y. Huang, M. Feen, M.G. Meyer, H.M. McNair, D. Nicholson, A.J. Fassbender, M.M. Omand, A. Marchetti, S. Menden-Deuer, W. Tang, W. Gong, P. Tortell, R. Hamme, and N. Cassar. Evaluation of new and net community production estimates by multiple ship-based and autonomous observations in the Northeast Pacific Ocean. *Under review at Elementa*.

REFEREED

- *Sharp, J.D., A.J. Fassbender, B.R. Carter, P.C. Lavin, A.J. Sutton. A monthly surface $p\text{CO}_2$ product for the California Current Large Marine Ecosystem (2022). *Earth System Science Data*, doi: [10.5194/essd-14-2081-2022](https://doi.org/10.5194/essd-14-2081-2022)
- Fassbender, A.J., S. Sarah Schlunegger, K.B. Rodgers, and J.P. Dunne. Quantifying the role of seasonality in the marine carbon cycle feedback: An ESM2M case study (2022). *Global Biogeochemical Cycles*, doi: [10.1029/2021GB007018](https://doi.org/10.1029/2021GB007018)
- *Huang, Y., A.J. Fassbender, *J.S. Long, S. Johannessen, and M. Bif. Partitioning the export of distinct biogenic carbon pools in the Northeast Pacific Ocean using a biogeochemical profiling float (2022). *Global Biogeochemical Cycles*, doi: [10.1029/2021GB007178](https://doi.org/10.1029/2021GB007178)
- Nickford, S., J.B. Palter, K. Donohue, A.J. Fassbender, A.R. Gray, *J.S. Long, A.J. Sutton, N.R. Bates, and Y. Takeshita. Autonomous wintertime observations of air-sea exchange in the Gulf Stream reveal a perfect storm for ocean CO_2 uptake (2022). *Geophysical Research Letters*, doi: [10.1029/2021GL096805](https://doi.org/10.1029/2021GL096805)

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- Roemmich, D., L. Talley, N. Zilberman, E. Osborne, K.S. Johnson, L. Barbero, H.C. Bittig, N. Briggs, **A.J. Fassbender**, G.C. Johnson, B.A. King, E. McDonagh, S. Purkey, S. Riser, T. Suga, Y. Takeshita, V. Thierry, and S. Wijffels. The technological, scientific, and sociological revolution of global subsurface ocean observing. Pp. 2–8 in *Frontiers in Ocean Observing: Documenting Ecosystems, Understanding Environmental Changes, Forecasting Hazards*. E.S. Kappel, S.K. Juniper, S. Seeyave, E. Smith, and M. Visbeck, eds (2021), A Supplement to *Oceanography* 34(4), doi: [10.5670/oceanog.2021.supplement.02-02](https://doi.org/10.5670/oceanog.2021.supplement.02-02).
- *Long, J.S., **A.J. Fassbender**, and M.L. Estapa. Depth-resolved net primary production in the Northeast Pacific Ocean: A comparison of satellite and profiling float estimates in the context of two marine heatwaves (2021). *Geophysical Research Letters*, doi: [10.1029/2021GL093462](https://doi.org/10.1029/2021GL093462).
- Carter, B.R., H. Bittig, **A.J. Fassbender**, *J. Sharp, Y. Takeshita, Y. Xu, M. Alvarez, R. Wanninkhof, R. Feely, and L. Barbero. New and Updated Global Empirical Seawater Property Estimation Routines (2021). *Earth System Science Data*, doi: [10.1002/lom3.10461](https://doi.org/10.1002/lom3.10461).
- Siegel, D.A. et al. An operational overview of the EXport Processes in the Ocean from RemoTe Sensing (EXPORTS) Northeast Pacific field deployment (2021). *Elementa*, doi: [10.1525/elementa.2020.00107](https://doi.org/10.1525/elementa.2020.00107).
- Fassbender A.J.**, J.C. Orr, and A.G. Dickson. Technical note: Interpreting pH changes (2021). *Biogeosciences*, doi: [10.5194/bg-18-1407-2021](https://doi.org/10.5194/bg-18-1407-2021). **Media:** [EGU Blogs: Biogeosciences & OCB Science Highlight](#)
- *Haskell W.Z., **A.J. Fassbender**, *J.S. Long, and J.N. Plant. Annual net community production of particulate and dissolved organic carbon from a decade of biogeochemical profiling float observations in the Northeast Pacific (2020). *Global Biogeochemical Cycles*, doi: [10.1029/2020GB006599](https://doi.org/10.1029/2020GB006599). **Media:** [OCB Science Highlight](#)
- Rodgers, K.B., S. Schlunegger, R.D. Slater, M. Ishii, T.L. Frölicher, K. Toyama, Y. Plancherel, O. Aumont, and **A.J. Fassbender**. Re-emergence of anthropogenic carbon into the ocean's mixed layer strongly amplifies transient climate sensitivity (2020). *Geophysical Research Letters*, doi: [10.1029/2020GL089275](https://doi.org/10.1029/2020GL089275).
- Johnson, K.S., M.F. Bif, S.M. Bushinsky, **A.J. Fassbender**, and Y. Takeshita. Biogeochemical Argo [in "State of the Climate in 2019"] (2020). *Bull. Amer. Meteor. Soc.*, 101 (8), S39–S41, doi: <https://doi.org/10.1175/BAMS-D-20-0105.1>.
- Cai, W.J. et al. Controls on surface water carbonate chemistry along North American ocean margins (2020). *Nature Communications*, doi: [10.1038/s41467-020-16530-z](https://doi.org/10.1038/s41467-020-16530-z). **Media:** [UDaily article](#)
- Sulpis, O., Dofour, C.O., Trossman, D.S., **Fassbender, A.J.**, Arbic, B.K., Boudreau, B.P., Dunne, J.P., and A. Mucci. Decreasing bottom-current speeds and seafloor CaCO₃ dissolution under a business-as-usual scenario (2019). *Global Biogeochemical Cycles*, doi: [10.1029/2019GB006230](https://doi.org/10.1029/2019GB006230).
- Todd, R. E., Chavez, F. P., Clayton, S., et al., Global perspectives on observing ocean boundary current systems (2019). *Frontiers in Marine Science*, doi: [10.3389/fmars.2019.00423](https://doi.org/10.3389/fmars.2019.00423).
- Carter, B.R., Williams, N.L., Evans, W., **Fassbender, A.J.**, Barbero, L., Hauri, C., Feely, R.A., and A.J. Sutton. Time-of-emergence as a metric for prioritizing between climate observation quality, frequency, and duration (2019). *Geophysical Research Letters*, doi: [10.1029/2018GL080773](https://doi.org/10.1029/2018GL080773).
- Fassbender, A.J.**, Rodgers, K.B., Palevsky, H.I., and C.L. Sabine (2018). Seasonal asymmetry in the evolution of surface ocean pCO₂ and pH thermodynamic drivers and the influence on sea-air CO₂ flux. *Global Biogeochemical Cycles*, doi: [10.1029/2017GB005855](https://doi.org/10.1029/2017GB005855). **Media:** [Comment by Ryan J. Woosley](#)
- Fassbender, A.J.**, Alin, S.R., Feely, R.A., Sutton, A.J., Newton, J.A., Krembs, C., Bos, J., Keyzers, M., Devol, A., Ruef, W., and G. Pelletier (2018). Seasonal carbonate chemistry variability in marine surface waters of the US Pacific Northwest. *Earth System Science Data*, doi: [10.5194/essd-10-1367-2018](https://doi.org/10.5194/essd-10-1367-2018). **Media:** [PMEL Monthly Feature Publication](#)
- Feely, R.A., Okazaki, R.R., Cai, W.-J., Bednaršek, N., Alin, S.R., Byrne, R.H., and **A.J. Fassbender** (2017). The combined effects of acidification and hypoxia on pH and aragonite saturation in the coastal waters of the California Current Ecosystem and the northern Gulf of Mexico. *Continental Shelf Research*, doi: [10.1016/j.csr.2017.11.002](https://doi.org/10.1016/j.csr.2017.11.002).
- Fassbender, A.J.**, Palevsky, H.I., Martz, T.R., Ingalls, A.E., Gledhill, M., Fawcett, S.E., Brandes, J.A., Aluwihare, L.I., and the participants of COME ABOARD and DISCO XXV (2017). Perspectives on Chemical

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Oceanography in the 21st century: Participants of the COME ABOARD Meeting examine aspects of the field in the context of 40 years of DISCO. *Marine Chemistry*, doi: [10.1016/j.marchem.2017.09.002](https://doi.org/10.1016/j.marchem.2017.09.002).

- Fassbender, A.J.**, Sabine, C.L., and H.I. Palevsky (2017). Nonuniform ocean acidification and attenuation of the ocean carbon sink. *Geophysical Research Letters*, doi: [10.1002/2017GL074389](https://doi.org/10.1002/2017GL074389).
- Fassbender, A.J.**, Sabine, C.L., Cronin, M.F., and A.J. Sutton (2017). Mixed layer carbon cycling at the Kuroshio Extension Observatory. *Global Biogeochemical Cycles*, doi: [10.1002/2016GB005547](https://doi.org/10.1002/2016GB005547). **Media:** [OCB](#) & [US CLIVAR](#) Research Highlights
- Fassbender, A.J.**, Alin, S.R., Feely, R.A., Sutton, A.J., Newton, J.A., and R.H. Byrne (2017). Estimating total alkalinity in the Washington State coastal zone: Complexities and surprising utility for ocean acidification research. *Estuaries and Coasts*, doi: [10.1007/s12237-016-0168-z](https://doi.org/10.1007/s12237-016-0168-z).
- Newsom, E.R., **Fassbender, A.J.**, Maloney, A.E., and S.M. Bushinsky (2016). Increasing the usability of climate science in political decision-making. *Elementa: Science of the Anthropocene*, doi: [10.12952/journal.elementa.000127](https://doi.org/10.12952/journal.elementa.000127). **Media:** [UW Today](#)
- Fassbender, A.J.**, Sabine, C.L., and K.M. Feifel (2016). Consideration of coastal carbonate chemistry in understanding biological calcification. *Geophysical Research Letters*, 43(9), 4467-4476, doi: [10.1002/2016GL068860](https://doi.org/10.1002/2016GL068860). **Media:** [Nature Climate Change Research Highlight](#)
- Fassbender, A.J.**, Sabine, C.L., and M.F. Cronin (2016). Net community production and calcification from seven years of NOAA Station Papa Mooring measurements. *Global Biogeochemical Cycles*. doi: [10.1002/2015GB005205](https://doi.org/10.1002/2015GB005205). **Media:** [Eos Research Spotlight](#)
- Fassbender, A.J.**, Sabine, C.L., Lawrence-Slavas, N., De Carlo, E.H., Meinig, C. and S. Maenner Jones (2015). Robust sensor for extended autonomous measurements of surface ocean dissolved inorganic carbon. *Environmental Science & Technology*, doi: [10.1021/es5047183](https://doi.org/10.1021/es5047183).
- Pfeil, B., Olsen, A., Bakker, D. C. E., Hankin, S., Koyuk, H., Kozyr, A., Malczyk, J., Manke, A., Metzl, N., Sabine, C. L., **et al.** (2013). A uniform, quality controlled Surface Ocean CO₂ Atlas (SOCAT). *Earth System Science Data*, doi: [10.5194/essd-5-125-2013](https://doi.org/10.5194/essd-5-125-2013).
- Sabine, C. L., Hankin, S., Koyuk, H., Bakker, D. C. E., Pfeil, B., Olsen, A., Metzl, N., Kozyr, A., **Fassbender, A.J.**, **et al.** (2013). Surface Ocean CO₂ Atlas (SOCAT) gridded data products. *Earth System Science Data*, doi: [10.5194/essd-5-145-2013](https://doi.org/10.5194/essd-5-145-2013).
- Fassbender, A.J.**, Sabine C.L., Feely, R.A., Langdon, C., and C.W. Mordy (2011). Inorganic carbon dynamics during northern California coastal upwelling. *Continental Shelf Research*, doi: [10.1016/j.csr.2011.04.006](https://doi.org/10.1016/j.csr.2011.04.006).

NON-REFERREED PUBLICATIONS

- Schofield, O., **A. Fassbender**, M. Hood, K. Hill, and K. Johnson (2022), A global ocean biogeochemical observatory becomes a reality, *Eos*, 103, <https://doi.org/10.1029/2022EO220149>.
- Fassbender, A. J.**, Bourbonnais, A., Clayton, S., Gaube, P., Omand, M., Franks, P. J. S., Altabet, M. A., and McGillicuddy Jr., D. J. (2018), Interpreting mosaics of ocean biogeochemistry, *Eos*, 99, <https://doi.org/10.1029/2018EO109707>.
- Fassbender, A.J.**, J.B. Palter, M.C. Long, T. Ito, S.P. Bishop, and M.F. Cronin, 2018: Ocean Carbon Hot Spots. A Joint US CLIVAR and OCB Workshop Report, 2018-3, 34pp., doi:[10.5065/D6Z036ZS](https://doi.org/10.5065/D6Z036ZS).
- Rodgers, K.B., Zhai, P., Iudicone, D., Aumont, O., Carter, B., **Fassbender, A.J.**, Griffies, S.M., Plancherel, Y., Resplandy, L., Slater, R.D., and K. Toyama. “Western boundary currents as conduits for the ejection of anthropogenic carbon from the thermocline”. Joint [US CLIVAR Variations](#) & [OCB News](#) edition entitled *Frontiers in western boundary current research*. November 2017.
- Zhang, D., Cronin, M.F., Lin, X., Inoue, R., **Fassbender, A.J.**, Bishop, S.P., and A.J., Sutton. “Observing air-sea interaction in the western boundary currents and their extension regions: Considerations for OceanObs 2019”. Joint [US CLIVAR Variations](#) & [OCB News](#) edition entitled *Frontiers in western boundary current research*. November 2017.

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Qiu, B., Oka, E., Bishop, S.P., Chen, S., and **A.J. Fassbender**. "Decadal variability of the Kuroshio Extension system and its impact on subtropical mode water formation". Joint [US CLIVAR Variations](#) & [OCB News](#) edition entitled *Frontiers in western boundary current research*. November 2017.

Fassbender, A.J. and C.L. Sabine. "Observing changes in the surface ocean carbon inventory, autonomously". *IMBER Update Newsletter*. June 2015. <http://www.imber.info/News/Newsletters/Issue-n-28-June-2015>

GRANTS

RESEARCH

- 2022 **A.J. Fassbender** (Lead PI, PMEL). Biogeochemical Argo FY22. NOAA GOMO, \$750,000. Oct. 2021 – Sept. 2022.
- 2021 B.R. Carter (Lead PI, CICOES); Co-PIs: R.A. Feely and **A.J. Fassbender** (PMEL). Global Open Ocean Data-Products for Biogeochemical Argo Research. NOAA CPO, \$368,536. Sept. 2021 – Aug. 2024.
- 2021 S.M. Bushinsky (Lead PI, UH); Co-PIs: N.L. Williams (USF); **A.J. Fassbender** (PMEL). Biogeochemical Argo synthesis products of oxygen, nitrate, and pH for increased community utilization of autonomous profiling observations. NOAA CPO, \$444,216 (\$3,998, PMEL portion). Sept. 2021 – Aug. 2024.
- 2021 K.S. Johnson (Lead PI, MBARI); Co-PIs: S. Riser (UW); L. Talley (Scripps); S. Wijffels (WHOI); J. Sarmiento (Princeton). Operational support for the Global Ocean Biogeochemistry (GO-BGC) Array. NSF-OCE, \$12,166,219. May 2021 – April. 2026. **A.J. Fassbender** is Senior Personnel and Co-lead of the Data Team.
- 2021 **A.J. Fassbender** (Lead PI, PMEL). Biogeochemical Argo FY21. NOAA GOMO, \$703,712. Oct. 2020 – Sept. 2021.
- 2020 K.S. Johnson (Lead PI, MBARI); Co-PIs: S. Riser (UW); L. Talley (Scripps); S. Wijffels (WHOI); J. Sarmiento (Princeton). [Mid-scale RI-2 Consortium: Biogeochemical-Argo: A global robotic network to observe changing ocean chemistry and biology](#). NSF-OCE-1946578, \$52,942,749. Nov. 2020 – Oct. 2025. **A.J. Fassbender** is Senior Personnel and Co-lead of the Data Team.
- 2020 **A.J. Fassbender** (Lead PI*, MBARI⁺), K.S. Johnson (MBARI), D. Nicholson (WHOI), M. Estapa (UMaine), I. Cetinić (UMaine). [Collaborative Research: Multi-Platform Approach to Evaluate Spring Bloom Timing and Carbon Export Processes in the North Atlantic Ocean](#). NSF-OCE-2023274, \$995,934 (\$472,642 MBARI portion), Aug. 2020 – July 2023.
*Grant transferred to UW in 2021
*PI status was transferred to K.S. Johnson (MBARI) when Fassbender transitioned to NOAA PMEL and then to A.R. Gray (UW) when the grant was moved to UW.
- 2019 C. Edwards (Lead PI, UCSC), UCSC Co-PIs: J. Fiechter, K. Kroeker, A. Moore, and MBARI Co-PIs: **A.J. Fassbender**, and H. Ruhl. [An observing system optimization study for ocean acidification along the central and northern California coast](#). NOAA, \$769,999 (\$155,461 MBARI portion), Sept. 2019 – Aug. 2021.
- 2018 J. Palter (Lead PI, URI), A. Gray (UW), and Collaborators: S.P. Bishop (NCSU), S. Bushinsky (Princeton), K. Donohue (URI), **A.J. Fassbender** (MBARI), A.J. Sutton (PMEL), and R. Weller (WHOI). [Exchange of heat and carbon in the Gulf Stream and mode water formation region: Proof of concept for a Western Boundary Current observing system](#). 2018 Saildrone Award, \$1,000,000 in Saildrone time, Jan. 1 – 31, 2019.
- 2018 A.J. Sutton (Lead PI, PMEL), M. Casari (Co-PI, PMEL), N. Lawrence-Slavas (Co-PI, PMEL), S. Chu (Co-PI, PMEL), C. Meinig (Co-PI, PMEL), **A.J. Fassbender** (Co-PI, MBARI), and C.L.

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Sabine (Co-PI, UH Mānoa). [Air-sea CO₂ and dissolved inorganic carbon system for autonomous moored and surface vehicle applications](#). NOPP, \$715,000 (\$43,743 MBARI portion), Oct. 2018 – Sept. 2020.

2018 **A.J. Fassbender** (PI*, MBARI+). [Constraining upper-ocean carbon export with biogeochemical profiling floats](#). NSF-OCE-1756932, \$683,207, Mar. 2018 – Feb. 2021.

[†]Grant transferred to UCSC in 2019

*PI status was transferred to P.J. Lam when Fassbender transitioned to NOAA PMEL.

COMMUNITY BUILDING

2021 M. Tenreiro (Lead PI, CICESE); Co-PIs: E. Pallas, S. Estrada-Allis, J. Sheinbaum (CICESE), **A.J. Fassbender** (PMEL), E. Osborne (AOML), M. Hernandez Ayon (UABC). 2021 [Seatrec FIND Project to study Gulf of Mexico ocean circulation and its impact on weather and hurricanes](#).

2020 K.S. Johnson, R. Hotinski, **A.J. Fassbender**, S. Riser, L. Talley, and S. Wijffels. [Building a Community of Biogeochemical Float Data Users](#). OCB and US CLIVAR will assist with community adverting and workshop implementation. No funding was requested. Planned for June 2021.

2019 C. Brendan, M. Álvarez, A. Dickson, Y. Takeshita, N. Williams, A. Murata, L. Barbero, R. Byrne, **A.J. Fassbender**, M. Chierici, W.J. Cai, R. Woosley, and R. Easley. [Ocean Carbonate System Intercomparison Forum](#). OCB: \$29,500. Working Group 2019-2020.

2016/2017 **A.J. Fassbender** and S.P. Bishop. [Ocean Carbon Hot Spots Workshop](#). OCB: \$25,404. U.S. CLIVAR: \$25,000. Held Sept. 2017.

HONORS, AWARDS, & *SERVICE APPOINTMENTS

2020 [ICES/PICES Working Group on Negative Carbon Emissions in the Ocean*](#)

2020 Chinese-American Kavli Frontiers of Science symposium, invited speaker - *postponed until 2021*

2019 [US CLIVAR Early Career Scientist Leadership Award](#)

2019 Jupiter Research Foundation [REACT Program](#) Scientific Advisory Board*

2018 [AGU 2017 Editor's Citation for Excellence in Refereeing - JGR-Oceans](#)

2017 PMEL Outstanding Scientific Publication Nomination: doi: [10.1002/2015GB005205](#)

2017 OCB Scientific Steering Committee Early Career Member, nominated and elected*

2017 Invited Co-Guest Editor of joint [U.S. CLIVAR Variations & OCB News Edition*](#)

2017 Climate Impact on Ocean Systems Workshop (Stanford), invited participant

2017 ALPS II (Scripps), invited participant

2016 COME ABOARD Meeting (Honolulu, HI), invited participant and meeting Chair*

2014 Dissertations in Chemical Oceanography (DISCO) XXIV (Kauai, HI), invited participant

2014 Student Oral Presentation Award (Bergen, Norway), IMBER Open Science Conference

2012 - 2014 NSF IGERT Program on Ocean Change Fellowship

2008 - 2009 UW Program on Climate Change Fellowship

2007 - 2008 UW Graduate School Top Scholar Award

INVITED TALKS (since 2018)

Fassbender, A.J. "Observing and interpreting changes in ocean biogeochemistry." University of Washington, Program on Climate Change 20th Anniversary Seminar. Seattle, WA. September 15, 2021.

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Fassbender, A.J., S. Schlunegger, K.B. Rodgers, S. Po-Chedley. “How will 21st Century Technology Change the way we Observe the Marine Carbon Cycle?” University of Rhode Island, Vetlesen Distinguished Lecture Series. Narragansett, RI. January 29, **2020**.

Fassbender, A.J., S. Schlunegger, K.B. Rodgers, S. Po-Chedley. “How do natural and anthropogenic carbon pool interactions alter ocean carbon uptake.” Scripps Institution of Oceanography, Geoscience/Marine Chemistry & Geochemistry Seminar. San Diego, CA. December 2, **2019**.

Fassbender, A.J., S. Po-Chedley, S. Schlunegger, and K.B. Rodgers. “Interactions between natural and anthropogenic carbon pools alter annual ocean carbon uptake through seasonal processes.” Lawrence Livermore National Lab, Climate Science Seminar. Livermore, CA. August 21, **2019**.

Fassbender, A.J., Schlunegger, S., and K.B. Rodgers. “Sensitivity of the ocean carbon sink to natural and anthropogenic carbon cycle interactions.” UC Santa Barbara Interdepartmental Graduate Program in Marine Science Seminar. Santa Barbara, CA. April 23, **2019**.

Fassbender, A.J., Rodgers, K.B., Schlunegger, S., Palevsky, H.I., and C.L. Sabine. “Sensitivity of the ocean carbon sink to natural and anthropogenic carbon cycle interactions.” OCB Ocean Carbon Uptake in CMIP6 Models Synthesis and Intercomparison Workshop. Washington, DC. December 9, **2018**.

Fassbender, A.J., Rodgers, K.B., Schlunegger, S., Palevsky H.I., and C.L. Sabine. “Chemical feedbacks in the climate system: A modified marine carbon cycle under business-as-usual carbon dioxide emissions.” University of Montana Chemistry Department Seminar. Missoula, MT., October 22, **2018**.

2018 Goldschmidt Invited Speaker for the session *Carbon Storage in the Ocean now and over Time (071)*. Declined for scheduling reasons.

Fassbender, A.J., Rodgers, K.B., Schlunegger, S., Palevsky H.I., and C.L. Sabine. “Natural and Anthropogenic Carbon Cycle Interactions.” Moss Landing Marine Laboratories Seminar Series. Moss Landing, CA., April 12, **2018**.

SERVICE ACTIVITIES

COMMUNITY EVENTS

June 2022	Co-Organizer of NOAA Fisheries-BGC-Argo Workshop
June 2021	Co-Chair of the joint sponsored U.S. CLIVAR & OCB GO-BGC Scientific Workshop: Building a Community of Biogeochemistry Float Data Users . Virtual.
May 2021	Co-Chair of The Global Biogeochemical Argo Fleet: Knowledge to Action , a G7 Future of the Seas and Oceans Initiative event led by the U.S. NSF, NOAA, and NASA.
Feb. 16 - 21, 2020	Co-Chair of the Ocean Sciences Session: <i>Seasonal Cycles of Ocean Biogeochemistry and Ecosystems Under a Changing Climate</i> . San Diego, CA.
June. 24 - 27, 2019	Co-Chair of the OCB Summer Workshop Session on <i>Calcification and the Carbon Cycle</i> . Woods Hole, MA.
Feb. 12 - 16, 2018	Co-Chair of the Ocean Sciences Session: <i>Spatial and Temporal Variability of Seawater Chemistry in Coastal Ecosystems in the Context of Global Change</i> . Portland, OR.
Sept. 25 - 26, 2017	Co-Chair of the joint sponsored U.S. CLIVAR & OCB Ocean Carbon Hot Spots Workshop held at the Monterey Bay Aquarium Research Institute. Moss Landing, CA.
June 26 - 29, 2017	Co-Chair of the OCB Summer Workshop Session on <i>Physical-Biological-Biogeochemical Interactions</i> . Woods Hole, MA.
Oct. 14 - 16, 2016	Chair of the Chemical Oceanography MEeting: A BOttom-up Approach to Research Directions (COME ABOARD) Meeting held at UH Mānoa. Honolulu, HI.
2012 - 2013	Co-Organizer of the IGERT Program on Ocean Change Winter Seminar Series. UW.

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2009 - 2010 Science Program Co-Organizer of the 4th Annual Graduate Climate Conference. Pack Forest, WA.

REFEREE

2018 - 2019 Guest Associate Editor for *Frontiers in Marine Science* Coastal Ocean Processes topic on [*Spatial and Temporal Variability of Seawater Chemistry in Coastal Ecosystems in the Context of Global Change.*](#)

2018 Co-Guest Editor for Joint U.S. CLIVAR Variations & OCB News Edition on [*Frontiers in Western Boundary Current Research.*](#)

Journal Reviews Environmental Science & Technology, Limnology and Oceanography, Deep Sea Research Part I, Marine Chemistry, Global Biogeochemical Cycles, Estuaries and Coasts, Journal of Geophysical Research Oceans, Geophysical Research Letters, Oceanography, AGU Books, Frontiers in Marine Science, AGU Advances, Scientific Reports, Earth System Science Data, Biogeosciences, Nature

Proposal Reviews Sea Grant, NOAA OAP, NSF-Physical Oceanography, NSF-Chemical Oceanography, NSF-OTIC, Schmidt Ocean Institute