# Jessica S. Turner

**Curriculum Vitae**

December 12, 2022

University of Connecticut Avery Point
Department of Marine Sciences
1080 Shennecossett Rd, Groton, CT 06340
jturner@uconn.edu

## PROFESSIONAL PREPARATION & EDUCATION

2021-present, Postdoctoral Research Associate, University of Connecticut
2021, Ph.D. Marine Science, Virginia Institute of Marine Science, William & Mary
2015, M.S. Oceanography, University of Alaska Fairbanks
2013, B.A. Earth & Oceanographic Science, Bowdoin College

## PUBLICATIONS

### Peer-Reviewed Publications

**Turner, J.S.**, Fall, K.A., & Friedrichs, C. T. (2022) Clarifying water clarity: a call to use metrics best suited to corresponding research and management goals in aquatic ecosystems. Limnology and Oceanography Letters. https://doi.org/10.1002/lol2.10301 (In Press).

Kiko, R., Picheral, M., Antoine, D., Babin, M., Berline, L., Biard, T., Boss, E., Brandt, P., Carlotti, F., …**Turner, J.S.**, Waite, A., & Stemmann, L. (2022) A global marine particle size distribution dataset obtained with the Underwater Vision Profiler 5. Earth Systems Science Data Discussions, 14, 4315-4337, https://doi.org/10.5194/essd-2022-51

**Turner, J.S.**, Friedrichs, C.T., & Friedrichs, M.A.M. (2021) Long-term Trends in Chesapeake Bay Remote Sensing Reflectance: Implications for Water Clarity. Journal of Geophysical Research: Oceans, 126 (12), https://doi.org/10.1029/2021jc017959

**Turner, J.S.**, St-Laurent, P., Friedrichs, M.A.M., & Friedrichs, C.T. (2021) Effects of reduced shoreline erosion on Chesapeake Bay water clarity. Science of the Total Environment, 769, 145157, https://doi.org/10.1016/j.scitotenv.2021.145157

**Turner, J.S.**, Kellogg, L.K., Massey, G.M., & Friedrichs, C.T. (2019) Minimal effects of oyster aquaculture on water quality: Examples from southern Chesapeake Bay. PLoS ONE 14. https://doi.org/10.1371/journal.pone.0224768

**Turner, J.S.**, Pretty, J.L., & McDonnell, A.M.P. (2017) Marine particles in the Gulf of Alaska shelf system: spatial patterns and size distributions from in situ optics. Continental Shelf Research 145, 13-20 https://doi.org/10.1016/j.csr.2017.07.002

### Publications In Review

**Turner, J.S.** Dierssen, H., Schofield, O., Kim, H.H., Stammerjohn, S., Munro, D.R., & Kavanaugh, M. Later start of the growing season: 25-year trends in phytoplankton phenology in the marginal ice zone west of the Antarctic Peninsula. Global Change Biology. Submitted November 2022.

### Other Publications

**Turner, J.S.** (2021) Water clarity and suspended particle dynamics in the Chesapeake Bay: local effects of oyster aquaculture, regional effects of reduced shoreline erosion, and long-term

trends in remotely sensed reflectance. Ph.D. Dissertation. Virginia Institute of Marine Science, William & Mary. http://dx.doi.org/10.25773/v5-0ex4-0667

Kellogg, M.L., **Turner, J.S.**, Dreyer, J, and Massey, G.M. (2018) Environmental and Ecological Benefits and Impacts of Oyster Aquaculture. A final report to The Nature Conservancy. https://doi.org/10.25773/hdb1-xf91

Kellogg, M. L., **Turner, J.S.**, Dreyer, J., & Friedrichs, C.T. (2018) Environmental and Ecological Benefits and Impacts of Oyster Aquaculture: Addendum. An addendum to the final report to The Nature Conservancy. https://doi.org/10.25773/r01b-tg44

**Turner, J.S.** (2015) Investigating marine particle distributions and processes using in situ optical imaging in the Gulf of Alaska. M.S. Thesis. University of Alaska Fairbanks. https://www.proquest.com/dissertations-theses/investigating-marine-particle-distributions/docview/1750592106/se-2

## RESEARCH EXPERIENCE

### Research Experience

2021-Present: Sea ice, phytoplankton, and carbon in the Antarctic. University of Connecticut Department of Marine Sciences, Groton, Connecticut.

2016-2021: Long-term trends in Chesapeake Bay water clarity from in situ observations and satellite remote sensing. VIMS, Gloucester Point, Virginia.

2016-2020: Implications of decreased shoreline erosion for water clarity in the Chesapeake Bay: a modeling study. VIMS, Gloucester Point, Virginia.

2017- 2018: Effects of oyster aquaculture on water clarity in southern Chesapeake Bay. VIMS, Gloucester Point, Virginia.

2013-2015: Marine particle dynamics in the Gulf of Alaska. University of Alaska Fairbanks.

2013: Larval oyster shell imaging for morphology and Mg/Ca content. Bowdoin College, Brunswick, Maine.

2012: Clam Flat pH in Casco Bay, Maine. Friends of Casco Bay, South Portland, Maine.

### Experience at Sea – Major Oceanographic Cruises

2021: Palmer LTER Cruise, West Antarctic Peninsula, Nov 7-Dec 22 (NBP21-13).

2015: CLIVAR P16N Repeat Hydrography Cruise, Pacific Ocean, May 15-June 29.

2014: Seward Line Fall Cruise, Gulf of Alaska, September 11-20.

2014: Seward Line Spring Cruise, Gulf of Alaska, May 1-10.

### Professional Training

2019: Ocean Optics Course, University of Maine, Darling Marine Center, June.

2018-2019: Cross-Disciplinary Team Science Workshop, Virginia Sea Grant.

2018: Satellite Remote Sensing Training, Cornell University, June.

2015: Certificate in Science Teaching and Outreach, University of Alaska Fairbanks.

## GRANTS & FELLOWSHIPS

**Awards and Fellowships** (Total: $91,600)

2022: Limnology & Oceanography Letters Early Career Publication Honor ($3,000)

2022-2023: UConn Postdoc Seed Award ($2,000)

2020-2021: Virginia Space Grant Consortium Fellowship ($6,000)

2020-2021: Unit Scholarship Fund for Military Spouses ($2,500)

2019-2020: Commonwealth Coastal Research Fellowship, VIMS ($25,000)
2018-2019: Dean's Fellowship, VIMS ($6,000)
2016-2018: MacWhorter Family Fellowship, VIMS ($3,000 per year; $6,000 total)
2015: Dieter Family Marine Science Scholarship, University of Alaska Fairbanks ($3,900)
2015: Ken Turner Memorial Fellowship, University of Alaska Fairbanks ($2,200)
2014-2015: NSF GK-12 Changing Alaska Science Education Fellowship ($30,000)
2013: Community Service Award in Environmental Studies, Bowdoin College
2012: Psi Upsilon Environmental Studies Fellowship, Bowdoin College ($5,000)

**Travel Grants and Equipment Grants** (Total: $8,000)
2022: Mentoring Physical Oceanography Women to Increase Retention (MPOWIR) selected candidate for NASA Speaker Series, covered travel to NASA Jet Propulsion Laboratory, Pasadena, CA, November ($1,300)
2021: Academic Studies SMS Student Travel Grant, Spring 2021, Virginia Institute of Marine Science for registration for Liege Colloquium on Ocean Dynamics ($60)
2020: Sustainability Educator Grant, July 2020, toward virtual meeting registration costs for Earth Educators Rendezvous by the NAGT ($100)
2020: ASLO Ocean Sciences Meeting Registration Grant, Spring 2020, for travel to San Diego, CA ($380)
2019: Academic Studies SMS Student Travel Grant, Fall 2019, Virginia Institute of Marine Science for travel to Mobile, AL ($500)
2019: Equipment Trust Fund, Spring 2019, Virginia Institute of Marine Science. Funding for a projector for the Computational Visualization Lab ($1,860)
2018: Academic Studies SMS Student Travel Grant, Fall 2018, Virginia Institute of Marine Science for travel to Lisbon, Portugal ($500)
2018: Nichols Student Travel Fellowship, Fall 2018, Virginia Institute of Marine Science for travel to Lisbon, Portugal ($1,500)
2018: Academic Studies SMS Student Travel Grant, Spring 2018, Virginia Institute of Marine Science, for travel to Portland, OR ($500)
2017: CERF Student Travel Grant, Fall 2017, for travel to Providence, RI ($300)
2014: UAF Graduate School Travel Grant, Summer 2014, for travel to Woods Hole, MA ($1,000)

## PRESENTATIONS

### Invited Talks

2022: Studying impacts on water clarity in coastal systems using numerical modeling and remote sensing. Invited Talk, NASA Speaker Series via Mentoring Physical Oceanography Women to Increase Retention (MPOWIR), NASA Jet Propulsion Laboratory, Pasadena, CA, November 30.
2022: Satellite remote sensing of phytoplankton: overview, advantages and disadvantages. Invited Talk, Mixotrophs & Mixotrophy Working Group, Ocean Carbon and Biogeochemistry (Virtual), July 11.
2022: Water clarity, ocean color, and suspended sediments in coastal systems. Invited Talk, Woods Hole Oceanographic Institution (WHOI), Falmouth, MA, June 15.

2022: Water clarity, ocean color, and suspended sediments in coastal systems. Invited Talk, Horn Point Laboratory, University of Maryland Center for Environmental Sciences, Cambridge, MD, May 4.
2022: Water clarity, ocean color, and suspended sediments in coastal systems. Invited Talk, Ocean and Earth Sciences Department, Old Dominion University, Norfolk, VA, Feb 3.
2021: How do oyster aquaculture, shoreline armoring, and long-term change influence water clarity in the Chesapeake Bay? Invited Talk, Department of Marine and Coastal Sciences & Haskin Shellfish Research Laboratory, Rutgers University (Virtual). February 17.

**National & International Conference Presentations**

2022: Shifts in the timing of the phytoplankton growing season along the West Antarctic Peninsula. Ocean Optics XXV Conference, Vietnam, October 10.
2022: Interannual variability of satellite derived phytoplankton indices west of the Antarctic Peninsula 1997-2021. Ocean Sciences Meeting (Virtual). March 4.
2022: Long-term trends in Chesapeake Bay remote sensing reflectance: Implications for water clarity. Ocean Sciences Meeting (Virtual). March 2, 2022. Session CB04.
2021: Long-term Trends in Chesapeake Bay Water Clarity from Satellite Remote Sensing Reflectance. Coastal and Estuarine Research Federation (CERF) 2021 (Virtual). November 8.
2021: Impacts of sediment inputs from shoreline erosion on water clarity: results from a Chesapeake Bay modeling study. Advances in Marine Ecosystem Modelling and Research (AMEMR) 2021 (Virtual). July 13.
2021: Long-term estuarine water clarity from satellite remote sensing reflectance. Association for the Sciences of Limnology and Oceanography (ASLO) 2021 (Virtual). June 25.
2021: Long-term trends in Chesapeake Bay satellite remote sensing reflectance: Implications for water clarity. Ocean Carbon & Biogeochemistry (OCB) Workshop (Virtual). June 22.
2021: Effects of shoreline sediment erosion on estuarine water clarity: results from a Chesapeake Bay modeling study. Liege Colloquium on Ocean Dynamics (Virtual). May 18.
2021: Impacts of reduced shoreline erosion on estuarine water clarity: a Chesapeake Bay modeling study. Virtual Physics of Estuaries and Coastal Seas (V-PECS) Seminar Series. April 14. Link to recording: https://youtu.be/_p3GAoTxmxE
2020: Shoreline erosion impacts on Chesapeake Bay water clarity: an analysis of effects on light attenuation using a coupled hydrodynamic-biogeochemical model. Ocean Sciences Meeting, San Diego, CA, February.
2019: Minimal effects of oyster aquaculture on local water quality: Examples from southern Chesapeake Bay. Coastal and Estuarine Research Federation, Mobile, AL, November.
2019: Effects of shoreline erosion on Chesapeake Bay water clarity. Coastal and Estuarine Research Federation, Mobile, AL, November.
2018: Effects of oyster aquaculture on water clarity and suspended particle dynamics in Chesapeake Bay, Virginia. Particles in Europe, Lisbon, Portugal, October.
2018: Effects of sediment-enhanced organic matter sinking rates on Chesapeake Bay water clarity. AGU Fall Meeting, Washington, DC, December.
2018: Water clarity and suspended particle dynamics at oyster aquaculture sites in southwestern Chesapeake Bay. Ocean Sciences Meeting, Portland, OR, February.

2017: It's in the wash(load): Impacts on light attenuation ($K_d$) and primary production in a hydrodynamic biogeochemical model for Chesapeake Bay. Coastal and Estuarine Research Federation, Providence, RI, November.
2016: Processes determining the spatial distribution of optically-imaged particles in the Gulf of Alaska. Ocean Sciences Meeting, New Orleans, LA, February.
2014: Evaluating particle abundances and size distributions in the coastal northern Gulf of Alaska. Ocean Carbon & Biogeochemistry (OCB) Workshop, Woods Hole, MA, July.

**Regional Conference Presentations**
2022: Long-term trends in Chesapeake Bay remote sensing reflectance: Implications for water clarity. Chesapeake Community Research Symposium, Annapolis, MD, June 7.
2021: A high-resolution spatiotemporal investigation of Chesapeake Bay water clarity with implications for sediment transport and primary production. Virginia Space Grant Consortium 2021 Student Research Conference (Virtual), April 9.
2020: Water clarity impacts of sediment inputs from shoreline erosion in the Chesapeake Bay: a modeling study. Chesapeake Community Research Symposium, Annapolis, MD (Virtual). June 8.
2020: Two decades of Chesapeake Bay water clarity from satellite remote sensing. William & Mary Graduate Student Research Symposium, Williamsburg, VA (Virtual), March.
2018: Water clarity and suspended particle dynamics at oyster aquaculture sites in southwestern Chesapeake Bay. William & Mary Graduate Student Research Symposium, Williamsburg, VA, March.
2018: Water clarity and suspended particle dynamics at oyster aquaculture sites in southwestern Chesapeake Bay. Virginia Sea Grant Graduate Symposium, Richmond, VA, February.
2015: Evaluating particle abundances and size distributions with chlorophyll-*a* concentrations in the northern coastal Gulf of Alaska. Alaska Marine Science Symposium, Anchorage, AK, January.

**Home Institution Presentations**
2022: Do-it-yourself ocean color sensors. UConn Department of Marine Sciences Brown Bag Seminar, Groton, CT, October 19.
2022: Interannual variability of satellite derived phytoplankton indices west of the Antarctic Peninsula 1997-2021. VIMS Physical and Biological Sciences Seminar, Gloucester Point, VA, February 21.
2020: Water clarity in Chesapeake Bay: long-term trends from in situ data and satellite remote sensing. VIMS Physical Sciences Seminar, Gloucester Point, VA, November 9 (Virtual).
2020: Shoreline erosion impacts on Chesapeake Bay water clarity: a modeling study. VIMS Physical Sciences Seminar, Gloucester Point, VA, February 27.
2018: Water clarity and suspended particle dynamics at oyster aquaculture sites in southwestern Chesapeake Bay. VIMS Physical Sciences Seminar, Gloucester Point, VA, February.
2017: Marine particles in the Gulf of Alaska shelf system: spatial patterns and size distributions from in situ optics. VIMS Physical Sciences Seminar, Gloucester Point, VA, February.
2015: Marine particles from a new point of view: concentrations and size distribution over the Seward Line continental shelf in May 2014. UAF Institute of Marine Science Seminar, Fairbanks, AK, April 15.

2014: Investigating the influence of increasing freshwater input on carbon chemistry in Cook Inlet. UAF Institute of Marine Science Seminar, Fairbanks, AK, December 18.
2013: Investigating the impacts of ocean acidification on larval *Ostrea lurida* shell geochemistry using scanning electron microscopy. Bowdoin College, Brunswick, ME, May.

**Presentations by collaborators** (*=undergraduate student mentee first author)
2022: Munro, D., Dierssen, H., Schofield, H., Stammerjohn, S., **Turner, J.S.,** & Kim, H. Biological and physical controls on air-sea $CO_2$ exchange along the West Antarctic Peninsula. Invited Seminar for University of Connecticut Department of Marine Sciences, March 25.
2022: *Scrivner, C., Dierssen, H., Palacios,S. Vanhellemont, Q., Chlus, A. **Turner, J.S.**, Giardino, C., Castagna, A., & Russell, B. Discriminating Benthic Green Macroalgae From Seagrass Using Novel PRISMA Hyperspectral Satellite Imagery. Ocean Science Meeting (Virtual). March 3.
2018: *Hicks, E.M., Friedrichs, C.T., Massey, G.M., & **Turner, J.S.** Comparison of methods for analysis of silt/clay in the James River Estuary. Geological Society of America Southeastern Section 68th Annual Meeting, Charleston, SC, December.
2018: Friedrichs, C.T., **Turner, J.S.,** Friedrichs, M.A.M., Keisman, J., & Murphy, R. The changing nature of suspended solids in Chesapeake Bay and its relationship to trends in water clarity. American Geophysical Union, (AGU) Meeting Washington, DC, December.
2018: Bednarsek,N., Feely, R., Carter, B., Cross, J., **Turner, J.S.**, Jiminez-Hidalgo, I., & Naish, K. Pteropod shell dissolution in the North Pacific coinciding with total alkalinity anomaly. Ocean Sciences Meeting, Portland, OR, February.
2018: Pretty,J., **Turner, J.S.**, Picheral, M., & McDonnell, A. M. P. Linkages between zooplankton and marine particle distributions across a latitudinal transect of the Pacific Ocean. Ocean Sciences Meeting, Portland, OR, February.
2016: McDonnell, A.M.P. & **Turner, J.S.** Large particle distributions and processes across the P16N transect, US GEOTRACES Pacific Meridional Transect Planning Meeting. Invited Plenary Talk.
2016: McDonnell, A.M.P. & **Turner, J.S.** Large-scale patterns and drivers of the biological carbon pump: Insights from in situ camera observations across the Pacific Ocean. Ocean Sciences Meeting, New Orleans, LA, February.
2015: *Gordon, T., **Turner, J.S.** & McDonnell, A. M. P. Alaska Marine Science Symposium, Anchorage, AK, January.

## TEACHING & MENTORING EXPERIENCE
### Formal Teaching Experience
2022: Instructor and Teaching Assistant, Plankton, Aerosols, Clouds, and ocean Ecosystems (PACE) Satellite Training Course, University of Maryland Baltimore County and NASA Goddard Space Flight Center, August 1-5.
2020: Instructor of Record, Marine Science Teaching Fellowship, William & Mary, Williamsburg, VA. "Ocean Remote Sensing & Global Change." January-May.
2014-2015: Fellow, NSF Graduate STEM Fellow in K-12 Education (GK-12) Program, Fairbanks, AK. 5th & 6th grade science classes. August-June.

2013-2014: Teaching Assistant and Laboratory Instructor, University of Alaska Fairbanks, Fairbanks, AK. "The Oceans." August-May.

**Other Teaching Experience**

2022: VIMS, Co-Instructor, Remote Sensing Applications Workshop. Topic: "Remote sensing of water: Applications for Marine Science." October 12.

2022: Virginia Peninsula Community College, Invited Guest Instructor during field work for Introductory oceanography course. Topic: "Sediments and water quality in Queens Creek, York River, Chesapeake Bay." October 11.

2022: Supporting Marine Earth Observation Educators Workshop. Hosted by European Space Agency EUMETSAT/CMEMS/IOC/IODE/OTGA (Virtual), June.

2021: University of Connecticut, Invited Guest Lecturer, October. Upper-level undergraduate marine science methods course. Topic: "Remote Sensing: Background and application to coastal waters."

2021: VIMS, William & Mary Invited Guest Lecturer, April. Graduate level Phytoplankton Ecology course. Topic: "Remote sensing of phytoplankton ecology: a discussion."

2020: Earth Educators Rendezvous, NAGT, Virtual meeting, July.

2019: Virginia Peninsula Community College, Invited Guest Lecturer, April. Introductory oceanography course. Topic: "Measuring chlorophyll from space."

2018-2019: Cuyamaca College, Invited Guest Lecturer, April 2018 and April 2019. Introductory oceanography course. Topic: "Oyster aquaculture research."

2018-2019: Virginia Scientists and Educators Alliance (VA-SEA) Lesson Plan Program, Gloucester Point, VA.

**Mentoring Experience**

2021-2022: Charles Scrivner, California State University Monterey Bay Marine Science Major. UConn REU Summer 2021.

2020: Tom Sacco, Middlebury College Physics Major, VIMS REU Summer 2020.

2018-2020: Emma Hicks, Bryn Mawr College Geology Major, VIMS REU Summer 2018. CHSD Lab Employee 2019-2020.

2017-2019: Emily Mushlitz, W&M Geology Major, VIMS REU Summer 2017, CHSD Lab Employee 2017-2019.

2017-2018: Moira Taylor, W&M Geology Major, CHSD Lab Employee 2017-2018.

2014: Telayna Gordon, UAF Geology Major, McDonnell Lab Research Assistant Summer 2014.

**Lesson plans contributed to open access repositories**

2020: Measure surface reflectance and albedo with smartphone apps. Undergraduate activity. National Association of Geoscience Teachers (NAGT) Teach the Earth portal https://serc.carleton.edu/teachearth/activities/240694.html

2019: Expedition Sediments: Mud's Journey through the watershed. 9$^{th}$-grade Earth Science lesson plan. Virginia SEA program https://doi.org/10.25773/1PAH-7023 and National Association of Geosciences Teachers (NAGT) Teach the Earth portal https://serc.carleton.edu/teachearth/activities/240685.html

**SERVICE**

**Synergistic Service Activities**

2022-present: Member, NASA Ocean Biology Distributed Active Archive Center (OB.DAAC) User Working Group.
2022: Session Chair, Lead Organizer, "Advancing our understanding of biogeochemical coupling with models and observations in estuaries and coastal waters." Session CB16, Ocean Sciences Meeting (Virtual) February 21-March 4, 2022.
2021-present: Member, Education Committee of the International Ocean Color Coordinating Group (IOCCG)
2020-present: Early Adopter for upcoming NASA satellite mission PACE: Plankton, Aerosol, Cloud and ocean Ecosystems. https://pace.oceansciences.org/people_ea.htm?id=107
2019-present: Chesapeake Bay Program EPA Integrated Trends Analysis Team (ITAT) Group.
2019-present: Interagency Chesapeake Bay Working Group, NASA Applied Sciences.
2019-present: Mentoring Physical Oceanography Women to Increase Retention (MPOWIR).

**Reviewer for Journals**
2022-present: *Marine Geodesy, Ocean Modelling, Earth Science Reviews*
2021-present: *Scientific Reports*, *Water Resources Research, Estuaries and Coasts*
2020-present: *Journal of Geophysical Research: Oceans*, *Science of the Total Environment*

**Advisory Presentations for Organizations**
2022: Long-term trends in Chesapeake Bay remote sensing reflectance: Implications for water clarity. PACE Early Adopters E-Poster, PACE Applications Workshop, September 14.
2022: Remote sensing of water clarity in the Chesapeake Bay: advantages and disadvantages. Teleconference Remote Presentation for Chesapeake Bay Program Science and Technical Advisory Committee (STAC) Workshop, April 22.
2021: Effects of reduced shoreline erosion on Chesapeake Bay water clarity. Teleconference Remote Presentation for Chesapeake Bay Program Modeling Workgroup (MW), April.
2021: Effects of reduced shoreline erosion on Chesapeake Bay water clarity. Teleconference Remote Presentation for Integrated Trends Analysis Team (ITAT) Group, January.
2020: Teleconference remote presentation for PACE Early Adopters group.
2019: Minimal impacts of oyster aquaculture on water quality. Teleconference Remote Presentation for Integrated Trends Analysis Team (ITAT) Group, November.
2019: Hydrocolor App and potential for citizen science use. Teleconference Remote Presentation for NASA Chesapeake Bay Working Group of NASA Applied Sciences, November.

**Advisory Workshops**
2021: NASA PACE Science and Applications Team meeting, University of Connecticut, Groton, CT, October.
2019: NASA Interagency Chesapeake Bay Workshop, NASA Goddard Space Flight Center, Greenbelt, MD, August.
2017: Chesapeake Bay Program EPA Science and Technical Advisory Committee (STAC) Water Clarity Workshop, Solomons, MD, February.

**Community Involvement, Outreach, & Other Service Activities**
2022: Scientist Letter Writer, Letters to a Pre-Scientist.

2022: Minimal effects of oyster aquaculture on local water quality: Examples from southern Chesapeake Bay. Remote Presentation for Billion Oyster Project and 8th-graders in New York, NY. March 30.
2022: "Skype A Scientist" virtual presentations for two 5th grade classrooms in Issaquah, WA, March.
2021: "Chat Live with Researchers aboard an Antarctic Icebreaker." National Science Foundation Outreach Webinar. December 10, 2021. Recording: https://www.youtube.com/watch?v=D541qbZS32s&t=1s
2021-present: Research consultant for the Billion Oyster Project and middle school oyster garden research at Richmond County Yacht Club, Staten Island, NY.
2021: Member, Coastal and Estuarine Research Federation (CERF) Wellness Committee for conference planning for 2021 Virtual Meeting.
2020: "Skype A Scientist" virtual presentations for homeschooled students and two 4th grade classrooms.
2020: Interviewed on Chesapeake Bay Watershed issues for middle school capstone project for 8th-Grade student at Ware Academy in Gloucester, VA.
2020: "Water and beer clarity: a lesson on Beer's Law" Scientist-Walks-into-a-Bar Public Speaker, Williamsburg, VA (Virtual), March.
2019-2021: Chesapeake Bay Foundation Oyster Shell Recycling Program: VIMS Volunteer Coordinator, Gloucester Point, VA.
2019-present: Wikipedia contributor and reviewer, member of WikiProject Limnology & Oceanography and WikiProject Oceans.
2018-2019: Innovative Diversity Efforts Awards (IDEA) Grant Application Reviewer, William & Mary and VIMS.
2018: "Water clarity at oyster farms" Scientist-Walks-into-a-Bar Public Speaker, Newport News, VA, July.
2017: Three-minute Thesis (3MT) Competition, People's Choice Award Winner, William & Mary, Williamsburg, VA, October.
2017, 2019: Marine Science Day Volunteer, VIMS.
2017, 2019, 2020, 2021: Scorekeeper, Blue Crab Bowl, VIMS & Old Dominion University.

**Professional Affiliations**

American Geophysical Union (AGU)
Association for the Sciences of Limnology and Oceanography (ASLO)
Coastal and Estuarine Research Federation (CERF)
National Association of Geoscience Teachers (NAGT)
The Oceanography Society (TOS)
Community Surface Dynamics Modeling System (CSDMS)

**VIMS Service Activities**

2021: VIMS Commencement Student Speaker, William & Mary (Virtual), May.
2020-2021: VIMS Graduate Student Association Peer Reviewer.
2020-2021: VIMS Excellence in Mentoring Award Student Committee Member.
2018-2020: VIMS Awards Committee Graduate Student Representative.
2019: Organizer of Graduate Student writing retreat, VIMS Eastern Shore Laboratory, March.
2018-2019: VIMS Graduate Student Association Secretary.

2017-2018: VIMS Graduate Student Association Silent Auction Organizer.

## SKILLS

### Computational Skills

MATLAB – data visualization, processing, and statistical analysis.
Python – data visualization, satellite remote sensing data processing.
Google Earth Engine – remote sensing data visualization using javascript and cloud computing
ArcGIS – Spatial data analysis.
SeaDAS – NASA Ocean Color software for analysis of satellite data from multiple platforms.
Numerical modeling using the Regional Ocean Modeling System (ROMS).
ODV – Ocean data viewer program for data analysis and mapping
Microsoft Excel, Word, PowerPoint, and Publisher.
Online databases – transfer of data from buoys, weather stations, satellites.

### Instrumentation, Laboratory, & Field Capabilities

Water column

- LiCOR, HyperSAS/Hyperpro, PAR sensors for radiometry above and in water.
- AC-9 and AC-S absorption and beam-attenuation sensors.
- In situ chlorophyll & CDOM fluorometers.
- Phytoplankton fluorescence lifetime (PicoLiF), photosynthesis-irradiance curves (FiRE).
- In situ backscatter sensors including bb-9, Wet Labs ECO triplet, etc.
- ADV, ADP, ADCP acoustics for current velocity, turbulence, acoustic backscatter.
- LISST, UVP, and PICS optics and cameras for particle size distribution & characteristics.
- YSI datasondes: profiles, high-spatial-frequency mapping, long-term deployment.
- Water sampling using Niskin bottles and submersible pumps.
- TSM filtration & analysis for fixed & volatile solids.
- Zooplankton net tows using Bongo nets.
- Chlorophyll-a analysis, including filtration, extraction, and benchtop fluorometry.
- CDOM spectral absorption analysis using 0.2μm filtration & Coulter spectrophotometer.
- CTD rosette deployment, maintenance, and data processing.

Sediments and geology

- Sediment collection using GOMEX box-corer and cylindrical sub-cores.
- Sediment collection using large gravity corer.
- Sediment shear strength measurements with Blue-drop penetrometer and mini-vane.
- Grain size sieve-pipette (vertical settling) analysis for fixed & volatile solids.
- Sediment resistivity and magnetic susceptibility measurements, using sub-cores.
- pH meters and electrodes to evaluate sediments and soils.
- Scanning electron microscope (SEM) ESD/EBSD imaging, elemental analysis.

General field and lab capabilities

- New instrument troubleshooting and technical writing of user manuals.
- Citizen science training & synthesis, including smartphone applications e.g., Hydrocolor.
- Small vessel operation and trailering.
- Oxygen tender for dive operations.
- First aid and CPR certified.

### Languages

Spanish: advanced (reading, writing, speaking), Advanced-High Certificate from ACTFL
French: intermediate (reading, writing); basic (speaking)

**Open Access Data Repositories**

Turner, J.S., Fall, K.A., Friedrichs, C.T. (2022) "A Data Repository for Clarifying water clarity: a call to use metrics best suited to corresponding research and management goals in aquatic ecosystems (York River estuary case study dataset)." Data. William & Mary. https://doi.org/10.25773/ddh0-x307

Kiko, R. et al. (2021) "The global marine particle size distribution dataset obtained with the Underwater Vision Profiler 5 – version 1." PANGAEA. https://doi.pangaea.de/10.1594/PANGAEA.924375

Turner, J.S., St-Laurent, P., Friedrichs, M.A.M. & Friedrichs, C.T. "A Data Repository for Effects of Reduced Shoreline Erosion on Chesapeake Bay Water Clarity" (2021). Data. William & Mary. https://doi.org/10.25773/rh56-4g63

Turner, J.S., Massey, Grace M., Kellogg, M.L & Friedrichs, C.T. "A Data Repository for Minimal Effects of Oyster Aquaculture on Water Quality: Examples from Southern Chesapeake Bay" (2019). Data. William & Mary. https://doi.org/10.25773/wwva-tz18

**News Coverage of Peer-Reviewed Publications**

Ocean Carbon and Biogeochemistry (OCB). OCB Science Highlights. "Counterintuitive effects of shoreline armoring on estuarine water clarity." February 24, 2021. https://www.us-ocb.org/counterintuitive-estuarine-water-clarity/

Malmquist, David. VIMS News. "Study: oyster aquaculture has small but positive impact on Bay water quality." November 7. 2019. https://www.vims.edu/newsandevents/topstories/2019/oyster_water_quality.php

Wheeler, Timothy B. Original publication: Bay Journal. Accessible publication: The Southern Maryland Chronicle. Publisher/Editor: David M. Higgins II. "Oyster farms make slight improvement in water quality." December 10, 2019. https://southernmarylandchronicle.com/2019/12/10/oyster-farms-make-slight-improvement-in-water-quality/?

Chesapeake Research Consortium (CRC). "Study from VIMS finds Minimal Water Quality Impacts from Oyster Aquaculture." February 4, 2020. http://chesapeake.org/2020/02/04/oyster-aquaculture-impacts/

Global Aquaculture Alliance. "Oyster farm water quality and hydrodynamics in Chesapeake Bay." February 17, 2020. https://www.aquaculturealliance.org/advocate/oyster-farm-water-quality-and-hydrodynamics-in-chesapeake-bay/

Mayer, Liza. Aquaculture North America. "Study highlights impact of oyster farming on water quality." April 22, 2020. https://www.aquaculturenorthamerica.com/study-highlights-impact-of-oyster-farming-on-water-quality/

Kaplan, Rachel. Glacier Hub. "When Rivers Meet the Sea: Carbon Cycling in the Gulf of Alaska." August 3, 2017. https://glacierhub.org/2017/08/03/when-rivers-meet-the-sea-carbon-cycling-in-the-gulf-of-alaska/