

Heidi Dierssen

Professor, Optical Oceanographer

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PROFESSIONAL PROFILE

Dr. Dierssen is a professor and optical oceanographer who specializes in developing and using ocean color imagery and data to understand ecological and air-sea processes from seagrasses to whitecaps. She served as the Science and Applications Team Leader for the NASA Plankton Aerosol Cloud and ocean Ecosystem (PACE) satellite mission and contributes to international advisory and working groups related to hyperspectral aquatic remote sensing and imaging spectroscopy.

EDUCATION

| | | | | |
|---|-------------------|----------------------|-----------|-----------|
| Stanford University, | Stanford, CA | Biology with Honors | B.S./M.S. | 1989 |
| Advisor: Harold Mooney. Comparison of Male and Female Function in a Dioecious Shrub | | | | |
| University of California, Santa Barbara, | Santa Barbara, CA | Geography | Ph.D. | 2000 |
| Advisor: Raymond Smith. Ocean Color Remote Sensing along the Antarctic Peninsula | | | | |
| Moss Landing Marine Laboratory, | Moss Landing, CA | Optical Oceanography | Postdoc | 2001-2002 |
| Advisor: Richard Zimmerman. Remote Sensing of Seagrass in the Bahamas Banks | | | | |
| Monterey Bay Aquarium Research Inst., | Moss Landing, CA | Optical Oceanography | Postdoc | 2002-2003 |
| Advisor: John Ryan. Imaging Spectroscopy of Algal Blooms in Monterey Bay | | | | |

APPOINTMENTS

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| 2016-present | Professor, Dept. of Marine Sciences/Geography. University of Connecticut. |
| 2018-2019 | Fulbright Scholar & Visiting Scientist, Flanders Marine Institute (VLIZ). Belgium. |
| 2011-2016 | Associate Professor. Dept. of Marine Sciences/Geography. University of Connecticut. |
| 2005-2011 | Assistant Professor. Dept. of Marine Sciences/Geography. University of Connecticut. |
| 2011-2012 | Visiting Professor. Norwegian University of Science and Technology, Trondheim Biological Station, Norway. |
| 2003-2005 | Assistant Professor in Residence. Dept. of Marine Science. University of Connecticut. |
| 1999-2000 | Visiting Research Scientist. Rosenstiel School for Marine and Atmospheric Science. University of Miami. |
| 1997-2000 | NASA Earth System Science Fellow. Institute for Computational Earth System Science. University of California Santa Barbara. |

HONORS AND AWARDS

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| 2020 | UConn Provost Award for Excellence in Teaching. |
| 2020 | NASA Achievement Award: Coral Reef Airborne Laboratory (CORAL) Mission Team |
| 2020 | Elected to the Connecticut Academy of Sciences and Engineering (CASE) |
| 2018 | Fulbright Scholar to Belgium. Flanders Marine Institute |
| 2018 | NASA Achievement Award: Snow, Water Imaging Spectrometer (SWIS) Instrument Team |
| 2016 | University of Connecticut Award for Excellence in Research |
| 2016 | NASA Achievement Award: Portable Remote Imaging Spectrometer Mission (PRISM) Instrument Team |

2006 Best Speaker Award. Ocean Optics Conference. Presentation of Bell Award
2002 MBARI Postdoctoral Fellow
2000 Complex Systems Summer School. Santa Fe, NM.
1999 California Space Grant Fellow
1997 Complex Systems Summer School, Santa Fe Institute
1997 NASA Earth System Science Fellow

SYNERGISTIC ACTIVITIES

2021-present Member, IOCCG Task Force on Remote Sensing of Marine Litter and Debris.
2020-present Member, Aquatic Cross-Mission Exchange (ACME).
2020-present Member, Australia, International Science Advisory Team for Australian Aquawatch Mission to provide near real-time updates and predictive forecasting – a weather service for water quality.
2020-present Member, NASA, Surface Biology and Geology Mission (SBG) Space-based Imaging Spectroscopy and Thermal Mission.
2020-present Member, Scientific Committee on Ocean Research (SCOR) Working Group C-GRASS coordinating seagrass research.
2019-present Member, Ocean Sciences Across the Solar System Working Group. NASA.
2022-present Member, Japan, Ministry of the Environment, Japan (MOEJ). International Expert Working Group on Marine Plastic Monitoring Methods using Remote Sensing Technologies (SmartMLRST)
2020-2024 Lead, NASA Plankton Aerosol Cloud and Ocean Ecosystem (PACE) Mission Science and Applications Team. Lead the 100+ team members producing aquatic and atmospheric algorithms and products from OCI, SPEXone, HARP2.
2023-2024 Co-lead. Network for Ocean Worlds (NOW) Annual Retreat: Exploring the Science and Technology of Ocean Worlds Across the Solar System: Missions, technologies and instruments between Earth and Planetary sciences. August 19-24, 2023. Wrigley Marine Science Center Catalina Island, CA.
2021-2024 Lead, International Ocean Colour Coordinating Committee (IOCCG) Working Group on Benthic Reflectance Measurements. Producing an international consensus report for the community.
2018-2023 Member/Lead, NASA Advanced Strategic Planning for NASA Ocean Biology and Biogeochemistry.
2023 Member, Science Peer Review Board, NASA Surface Biology and Geology Mission. August 2023.
2021 Member, STEREO III Evaluation: Societal Impact Workshop. Belgium. 10/5/2021.
2018-2022 Member, Alliance for Coastal Technologies. Hyperspectral Imaging of Coastal Waters Working Group.
2019-2020 Chair, International Foresight Workshop. Hyperspectral Data Needs for Discrimination of Phytoplankton Groups. Euromarine Funded.
2019-2020 Member, Remote Sensing & Mapping of Seagrass Expert Workshop. Oxford. Pew Charitable Trust.
2019-2020 Co-Chair. Townhall. Hyperspectral phytoplankton community structure. Ocean Optics.
2019 Panel, Townhall on Marine Litter, ESA Living Planet. Milan.
2015-2017 Chair, NASA Ocean Biology and Biogeochemistry Advance Science Plan Committee for 2017-2027.
2015-2017 Member, Steering Committee and Panel. Belgian Science Policy Office.
2016-2017 Member, NASA Carbon Cycle and Ecosystems Area Priority Science Questions and Measurement Targets Working Group.
2013-2017 Member, IOCCG Committee.
2016-2017 Member, NASA Earth Science Senior Review Subcommittee.
2008-2011 Member, National Academy of Science. Committee on Earth Studies, Space Studies Board.
2008-2010 Chair, International Ocean Optics XX Conference. Anchorage, Alaska.
2009 Member, Naval Research Laboratory. External Review Panel for the Battlespace Environments Focus Area 6.1/6.2 (Ocean Technology) Research Program Stennis Space Center.

2005-2007 Member, NASA Biological Oceanography and Biogeochemistry Advance Plan Working Group

SCIENCE MISSION TEAM MEMBER

2022-present Surface Biology and Geology (SBG) Satellite Mission Team Member. NASA
2014-2024 Phytoplankton Aerosol Cloud and ocean Ecosystem (PACE) Mission Member/Lead. NASA
2018-2021 Surface Biology and Geology (SBG) Algorithm & Aquatic Science Working Groups. NASA
2015-2018 Earth Venture Coral Reef Ecosystem (CORAL) Airborne Campaign. NASA.
2014-2017 O₂/N₂ Ratio and CO₂ Airborne Southern Ocean (ORCAS) Experiment. NSF/NASA
2015-2017 Snow Water Imaging Spectrometer (SWIS) Hyperspectral Cubesat Mission. NASA
2010-2017 Airborne Portable Remote Imaging SpectroMeter (PRISM) Development Team. NASA
2010-2014 Multiple University Research Initiative (MURI). Dynamic Camouflage. Office of Naval Research.
2007-2016 Hyperspectral Infrared Imager (HyspIRI) Satellite Team. NASA.
2007-2009 Southern Ocean Gas Exchange Experiment (SOGasEx). NASA, NOAA.
2004-2008 Moderate Resolution Imaging Spectrometer Mission (MODIS). NASA.
2001-2002 Coastal Benthic Optical Properties (CoBOP). Naval Research Laboratory. Office of Naval Research.
1994-2000 Western Antarctic Peninsula Long Term Ecological Research Project (PAL-LTER). NSF.

UNIVERSITY SERVICE

Strategic Planning

2021-2022 Chair, Marine Sciences Strategic Planning Committee
2016-2017 Member, Marine Sciences Diving Program (MSDP) Strategic Plan
2013-2014 Member, Strategic Planning. College of Liberal Arts and Sciences (CLAS) Academic Planning Committee

Promotion, Tenure, and Reappointment (PTR)

2022-present Member, Marine Sciences PTR Committee
2016-2021 Member, Dean's PTR Committee for CLAS
2013-2014 Chair, Marine Sciences PTR Committee
2012-2013 Member, Marine Sciences PTR Committee

Courses and Curriculum

2012-present Chair, Department of Marine Sciences Courses and Curriculum
2012-present Member, CLAS Courses and Curriculum
2015-present Chair, Bachelor of Science Subcommittee for CLAS
2020-2021 Member, Ocean Engineering Certificate Committee
2010-2015 Liaison, University Early College Experience (ECE)

Faculty Search Committees

2023-2024 Chair. Assistant Professor. Marine Sciences.
2019-2020 Assistant Professor in Residence. Physics Department
2013-2014 Head/Director. Marine Sciences
2012-2013 Cluster Hire for 3 Assistant Professors. Marine Sciences
2010-2011 Physical Oceanography Assistant Professor. Marine Sciences

International Evaluation Committees for Faculty Recruitment

2017 Biological Oceanographer. University of Bergen Norway
2015 Marine Biologist. Norwegian Technical University

2012 Marine Biologist. Norwegian Technical University

UNIVERSITY TEACHING

Courses

2024 MARN 4010/5010. Biological Oceanography (Storrs and Avery Point)
2008-2024 MARN 3505/5505. Remote Sensing of Marine Geography (Storrs and Avery Point)
2021-2024 MARN 1002E/1003E. Introduction to Oceanography with Environmental Literacy (Avery Point)
2007-2020 MARN 1002/1003. Introduction to Oceanography (Storrs and Avery Point)
2016 MARN 4002. Science and the Coastal Environment (Avery Point)
2003-2012 MARN 3014. Marine Biology (Storrs and Avery Point)
2009,12,15 MARN 5898. Light and Photosynthesis in Aquatic Ecosystems
2007 MARN 210. Coastal Systems Science I (Avery Point)
2006 MARN 260/380. Biological Oceanography (Storrs)

National/International Teaching

2023 Network for Ocean Worlds (NOW) Annual Retreat: Exploring the Science and Technology of Ocean Worlds Across the Solar System. August 19-24, 2023. Wrigley Marine Science Center, Catalina Island, CA
2017 Guest Instructor, Ocean Optics Summer Bootcamp Univ. Maine. Darling Marine Station, Maine
2016 Instructor, International Ocean Colour Coordinating Group Third Summer Lecture Series in Villefranche, France
2014 Instructor, University Centre of Svalbard (UNIS) for field course on aerosols. Svalbard.
2013 Instructor, University Centre of Svalbard (UNIS) for field course on ocean color. Svalbard.

Teacher Training Workshops Completed

2021 Less Listening, More Active Participation. UCONN.
2021 Preparing for the Variety of Learners' Needs, Abilities, and Interests with Universal Design for Learning. UCONN
2020 LockDown Browser & Respondus Monitor Training. UCONN.
2020 Using Discussion Boards in Online Teaching. UCONN.
2020 Train the Trainers: Tools & techniques for teaching about Copernicus marine data. EUMETSAT. 30-hour online training course. Certificate 10 July 2020.

UNIVERSITY SUPERVISION & MENTORING

Major Advisor

Ph.D. students: D. Aurin (2010), K. Randolph (2015), B. Russell (2016), E. Scrivner (exp. 2028)
M.S. students: C. Buonassissi (2009), K. Bostrom (2011), M. Mirhakak (2021), G. Trolley (2023), X. Warren (exp. 2026)
Postdoctoral scholars: J. Turner (2021-2024), S. Garaba (2015-2018), K. Randolph (2016-2018), B. Russell (2016-2019), F. Henderikx-Freitas (2016-2017)
International scholars: David G. Rivas (2022-2024) Trevor Platt International Scholar

Associate Advisor

Ph.D. students: A. Branco (2006), H. Brown (2017, EEB), M. Fogarty (2018), V. Haynes (2019), H. Frye (2023, EEB)
M.S. students: C. Zimmerman (2007, CAHNR), R. Perry (2015), A. Chlus (2015 CAHNR), J. Grzywacz (2021)

Undergraduate Project Advising

REU Students: D. Zitomer (2024), C. Scrivner (2021), E. Perry Summer (2017)
Independent Study Projects: W. Huffman (2017), T. Bateman (2015-2016), C. Kunz (2010-2012), B. Ritchie (2009-2010), M. McNichol (2008)

International/National Thesis Review

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|------|---|------|---|
| 2023 | University of Laval, Quebec Canada Ph.D. | 2019 | University of Gent, Belgium. M.S. |
| 2023 | Norwegian Technical University, Ph.D. | 2018 | University of Queensland, Australia, Ph.D. |
| 2021 | King Abdullah University of Science & Technology, Saudi Arabia, Ph.D. | 2015 | Curtin University, Australia, Ph.D. |
| 2021 | Norwegian Technical University, Norway, Ph.D. | 2015 | University of Tasmania, Tasmania, Ph.D. |
| 2020 | James Cook University, Australia, Prospectus | 2014 | Capetown University, South Africa. Ph.D. |
| 2019 | University of Massachusetts Boston, USA. Ph.D. | 2011 | Norwegian Technical University, Norway. Ph.D. |

GRANTS

Submitted

NASA/National Aeronautics & Space Administration. Lead PI. "Assessment of floating marine debris remote sensing using hyperspectral features in the near and shortwave infrared" 1/1/2025 – 12/31/2027. \$700K.

NIUVT (Navy). Co-I. "Coastal and Offshore Biogeochemical Oceanographic Observatories Enabled with Distributed Sensing." 1/15/2025.

Current

NASA/National Aeronautics & Space Administration. Lead PI. "Exploring the role of phytoplankton community composition in air-sea carbon exchange west of the Antarctic Peninsula through field and satellite measurements" \$1.7M. 10/1/23-9/30/26.

NASA/National Aeronautics & Space Administration. Lead PI. "Advancing Remote Sensing of Microplastics on the Surface Ocean." \$520K. 3/1/21-2/29/25.

NSF; Co-I. "Research Experience for Undergraduates (REU) Site Mystic Aquarium: Collaborative Research: Investigating the Consequences of Global Change on Marine Animals and their Ecosystem." 03/01/2017 – 02/29/2024.

Past 5 Years

NASA/National Aeronautics & Space Administration. Lead PI. "Quantifying linkages between sea ice, phytoplankton community composition, and air-sea carbon fluxes west of Antarctic Peninsula through field, airborne and satellite measurements." \$900K. 7/1/2020-6/30/2024.

NASA/National Aeronautics & Space Administration. Lead PI. "PACE Science Team Leader." \$400K 7/1/2020-6/30/2024.

NASA/National Aeronautics & Space Administration. Collaborator. "Commercial Sensor Evaluation for Detection and Mapping of Snow Algae." 2021.

NASA/National Aeronautics & Space Administration. Co-I. "FINESST: Evaluation of hyperspectral techniques for quantifying taxonomic and functional diversity in coastal and shrubland ecosystems." 9/1/2020-8/31/2023.

NASA/National Aeronautics & Space Administration; "PACE Science Team: Atmospheric Correction over Bright Water Targets with Non-Negligible Radiances in the Near Infrared"; \$431,771; 11/19/2014-11/18/2019; 1 summer month in 2015, 2016, and 2017

NASA/National Aeronautics & Space Administration; "Hyperspectral remote sensing of coral reefs: Assessing the potential for spectral discrimination of coral symbiont diversity" \$232,740; 11/16/2014-11/18/2019; 0.5 summer month in 2016, 2017

NASA/National Aeronautics & Space Administration; “Coral Reef Airborne Laboratory” \$469,517; 08/11/2015-08/11/2019; 0.5 summer month in 2015, 2016, 1 month 2017

PUBLICATIONS

Peer-reviewed Journal Articles

In prep

*Frye, H., E. Scrivner, B. Russell, Dierssen, H.M., In prep. Methods for quantifying the spectral variation within terrestrial and aquatic datasets and imagery. *Remote Sensing*.

Published

Goddijn-Murphy, L., V. Martínez-Vicente, H.M. Dierssen, V. Raimondi, E. Gandini, R. Foster, V. Chirayath. 2024. Emerging technologies for remote sensing of floating and submerged plastic litter. *Remote Sensing*. 16(10): 1770. <https://doi.org/10.3390/rs16101770>.

*Turner, J.S., Dierssen, H., Schofield, O., Kim, H.H., Stammerjohn, S., Munro, D.R., & Kavanaugh, M. 2024. Changing phytoplankton phenology in the marginal ice zone west of the Antarctic Peninsula. *Marine Ecology Progress Series*. 734:1-21. DOI: <https://doi.org/10.3354/meps14567>

Cetinic, I, C.S. Rousseaux, et al. 2024. Phytoplankton composition from sPACE: requirements, opportunities, and challenges. *Remote Sensing of Environment* 302 (2024) 113964. <https://doi.org/10.1016/j.rse.2023.113964>

*Castagna, A., H.M. Dierssen, L.I. Devriese, G. Everaert, E. Knaeps, and S. Sterckx. 2023. Evaluation of plastic detection algorithms over land and aquatic floating targets from hyperspectral field and airborne data. *Remote Sensing of Environment*. 298: 113834. DOI: 10.1016/j.rse.2023.113834

Dierssen, H.M., M. Gierach, L.S. Guild, A. Mannino, J. Salisbury, S. Schollaert Uz, J. Scott, P.A. Townsend, K. Turpie, M. Tzortziou, E. Urquhart, R. Vandermeulen, and P.J. Werdell. 2023. Synergies between NASA’s Hyperspectral Aquatic Missions PACE, GLIMR, and SBG: Opportunities for new science and applications. *Journal of Geophysical Research*. 128(10): e2023JG007574. DOI: 10.1029/2023JG007574

*Russell, B., Dierssen, H. M. 2023. Underwater Spectral Reflectance Measurements: Reflectance Standard Submersion Factor and its Impact on Derived Target Reflectance. *Applied Optics*. 62: 6299-6306. <https://doi.org/10.1364/AO.493709>

Dierssen, H.M., R.A. Vandermeulen, B.B. Barnes, A. Castagna, E. Knaeps, and Q. Vanhellemont. 2022. QWIP: A Quantitative Metric for Quality Control of Aquatic Reflectance Spectral Shape using the Apparent Visible Wavelength. *Frontiers in Remote Sensing*. <https://doi.org/10.3389/frsen.2022.869611>

Chirayath, V., E. Bagshaw, K. Craft, H. Dierssen, D. Kline, D. Lim, M. Malaska, O. Pizarro, S. Purkis, D. Schroeder, P. Sobron, S. Waller, and D. Winebrenner. 2022. Oceans across the solar system and the search for extraoceanic life: Technologies for remote sensing and in situ exploration. *Oceanography* 35(1):54–65, <https://doi.org/10.5670/oceanog.2021.416>.

Glass, J.B., H.M. Dierssen, C.R. Glein, B.E. Schmidt, and D.P. Winebrenner. 2022. Defining and characterizing habitable environments in ocean world systems. *Oceanography* 35(1):30–38, <https://doi.org/10.5670/oceanog.2021.414>.

* Castagna, A., Amadei Martínez, L., Bogorad, M., Daveloose, I., Dasseville, R., Dierssen, H. M., Beck, M., Mortelmans, J., Lavigne, H., Dogliotti, A., Doxaran, D., Ruddick, K., Vyverman, W., and Sabbe, K. 2022. Optical and biogeochemical properties of Belgian inland and coastal waters, *Earth Syst. Sci. Data* <https://doi.pangaea.de/10.1594/PANGAEA.940240> (dataset).

*Castagna, A., H. Lavigne, H. M. Dierssen, K. Ruddick, E. Organelli, M. Bogorad, J. Mortelmans, W. Vyverman, and K. Sabbe. 2021. Optical Detection of Harmful Algal Blooms in the Belgian Coastal Zone: A Cautionary Tale of Chlorophyll c3. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2021.770340>

Dierssen, H.M., S. Ackleson, K. Joyce, E. Hestir, A. Castagna, S. Lavender, and M. McManus. 2021. Living up to the Hype of Hyperspectral Aquatic Remote Sensing: Science, Resources and Outlook. *Frontiers in Environmental Science*. 9, 134. <https://doi.org/10.3389/fenvs.2021.649528>

*Milton Brown, H., M. Rubega and H.M. Dierssen. 2021. The light's in my eyes: optical modeling demonstrates wind is more important than sea surface-reflected sunlight for foraging herons. *PeerJ* 9:e12006 <https://doi.org/10.7717/peerj.12006>

Menden-Deuer, S., W. Slade, and H.M. Dierssen. 2021. Promoting Instrument Development for New Research Avenues in Ocean Science: Opening the Black Box of Grazing. *Frontiers in Environmental Science*, 26 <https://doi.org/10.3389/fmars.2021.695938>

Cause-Nicholson, K. et al. 2021. NASA's surface biology and geology designated observable: A perspective on surface imaging algorithms. *Remote Sensing of the Environment*. 257: 112349. <https://doi.org/10.1016/j.rse.2021.112349>.

Khan, A. L., H. Dierssen, T. Scambos, J. Höfer, and R.R. Cordero. 2021. Spectral Characterization, Radiative Forcing, and Pigment Content of Coastal Antarctic Snow Algae: Approaches to Spectrally Discriminate Red and Green Communities and Their Impact on Snowmelt. *The Cryosphere*. 15, 133-148.

Garcia, R., Z.P. Lee, Barnes, B.B., Hu, C., Dierssen, H.M., Hochberg, E. 2020. Benthic classification and IOP retrievals in shallow water environments using MERIS imagery. *Remote Sensing of the Environment*. 249: 112015. <https://doi.org/10.1016/j.rse.2020.112015>

Dierssen, H.M., A. Bracher, V. Brando, H. Loisel, and K. Ruddick. 2020. Data needs for hyperspectral detection of algal diversity across the globe. *Oceanography*. 33: 1. 74-79.

Dierssen, H. M., and *Garaba, S. P. 2020. Bright Oceans: Spectral Differentiation of Whitecaps, Sea Ice, Plastics, and Other Flotsam, in: *Recent Advances in the Study of Oceanic Whitecaps: Twixt Wind and Waves*, edited by: Vlahos, P., and Monahan, E. C., Springer International Publishing, Cham, 197-208.

*Castagna, A., S. Simis, H. Dierssen, Q. Vanhellemont, K. Sabbe, and W. Vyverman. 2020. Extending Landsat 8: Retrieval of an orange contra-band for inland water quality applications. *Remote Sensing*. 12(4), 637; <https://doi.org/10.3390/rs12040637>

*Russell, B.J., E. Hochberg, and H.M. Dierssen. 2019. Water Column Optical Properties of Pacific Coral Reefs Across Geomorphic Zones and in Comparison to Offshore Waters. *Remote Sensing*. 11, 1757; doi:10.3390/rs11151757

Dierssen, H.M., K.J. *Bostrom, A. Chlus, K. Hammerstrom, D. Thompson and Z.P. Lee. 2019. Pushing the Limits of Seagrass Remote Sensing in the Turbid Waters of Elkhorn Slough, California. *Remote Sensing*. 11(14), 1664; <https://doi.org/10.3390/rs11141664>

*Freitas, F. H., and H. M. Dierssen. 2019. Evaluating the seasonal and decadal performance of red band difference algorithms for chlorophyll in an optically complex estuary with winter and summer blooms. *Remote Sensing of the Environment* 231: 111228.

Chowdhary J, Zhai P, Boss E, Dierssen HM, Frouin RJ, Ibrahim AI, Lee Z, Remer LA, Twardowski M, Xu F. 2019. Modeling atmosphere-ocean radiative transfer: A PACE mission perspective. *Frontiers in Earth Science* 7:100.

Frouin RJ, Franz BA, Ibrahim A, Knobelspiesse K, Ahmad Z, Cairns B, Chowdhary J, Dierssen HM, Tan J, Dubovik O. et al. 2019. Atmospheric correction of satellite ocean-color imagery during the PACE era. *Frontiers in Earth Science* 7:145.

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- Remer LA, Davis AB, Mattoo S, Levy RC, Kalashnikova O, Chowdhary J, Knobelspiesse KD, Xu X, Ahmad Z, Boss E. et al. 2019. Retrieving aerosol characteristics from the PACE mission, Part 1: Ocean Color Instrument. *Frontiers in Earth Science* 7:152.
- Remer LA, Knobelspiesse KD, Zhai P-W, Xu F, Kalashnikova O, Chowdhary J, Hasekamp OP, Dubovik O, Wu L, Ahmad Z. et al. 2019. Retrieving aerosol characteristics from the PACE mission, Part 2: Multi-angle and polarimetry. *Frontiers in Environmental Science* 7:94.
- *Castagna A, Johnson BC, Voss K, Dierssen HM, Patrick H, Germer TA, Sabbe K, Vyverman W. 2019. Uncertainty in global downwelling plane irradiance estimates from sintered polytetrafluoroethylene plaque radiance measurements. *Applied Optics* 58:4497–4511.
- Dierssen HM. 2019. Hyperspectral measurements, parameterizations, and atmospheric correction of whitecaps and foam from visible to shortwave infrared for ocean color remote sensing. *Frontiers in Earth Science* 7:14. doi: 10.3389/feart.2019.00014
- Hedley, J.D., *M. Mirhakak, A. Wentworth, H.M. Dierssen. 2018. Influence of three-dimensional coral structures on hyperspectral benthic reflectance and water-leaving reflectance. *Applied sciences*. 8: 2688. doi:10.3390/app8122688
- Bender, H. P. Mouroulis, H.M. Dierssen, T. Painter, D. Thompson, C. Smith, J. Gross, R. Green, J. Haag, B. Van Gorp, and E. Diaz. 2018. Snow and Water Imaging Spectrometer (SWIS): Mission and instrument concepts for Earth-orbiting CubeSats. *Journal of Applied Remote Sensing*. JARS 12(4): 180127. doi: 10.1117/1.JRS.12.044001
- *Garaba, S., J. Aitken, S. Boyan, H.M. Dierssen, L. Lebreton, O. Zielinski, and J. Reisser. 2018. Sensing ocean plastics with an airborne hyperspectral shortwave infrared imager. *Environ. Science & Technology*. 52:11699-11707. doi:10.1021/acs.est.8b02855
- *Perry, R., J. Vaudrey, and H.M. Dierssen. 2018. Nutrient dynamics and long range transport of floating seagrass wracks in Greater Florida Bay. *Estuaries and Coastal Shelf Science*. 209:7-17. doi:10.1016/j.ecss.2018.05.006.
- Karger F.M. et al. 2018. Satellite Sensor Requirements for Monitoring Essential Biodiversity Variables of Coastal Ecosystems. *Ecological Applications*. doi:10.1002/eap.1682
- *Russell, B.J. and H.M. Dierssen. 2018. Color change in the Sargassum Crab, *Portunus sayi*: Response to diel illumination cycle and background albedo. *Marine Biology* 165(28):1-13. doi:10.1007/s00227-018-3287-1.
- Stephens, B., M. Long, R. Keeling, E. Kort, C. Sweeney, E. Apel, E. Atlas, S. Beaton, J. Bent, N. Blake, J. Bresch, J. Casey, B. Daube, M. Diao, E. Diaz, H. Dierssen, et al. 2017: The O₂/N₂ Ratio and CO₂ Airborne Southern Ocean (ORCAS) Study. 2018. *Bull. Amer. Meteor. Soc.* doi:10.1175/BAMS-D-16-0206.1: 381-402.
- *Fogarty, M.C., M.R. Fewings, A.C. Paget, H.M. Dierssen. 2018. The influence of a sandy substrate, seagrass, or highly turbid water on albedo and surface heat flux. *J. Geophys. Res Oceans*. doi:10.1002/2017JC013378
- *Garaba, S. and H.M. Dierssen. 2018. An airborne remote sensing case study of synthetic hydrocarbon detection using short wave infrared absorption features identified from marine-harvested macro- and microplastics. *Remote Sensing of the Environment*. 205:224-235. doi:10.1016/j.rse.2017.11.023
- Hedley, J. *B. Russell, *K. Randolph, R.M. Vásquez-Elizondo and H. Dierssen. 2017. Hyperspectral mapping of seagrass leaf area index and species by a physics-based approach: do sensitivity analyses and practical application agree? *Frontiers in Marine Science*. doi: 10.3389/fmars.2017.00362
- *Khan, A., H. Dierssen, J. Schwarz, C. Schmitt, A. Chlus, M. Hermanson, T. Painter, and D. McKnight. 2017. Impacts of coal dust from an active mine on the spectral reflectance of Arctic surface snow in Svalbard, Norway. *J. Geophys. Res. Atmos.* 122(3):1767-1778. doi:10.1002/2016JD025757

*Randolph, K., H.M. Dierssen, A. Cifuentes, E. Monahan, W. Balch, and C. Zappa. 2017. Novel methods for optically measuring whitecaps under natural wave breaking conditions. *J. Atmosph. & Oceanic Tech.* 34(3): p. 533-554. DOI: <http://dx.doi.org/10.1175/JTECH-D-16-0086.1>

Brady, P., A. Gilerson, G. Kattawar, J. Sullivan, M. Twardowski, H. Dierssen, and M.E. Cummings. 2016. Response to Comment on "Open-ocean fish reveal an omnidirectional solution to camouflage in polarized environments." *Science*: 353(6299): 552. DOI:10.1126/science.aaf5018

*Russell, B.J., H.M. Dierssen, T.C. LaJeunesse, K.D. Hoadley, M.E. Warner, D.W. Kemp, T.G. Bateman. 2016. Spectral Reflectance of Palauan Reef-Building Coral with Different Symbionts in Response to Elevated Temperature. *Remote Sens.* 8(3); 164-183; doi:10.3390/rs8030164

Hedley, J. *B. Russell, *K. Randolph and H. Dierssen. 2016. A physics-based method for the remote sensing of seagrasses. *Remote Sensing of the Environment* 174: 134-147.

Dierssen, H.M., G. McManus, A. Chlus*, D. Qiu, B. Gao, and S. Lin. 2015. Space station image captures a red tide ciliate bloom at high spectral and spatial resolution. *Proc. National Academy Sci.* 112 (48) 14783-14787. www.pnas.org/cgi/doi/10.1073/pnas.1512538112.

Brady, P.C., Gilerson, A.A., Kattawar, G.W., Sullivan, J.M., Twardowski, M.S., Dierssen, H.M., Gao, M., Travis, K., Etheredge, R.I., Tonizzo, A. and Ibrahim, A., 2015. Open-ocean fish reveal an omnidirectional solution to camouflage in polarized environments. *Science*, 350(6263): 965-969.

*Russell, B. and H. M. Dierssen. 2015. Use of Hyperspectral Imagery to Assess Cryptic Color Matching in Sargassum Associated Crabs. *Plos One.* 10(9): e1036260. 10.1371/journal.pone.0136260

Dierssen, H.M., *A. Chlus, *B. Russell. 2015. Hyperspectral discrimination of floating mats of seagrass wrack and the macroalgae Sargassum in coastal waters of Greater Florida Bay using airborne remote sensing. *Remote Sensing of the Environment* 10.1016/j.rse.2015.01.027

*Randolph, K., H.M. Dierssen, M. Twardowski, A. Cifuentes Lorenzen, C.J. Zappa. 2014. Optical measurements of small deeply-penetrating bubble populations generated by breaking waves in the Southern Ocean. *J. Geophys. Res. Oceans*, 119, doi:10.1002/2013JC009227.

Hill, V., R. C. Zimmerman, W. P. Bissett, D. D. R. Kohler, and H.M. Dierssen. 2014. Evaluating light availability and seagrass biomass and productivity using hyperspectral airborne remote sensing in Saint Joseph's Bay, Florida. *Estuaries and Coasts*. DOI 10.1007/s12237-013-9764-3

Mouroulis, P., B.V. Gorp, R. Green, H.M. Dierssen, D.W. Wilson, M. Eastwood, J. Boardman, B. Gao, D. Cohen, B. Franklin, F. Loya, S. Lundeen, A. Mazer, I. McCubbin, D. Randall, B. Richardson, J.I. Rodriguez, C. Sarture, E. Urquiza, R. Vargas, V. White, K. Yee. 2013. The Portable Remote Imaging Spectrometer (PRISM) coastal ocean sensor: characteristics and first flight results. *Appl. Optics.* 53(7):1363-1380.

Gilerson, A.A., J. Stepinski, A.I. Ibrahim, Y. You, J.M. Sullivan, M.S. Twardowski, H.M. Dierssen, *B. Russell, M.E. Cummings, P. Brady, S.A. Ahmed, and G.W. Kattawar. 2013. Benthic effects on the polarization of light in shallow waters. *Appl. Optics.* 52(36):8685-8705

Siegel, D.A., M.J. Behrenfeld, S. Maritorena, C.R. McClain, D. Antoine, S.W. Bailey, P.S. Bontempi, E.S. Boss, H.M. Dierssen et al.. 2013. Regional to Global Assessments of Decadal Scale Phytoplankton Dynamics From The SeaWiFS Mission. *Remote Sensing of the Environment.* 135:77-91.

*Hovland, E.K., H.M. Dierssen, A.S. Foerreira, and G. Johnsen. 2013. Dynamics regulating major trends in Barents Sea temperatures and the subsequent effect on remotely sensed particulate inorganic carbon. *Marine Ecol. Progr. Ser.* 484:17-32.

*Aurin, D. and H. M. Dierssen. 2012. Advantages and limitations of ocean color remote sensing in CDOM-

dominated, mineral-rich coastal and estuarine waters. *Remote Sensing of the Environment*. 125: 181-197.

Rosa, R., Gonzales, L., H.M. Dierssen, and B. A. Seibel. 2012. Environmental determinants of latitudinal-size trends in cephalopods. *Mar. Ecology Progress Series*. 464: 153-165

Seibel, B. A., A. E. Mass, H.M. Dierssen. 2012. Energetic plasticity underlies a variable response to ocean acidification in the pteropod, *Limacina helicina antarctica*. *PLoS ONE*. 7(4). e30464.

Groundwater, H., M. Twardowski, H. Dierssen, A. Sciandra, S. Freeman. 2012. Determining oceanic particle size distributions and particle composition: a new SEM-EDS protocol with validation and comparison to other methods. *Journal of Atmospheric and Oceanic Technology*. 29. 433-449.

*Maas, Amy E., L. E. Elder, H.M. Dierssen, and B. A. Seibel. 2011. The metabolic response of Antarctic pteropods (Mollusca: Gastropoda) to regional productivity: implications for biogeochemical cycles. *Marine Ecol. Progr. Ser.* 441: 129-139.

You, Y., A. Tonizzo, A. Gilerson, M. E. Cummings, P. Brady, J. M. Sullivan, M. S. Twardowski, H. M. Dierssen, S. A. Ahmed, and G. W. Kattawar. 2011. Measurements and simulations of polarization states of underwater light in clear oceanic waters. *Applied Optics*. 50, 4873-4893.

*Mcperson, M., V.J. Hill, R.C. Zimmerman, and H.M. Dierssen. 2011. The optical properties of Greater Florida Bay: Implications for seagrass abundance. *Estuaries and Coasts*. DOI: 10.1007/s12237-011-9411-9.

Dierssen, H.M. 2010. Perspectives on Empirical Approaches for Ocean Color Remote Sensing of Chlorophyll in a Changing Climate. *Proc. Nat. Acad. Sci.* 107:17073-17078.

*Buonassissi, C., and H.M. Dierssen. 2010. A Regional Comparison of Particle Size Distributions and the Power-law Approximation in Oceanic and Estuarine Surface Waters. *J. Geophys. Res.* 115. C10028.
doi:10.1029/2010JC006256.

Dierssen, H.M., R.C. Zimmerman, D. Burdige, and L. Drake. 2010. Benthic ecology from space: optics and net primary production in seagrass and benthic algae across the Great Bahama Bank. *Marine Ecol. Progr. Ser.* 411:1-15. Feature article.

*Aurin, D, H.M. Dierssen, M.S. Twardowski and C.S. Roesler. 2010. Optical complexity in Long Island Sound and implications for coastal ocean color remote sensing, *J. Geophys. Res.*, 115 (C07011), doi:10.1029/2009JC005837.

Dierssen, H.M., R.C. Zimmerman, D. Burdige, and L. Drake. 2009. Potential export of unattached benthic macroalgae to the deep sea through wind-driven Langmuir circulation. *Geophys. Res. Letters*. 36. L04602, doi:10.1029/2008GL036188

Seibel, B.A. and H. M. Dierssen. 2009. Animal function at the heart (and Gut) of Oceanography. *Science*. 323, 343-344.

Dierssen, H.M., R.C. Zimmerman, and D. Burdige. 2009. Optical properties and remote sensing of high turbidity carbonate sediment whittings on the Great Bahama Bank and relationship to Langmuir Circulation. *Biogeosciences*. 6: 1–14.

Rosa, R., Dierssen, H.M., Gonzales, L., and B. A. Seibel. 2008. Large scale diversity patterns of cephalopods in the Atlantic open ocean and deep-sea. *Ecology*. 89, 3449-3461.

Rosa, R., Dierssen, H.M., Gonzales, L., and B. A. Seibel. 2008. Ecological biogeography of cephalopod mollusks in Atlantic Ocean: Historical and contemporary causes of coastal diversity patterns. *Global Ecol. Biogeography*. 17: 600-610.

Gao, B., M.J. Montes, R. Li, H.M. Dierssen, and C.O. Davis. 2007. An atmospheric correction algorithm for remote sensing of bright coastal waters using MODIS land and ocean channels in the solar spectral region. *IEEE Trans.*

Geosci. Remote Sens. 45 (6): 1835-1843.

Dierssen, H.M., Ryan, J., R. Kudela, and R.C. Zimmerman. 2006. Red and black tides: Quantitative analysis of water-leaving radiance and perceived color for phytoplankton, colored dissolved organic matter, and suspended sediments. *Limnol. Oceanogr.* 55 (6):2646-2659.

Carr, M.E. et al. 2006. A comparison of global estimates of marine primary production from ocean color. *Deep Sea Research II.* 53: 741-770.

*Aurin, D, H.M. Dierssen, M.S. Twardowski and C.S. Roesler. 2010. Optical complexity in Long Island Sound and implications for coastal ocean color remote sensing, *J. Geophys. Res.*, 115 (C07011), doi:10.1029/2009JC005837.

Seibel, B.A., and H.M. Dierssen. 2003. Tip of the iceberg: Cascading trophic impacts of B-15A in the Ross Sea, Antarctica. *Biol. Bulletin.* 2025: 93-97.

Dierssen, H.M., R.C. Zimmerman, R.A. Leathers, T.V. Downes, and C.O. Davis. 2003. Ocean color remote sensing of seagrass and bathymetry in the Bahamas Banks by high resolution airborne imagery. *Limnol. Oceanogr.* 48 (1, part 2): 456-463.

Dierssen, H.M., R.C. Smith, and M. Vernet. 2002. Glacial meltwater dynamics in coastal waters west of the Antarctic Peninsula. *Proc. Nat. Acad. Sci.* 99(4):1790-1795.

Smith, R.C., K. Baker, H.M. Dierssen, S. Stammerjohn, M. Vernet. 2001. Variability of primary production in an Antarctic marine ecosystem as estimated using a multi-scale sampling strategy. *Amer. Zoologist.* 41:40-56

Dierssen, H.M., and R. C. Smith. 2000. Bio-Optical properties and remote sensing ocean color algorithms for Antarctic Peninsula Waters. *J. Geophys. Res.* 105(C11): 26301-26312.

Dierssen, H.M., M. Vernet, and R. C. Smith. 2000. Optimizing models for remotely estimating primary production in Antarctic coastal waters. *Antarctic Sci.* 12:20-32.

Book Chapters

Dierssen, H. M., and Garaba, S. P. 2020. Bright Oceans: Spectral Differentiation of Whitecaps, Sea Ice, Plastics, and Other Flotsam, in: *Recent Advances in the Study of Oceanic Whitecaps: Twixt Wind and Waves*, edited by: Vlahos, P., and Monahan, E. C., Springer International Publishing, Cham, 197-208.

Dierssen, H.M. and A.E. Theberge. 2014. Bathymetry: History of Seafloor Mapping. *Encyclopedia of Natural Resources. Volume II: Water and Air.* Taylor & Francis Group. New York. ISBN 9781439852583

Dierssen, H.M. and A.E. Theberge. 2014. Bathymetry: Assessing Methods. *Encyclopedia of Natural Resources. Volume II: Water and Air.* Taylor & Francis Group. New York. ISBN 9781439852583

Dierssen, H.M. and A.E. Theberge. 2014. Bathymetry: Features and Hypsography. *Encyclopedia of Natural Resources. Volume II: Water and Air.* Taylor & Francis Group. New York. ISBN 9781439852583

Dierssen, H.M. and Randolph, K. 2013. Remote Sensing of Ocean Color. In *Earth System Monitoring*. Ed J. Orcutt. Springer. New York. pp 439-472. DOI: 10.1007/978-1-4614-5684-1.

Dierssen, H.M., and *Randolph, K. 2013. Remote Sensing of Ocean Color. *Encyclopedia of Sustainability Science and Technology.* Springer-Verlag Berlin Heidelberg. 25 pp.

Johnsen G, Z. Volent, H.M. Dierssen, R. Pettersen, M.V. Ardelan, F. Sørense, P. Fearn, M. Ludvigsen, and M. Moline. 2013. Underwater hyperspectral imagery to create biogeochemical maps of seafloor properties. Chapter 20. In *Subsea Optics and Imaging*. Ed. J. Watson and O. Zielinski. Woodhead Publishing. DOI : 10.1533/9780857093523.3.508. pp. 508-535.

Dierssen, H.M., J. Acker, S. Bernard, and G. Pitcher. 2008. Hazards: Natural and Man-Made. In *Why Ocean Colour? The Societal Benefits of Ocean Colour Technology*. Ed. Platt, T., N. Hoepffner, V. Stuart, and C. Brown. International Ocean Color Coordinating Group (IOCCG) Report number 7. p. 83-102.

Smith, R.C., Dierssen, H.M., and Vernet, M. 1996. Phytoplankton biomass and productivity in the Western Antarctic Peninsula Region. Ross, R. M., Hofmann, E. E., and Quetin, L. B., ed., *Foundations for Ecosystem Research West of the Antarctic Peninsula: AGU Antarctic Research Series*.

Peer-reviewed Conference Proceedings and Databases

Garaba, S. P., Castagna, A., Devriese, L. I., Dierssen, H. M., Everaert, G., Knaeps, E., and Sterckx, S. (2021) Spectral reflectance measurements of dry and wet plastic materials, asphalt, concrete klinker from UV-350 nm to SWIR-2500 nm around Spuikom, Belgium. PANGAEA - Data Publisher for Earth & Environmental Science, <https://doi.pangaea.de/10.1594/PANGAEA.937185>.

Dierssen, H.M. 2021. Realizing the potential of hyperspectral remote sensing in coastal and inland waters. IGARSS 2021 - IEEE International Geoscience and Remote Sensing Symposium Article. July. Brussels, Belgium

Garaba, S. P., and Dierssen, H. M. (2017) Spectral reference library of 11 types of virgin plastic pellets common in marine plastic debris. *Ecological Spectral Information System (EcoSIS)*.

Dierssen, H.M. 2013. Overview of hyperspectral remote sensing for mapping marine benthic habitats from airborne and underwater sensors. Ed. P. Mouroulis and T.S. Pagano. *Proceedings of SPIE Imaging Spectrometry XVIII*. San Diego, CA September, 2013. 8870-21. p. 1-7.

*Heupel E, Dierssen H.M., Gao B, Green RO, Mouroulis P (2013) *Hyperspectral Remote Sensing in Coastal Regions: PRISM Field Validation in Elkhorn Slough*. Workshop on Hyperspectral Image and Signal Processing 5: Evolution in Remote Sensing (WHISPERS - www.ieee-whispers.com)

Groundwater, H. M. Twardowski, H.M. Dierssen, A. Sciandre, and S.A. Freeman. A method for determining oceanic particle size distributions and particle composition using scanning electron microscopy coupled with energy dispersive spectroscopy. in *Scanning Microscopy 2010, Proceedings of SPIE Vol. 7729* (SPIE, Bellingham, WA 2010), 77290E.

Peloquin, J, C. Swan, N. Gruber, M. Vogt, H. Claustre, J. Ras, J. Uitz, J-C. Marty, R. Barlow, M. Behrenfeld, R. Bidigare, E. Buitenhuis, D. Cummings, H. Dierssen et. al. 2012. The MAREDAT global database of high performance liquid chromatography marine pigment measurements. *Earth System Science Data (ESSD)* 5: 1179-1214.

Lee, Z., C. Hu, B. Casey, S. Shang, H. Dierssen, and R. Arnone. 2010. Global shallow-water high resolution bathymetry from ocean color satellites. *Eos Trans. Amer. Geophys. Un.* 91 (46): 429-430.

Trees, C.C., P.W. Bissett, H. Dierssen, D. Kohler, et al. 2005. Monitoring water transparency and diver visibility in ports and harbors using aircraft hyperspectral remote sensing. *Photonics for Port and Harbor Security*, edited by M.J. DeWeert and T.T. Saito, *Proceedings of the SPIE* 5780: 91-98.

Dierssen, H. 2000. Ocean color remote sensing of chlorophyll and primary production west of the Antarctic Peninsula. PhD Thesis, University of California, Santa Barbara, Santa Barbara, CA.

Dierssen, H.M., and R.C. Smith. 1997. Estimation of irradiance just below the air-water interface, in *Proceedings Ocean Optics XIII*, edited by S. Ackleson and R. Frouin, *Proc. SPIE Int. Soc. for Opt. Eng.*, 2963, 204-209.

News Articles

Hancock, E. 2024. New Satellite Will Help Researchers See the Oceans and Atmosphere as Never Before. <https://today.uconn.edu/2024/01/new-satellite-will-help-researchers-see-the-oceans-and-atmosphere-as-never-before/>

Phillips, K. 2023. Art Meets Science in ‘Floating Points’ Exhibition at AVS Gallery at Avery Point. UConn Today. <https://today.uconn.edu/2023/11/art-meets-science-in-floating-points-exhibition-at-avs-gallery-at-avery-point/>

Aldrich, A. 2021. Science and Art Combine on Microplastics Research Effort. UConn Today. <https://today.uconn.edu/2021/06/science-and-art-combine-on-microplastics-research-effort/>

Dierssen, H.M. 2021. Sensing a More Colorful Ocean with NASA’s PACE Mission. *Sea Technology*. March. 62(3): 19-23.

Dierssen, H.M. and G. McManus. 2016. *Mesodinium rubrum*: An old bug meets new technology. *Ocean Carbon and Biogeochemistry News*. 9(1): 4-6.

Stuart, V., S. Bernard, and H. Dierssen. 2016. New Technology and Teamwork to Tackle Ocean Color Radiometry. *EOS Earth and Space Transactions*. 11 January 2016. <https://eos.org/meeting-reports/new-technology-and-teamwork-to-tackle-ocean-color-radiometry>.

Dierssen, H.M. Remote sensing of coastal habitats. 2013. *SPIE Newsroom*. 16 August 2013. <http://spie.org/newsroom/technical-articles/5060-remote-sensing-of-coastal-habitats?ArticleID=x102807>

INVITED COLLOQUIA

Invited Plenary Talks

- Dierssen, H.M. 2022. Coast Guard’s Climate Evergreen Strategic Event. 30-31 Aug 2022. Keynote addressing remote sensing and new sensor technology for advancing Coast Guard priorities in a changing world
- Dierssen, H.M. 2022. March 8. Coastal Perspectives Meeting. University of Connecticut. Rethinking the Blue Marble – the Colour of the Sea and Sky. <https://uconn-cmr.webex.com/recording/service/sites/uconn-cmr/recording/103ba775816f103ab9cc0050568fa8a9/playback>
- Realizing the potential of hyperspectral remote sensing in coastal and inland waters. IGARSS 2021 - IEEE International Geoscience and Remote Sensing Symposium Article. July. Brussels, Belgium. 2021
- Ocean World: Overview of Optical Technology. *Ocean Carbon and Biogeochemistry Summer Workshop*. June 18, 2021.
- Seagrass Monitoring with remote sensing: uncertainty of methods, science needs, future growth. All-Atlantic Summit on Innovation for Sustainable Marine Development and the Blue Economy: Fostering Global Economic Recovery in a Post-pandemic World. October. October 8, 2020
- New Directions in Ocean Color Research, Invited plenary panel, American Meteorological Society, 2019 Joint Satellite Conference, Boston, MA October 3 2019.
- How Green is “Blue Carbon”: Optics and Remote Sensing of Coastal Vegetation. Santa Monica College. Distinguished Scientist Lecture Series. 3 March, 2016.
- Assessing Anthropogenic Loss of Blue Carbon in the Coastal Ecosystems. Invited plenary. NASA Carbon Cycle and Ecosystems Joint Science Workshop. 23 April 2015.
- Overview of Hyperspectral Remote Sensing for Mapping Marine Benthic Habitats from Airborne and Underwater Sensors. 2014. *Imaging Spectrometry VXIII*. SPIE Optics and Photonics. San Diego August 19-21 2013.
- Shedding light on whittings: optics and biogeochemistry. Securing Our Future Initiative (SOFI) Underwater Optics Workshop. 16-17 March 2009. Glasgow, Scotland. Invited International Speaker.
- Parting of the Red Seas. *Ocean Optics XVIII*. Montreal, Ca. Invited Plenary Talk (45 minutes). Oct. 9, 2006. Voted Best Talk of the Conference.

Invited Academic Seminars

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- Advancing remote sensing of marine microplastics. CISE. Ensenada, Mexico. May 10, 2024.
 - Exploring the need for hyperspectral imagery: A perspective from Long Island Sound. NTNU. Trondheim Norway. 5 September 2023
 - Technology for Exploring Ocean Worlds: Ocean Optics Perspective. NOW Retreat. Catalina Island, CA. 24 August 2023.
 - Advances in Remote Sensing of Microplastics. NASA Ocean Biology and Biogeochemistry Meeting. College Park Maryland, 9 May 2023.
 - Satellite ocean color measurements in the Western Antarctic Peninsula: A retrospective analysis. Rutgers University. Palmer Long Term Ecological Research Project Meeting. April 27, 2023
 - Filling the gap: Hyperspectral lessons from the great wet barnyard of Long Island Sound. Old Dominion University. April 11, 2023
 - Filling the gap: Hyperspectral lessons from the great wet barnyard of Long Island Sound. University of Rhode Island. March 31, 2023
 - Investing in New Sensing Technologies to Assess a Changing Ocean. Coast Guard Academy New London. October 13, 2022
 - Hyperspectral remote sensing from the great wet barnyard of Long Island Sound. University of Southern Mississippi. October 29, 2021
 - Better quantification of the “lungs” of the ocean: Hyperspectral remote sensing from the great wet barnyard of Long Island Sound. University of California Santa Cruz. February 12, 2021
 - Foresight Workshop - Data needs for hyperspectral detection of algal bloom diversity across the globe. Euromarine General Assembly. Piran, Slovenia. January 16, 2020
 - Bright Oceans: Differentiating whitecaps, plastics on the sea surface. University of Connecticut. Geography Department. November 1, 2019
 - Google Earth and Beyond: Interpreting spectral imagery of seagrass, corals and other coastal ecosystems. University of Rhode Island, Graduate School of Oceanography, September 11, 2019
 - Hyperspectral remote sensing of bright surface features: whitecaps and plastics. Flanders Marine Institute. Oostende, Belgium. 13 December 2018
 - Assessing Seagrass Dynamics using Hyperspectral Remote Sensing. University of Sao Paulo, CEBIMar. Brazil. Nov 10 2017
 - The 2017-2027 Advanced Science Plan for NASA’s Ocean Biology and Biogeochemistry Research. NASA Ocean Research Science Team Meeting. Lisbon, Portugal. May 2017
 - Sources of Backscattering in the Southern Ocean. International Ocean Colour Science Meeting. Lisbon, Portugal. May 2017
 - Out of the Box Applications for Hyperspectral Imagery. International Ocean Colour Science Meeting. Lisbon, Portugal. May 2017
 - Backscattering in the Southern Ocean. University of Maryland Baltimore County. April, 2017.
 - Town Hall: Defining Priorities for NASA in Ocean Ecology and Biogeochemistry. 2016 Ocean Sciences Meeting. New Orleans. 25 February, 2016.
 - NASA Hyperwall: Airborne Remote Sensing of Coastal Zone. 2016 Ocean Sciences Meeting. New Orleans. 24 February, 2016.
 - Global Café: Water, Water, Everywhere. Melding Art and Science. University of Connecticut. 23 November, 2015.
 - Using Remote Sensing Methods to Assess Seagrass Ecosystems and Potential Export of “Blue” Carbon. University of Rhode Island. 15 October 2015.
 - Using Remote Sensing Methods to Assess Seagrass Ecosystems and Potential Export of “Blue” Carbon. University of Connecticut. 25 September 2015.

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- Using Remote Sensing Methods to Assess Seagrass Ecosystems and Potential Export of “Blue” Carbon. University of Massachusetts Dartmouth. 16 September 2015
 - Assessing blue carbon from hyperspectral remote sensing. Royal Belgian Institute of Natural Sciences (RBINS). Brussels, Belgium. 1 July 2015.
 - Airborne remote sensing in high latitude systems. International Ocean Colour Meeting. High Latitude Presentation/Panel. 16 June 2015.
 - Airborne hyperspectral instrument PRISM and observations of submerged aquatic vegetation. 2014 Hypsiri Data Product Symposium. 6 June 2014.
 - Using hyperspectral airborne PRISM imagery to map vulnerable coastal salt marsh and seagrass habitats. 2013 Hypsiri Products Symposium. NASA Goddard Space Flight Center. 29 May 2013.
 - Seagrass is always greener: Optical remote sensing of the seafloor. NATO Undersea Research Centre. La Spezia Italy. 13 June 2012.
 - Akvaplan-niva Fram Centre for Climate and the Environment. Tromsø, Norway. 7 May 2012.
 - Institut für Chemie und Biologie des Meeres (ICBM) Carl von Ossietzky Universität Oldenburg. Germany. 28 March 2012.
 - National Oceanography Centre, The Proudman Oceanographic Laboratory, United Kingdom. 13 March 2012.
 - Norwegian University of Science and Technology. Trondheim, Norway. 16 February 2012.
 - Coccoliths versus bubbles: Backscattering in the Southern Ocean. Marine Atmospheric Chemistry Seminar. University of Rhode Island Graduate School of Oceanography. 8 April, 2011.
 - The airborne sensor PRISM. NASA Ocean Color Research Team Meeting. 4-5 May 2009. Invited Presentation.
 - Remote sensing of seagrass. NASA Coastal Habitat Assessment Workshop. Aug. 2008.
 - “Shedding Light” on the Mysterious Bahamian Sediment Whiting. University of Connecticut. Geosciences Colloquium. March 25, 2008.
 - Seeing Red: The Optics of Red and Black Tides. Woods Hole Oceanographic Institution. Marine Biological Laboratory. Colloquium. 8 March 2007
 - Seeing Red: The Optics of Red and Black Tides. University of Southern California. Biology Department. Colloquium. 20 February, 2007.
 - Benthic Ecology from Space. Bigelow Laboratories. Boothbay Harbor, Maine. Seminar. 6 December, 2006.
 - Parting the Red Seas: the Optics of Red Tides. University of Connecticut. Geography Dept., Mar. 17, 2006
 - Parting the Red Seas: the Optics of Red Tides. University of Rhode Island. Biological Sciences, Sept. 2005
 - Parting the Red Seas: the Optics of Red Tides. University of Rhode Island. Graduate School of Oceanography. Feb., 2005.
 - From melt water to red water: New tools for coastal ocean observing Old Dominion University, Ocean, Earth & Atmospheric Sciences, Norfolk, VA, October 7, 2004
 - Whittings and Windrows: Optics of the Bahamas Banks State University of New York Stony Brook, Marine and Atmospheric Sciences, NY, October 1, 2004
 - Benthic Ecology from Space: Remote Sensing of Seagrass from Different Platforms and Scales. Lamont Doherty Earth Observatory, New York, April 23, 2004
 - Benthic Ecology from Space: Remote Sensing of Seagrass from Different Platforms and Scales. University of Rhode Island. Graduate School of Oceanography. January 21, 2004.
 - Multi-platform remote sensing in coastal waters. Pacific Fisheries Laboratory. NOAA. Monterey, CA. March 15, 2002
 - Remote sensing benthic algal in optically shallow waters. Moss Landing Marine Labs. April 13, 2000.
 - SeaWiFS, Sea Ice and Seagrass: Challenges of remote sensing in coastal waters. Naval Postgraduate School. March 8, 2000.

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- SeaWiFS, Sea Ice and Seagrass: Challenges of remote sensing in coastal waters. University of California Santa Cruz. March 7, 2000.
 - Bio-optical properties of Antarctic coastal waters. University of Southern Mississippi, Department of Marine Sciences. April 28, 1999.

PACE Related Invited Talks

Dierssen, H.M. 2023. May 9. NASA Ocean Color Research Team Meeting. College Park Maryland.

Dierssen, H.M. 2022. April 13. Australia Aquawatch. Overview of PACE mission.

Dierssen, H.M. 2022. April 11. PACE Early Adopters. Challenges and Opportunities of Remote Sensing at the Air-Sea Boundary.

Dierssen, H.M. 2022. March 8. Coastal Perspectives Meeting. University of Connecticut. Rethinking the Blue Marble – the Colour of the Sea and Sky. <https://uconn-cmr.webex.com/recordingservice/sites/uconn-cmr/recording/103ba775816f103ab9cc0050568fa8a9/playback>

Remer, L.A. et al. 2022. February 28. Ocean Sciences Meeting. Remer et al. Why PACE is an atmospheric mission and why it matters to you, an ocean scientist

Dierssen, H.M. et al. 2022. February 28. Invited. Plankton, Aerosol, Cloud and ocean Ecosystem (PACE) hyperspectral mission: Synergies in Data, Science, and Applications. Ocean Sciences Meeting.

Dierssen, H.M. 2022. February 23. Ocean Sciences Joint NASA PACE, SBG, GLIMR Townhall. Opportunities presented by mission synergies.

Dierssen H.M. 2022. January 4. NASA Biodiversity Team Meeting. PACE Mission Overview.

Dierssen, H.M. 2021. December 7. Bright Oceans and Atmospheric Correction. American Geophysical Union Annual Meeting. Hybrid.

Dierssen, H.M. 2021. December 7. Realizing the potential of hyperspectral remote sensing in coastal and inland waters. American Geophysical Union Annual Meeting. Hybrid.

Dierssen, H.M. 2021. October 29. Invited. Hyperspectral remote sensing from the great wet barnyard of Long Island Sound. University of Southern Mississippi.

Dierssen, H.M. 2021. October 28. NASA Ocean Color Research Team (OCRT) Virtual Meeting. PACE SAT overview.

Dierssen, H.M. 2021. July 23. PACE Early Adopters Water Focus Group. Overview of PACE SAT.

Dierssen, H.M. 2021. July 8. Realizing the potential of hyperspectral remote sensing in coastal and inland waters. IGARSS 2021 - IEEE International Geoscience and Remote Sensing Symposium Article. July. Brussels, Belgium. 8 July 2021.

Dierssen, H.M. 2021. June 18. Invited. Ocean World: Overview of Optical Technology. Ocean Carbon and Biogeochemistry Summer Workshop.

Dierssen, H.M. 2021. June 15. 5th SBG Community Webinar. PACE mission overview.

Dierssen, H.M. 2021. February 12. Invited. Better quantification of the “lungs” of the ocean: Hyperspectral remote sensing from the great wet barnyard of Long Island Sound. University of California Santa Cruz. F

Dierssen H.M. 2020. September 23. PACE Applications Workshop. Moderator of Session 4: Connecting with the PACE Research Community

Dierssen, H.M. 2020. Assessing the lungs of the ocean with the Plankton Aerosol Cloud and ocean Ecosystem (PACE) Mission. AGU Fall Meeting. Virtual December 2020.

COMMUNITY OUTREACH

- New London Day. Article. “Avery Point professor leading a team of scientists working on a NASA mission.” By Eric Moser. March 14, 2022.

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- UCONN Today. Article. "Science and Art Combine on Microplastics Research Effort." By Anna Zarra Aldrich. June 3, 2021
 - NBC Connecticut. 6 pm. 4/9/2021. Interview about marine microplastics and PPE. 2021.
 - STEM Mentor for Senior Project Internship. Stonington High School Senior. January-February 2020.
 - STEM Forum for Girls. Stonington High School. Science workshops for girl scouts. November 2, 2019.
 - This is UConn. University of Connecticut Television Commercial. 2016. Featured in the commercial doing ship-based teaching.
 - Aquakids Television Show. 2010. Presented field and laboratory experiments on Light and the Oceans. Aired in Spring 2010.
 - Women in Science Day. 2016. Mystic Aquarium, Connecticut. Hyperspectral imaging technology demonstration to public. July.
 - Third Annual COSEE-TEK Ocean Science & Technology Day (OSTD). 2015. Mystic Aquarium, Connecticut. Presented imaging spectrometry technology to the public.
 - National Ocean Sciences Bowl, Moderator, Quahog Bowl: 2015, 2013, 2011, 2010, 2009, 2008, Otter Bowl: 2002, 2003.
 - COSEE-TEK Teacher Technology Experiences Workshop. 11-12 November 2012, Presentation and Interaction with high school teachers.
 - COSEE-TEK Teacher Ocean Technology Institute (TOTI), Developed 3-day workshop "Hiding in the Light," for high school teachers based on research. 27-31 July, 2011. <http://www.coseetek.net/programs/TTE/LIGHT/>
 - Research presentation to UConn Board of Director's spouses (2008, 2013)
 - Birralee International School. Trondheim, Norway. Presentation to Year 5 on light and oceans. 2012.
 - Westerly Middle School. Westerly, RI. Presentations and optics and polarized light to 6th Grade classes.
 - State Street School. Westerly RI. Math Week. Presentation on math in my career. 2011, 2010
 - Long Island Sound Foundation. Marine Science Day Conference. Annual Presenter (2006, 2007, 2008, 2009, 2010, 2011). Presented remote sensing session to groups of 4-8 graders.
 - Tower Street School, Westerly RI. (2006, 2008). Organized and instructed a day-long Marine Science Field Trip to Avery Point for two Kindergarden classes.
 - John Hopkins Center for Talented Youth Day. Nov 12, 2005. Two hour-long workshops for 8th graders.

PROFESSIONAL AFFILIATIONS

The Oceanography Society (TOS)

American Geophysical Union (AGU)

American Society of Limnology and Oceanography Society (ASLO)

International Ocean Colour Coordinating Group (IOCCG)