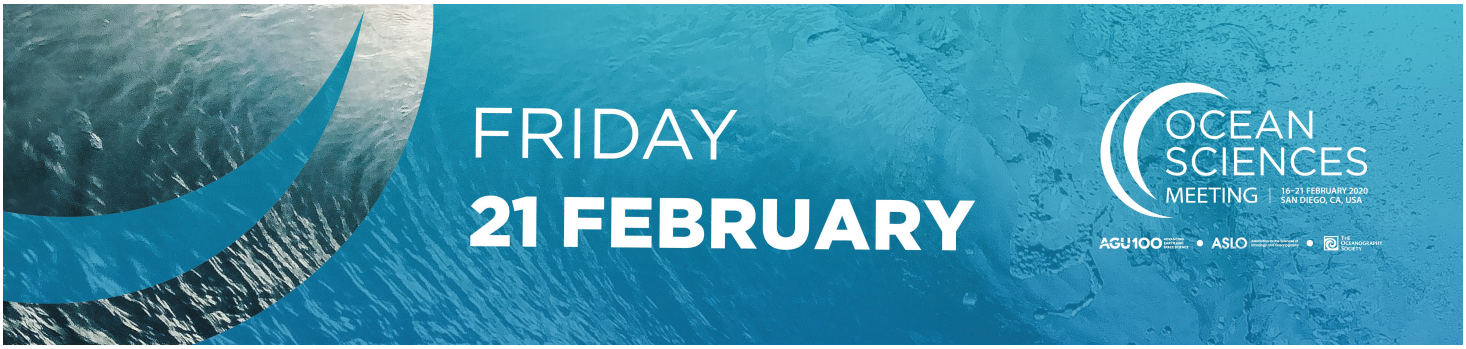

Session Information

Oral Sessions
*Sessions are being held in the **Convention Center (CC)***
Poster Sessions
The eLightning Theater is located in Hall C-D (Poster Hall).
Posters are on display in the following venue throughout the week:
Hall C-D (Poster Hall)

Session & Paper Numbering

Paper Numbers - A paper number designates the section, or other sponsoring group, and chronology of the presentation.
Example: **AI21A-01** = Air-Sea Interactions, Tuesday, AM, concurrent session AI, first paper in that session.

AI	2	1	A	- 01
Discipline	Day	Time	Session	Sequence in Session

Day	Time
1 = Monday	1 = AM 0800–1000
2 = Tuesday	2 = AM 1030–1230
3 = Wednesday	3 = PM 1245–1345 / 1400–1600
4 = Thursday	4 = PM 1600–1800
5 = Friday	5 = PM 1830–2030

*The program is current as of 04 February 2020. An omitted abstract ID number in the presentation order indicates that the abstract has been withdrawn by the presenter from the session. Please refer to the online program at **https://agu.confex.com/agu/osm20/meetingapp.cgi/Home** for updates.*

Friday A.M.

AIR-SEA INTERACTIONS

AI51A 14A, Mezzanine

Friday 0800h

Processes Affecting Air-Sea Exchange and the Biogeochemistry of the Upper Ocean I *(joint with CT, CP, IS, OB, OM, PI)*

Moderators: **Alison Gray**, University of Washington; **Joellen Russell**, University of Arizona

0800h **AI51A-01** New Estimates of Global and Hemispheric Ocean-Atmosphere CO_2 flux 1992-2018. and Their Uncertainty: **A J Watson**, U Schuster, J Shutler, T Holding, P Landschuetzer

0815h **AI51A-02** Air-sea CO_2 flux measurements on the first autonomous circumnavigation of Antarctica: **A J Sutton**, N Williams, B D Tilbrook

0830h **AI51A-03** Southern Ocean CO_2 fluxes: new year-round observations from moorings in the West Antarctic Peninsula and Subantarctic Zone: **E H Shadwick**, H W Ducklow, D G Martinson, A J Sutton, T W Trull

0845h **AI51A-04** The Atmospheric Signature of Southern Ocean Carbon Fluxes: **M C Long**, B B Stephens, C Sweeney, E A Kort, R F Keeling, K McKain

0900h **AI51A-05** Storms link vertical turbulent mixing to CO_2 outgassing in the Southern Ocean: **S A Nicholson**, M du Plessis, A D Lebehot, D B Whitt, I Fer, S Swart, P M S Monteiro

0915h **AI51A-06** Effect of resolution on heat and carbon dynamics in a regional ocean circulation model for the Argentine Basin: **S Swierczek**, M R Mazloff, M Morzfeld, J L Russell

0930h **AI51A-07** Observational constraints on abiotic marine VOC sources: **G Novak**, M Vermeuel, D B Kilgour, T Bertram

0945h **AI51A-08** A Spectral View of the Seasonality and Size Differences of Marine Aerosol in the North Atlantic: **S Lewis**, G Saliba, L M Russell, T Quinn, T S Bates, K D Bidle, B Diaz, K Halsey, C A Carlson, M Behrenfeld

COASTAL AND ESTUARINE PROCESSES

CP51A 8, UL

Friday 0800h

Application of Remote Sensing to Coastal/Upwelling Regions I *(joint with IS, ME, PS)*

Moderators: **Jose Gomez-Valdes**, Center for Scientific Research and Higher Education at Ensenada; **Marouan Bouali**, IOUSP

0800h **CP51A-01** Comparing remote sensing signatures of upwelling events and submarine groundwater discharge in coastal areas: **J Caineta**, B F Thomas

0815h **CP51A-02** Upwelling Indices Time Series over the four Major Eastern Boundary Upwelling Systems from the 1981-2019 European Space Agency Sea Surface Temperature Climate Change Initiative (ESA SST CCI) Analysis Product.: **E Autret**, Y Quilfen, P Tandeo

0830h **CP51A-03** Mapping of Small-scale Ocean Features Using Both SAR and Sea Surface Temperature Data with Machine Learning: **B Holt**, B D Bue, J Wang

0845h **CP51A-04** In search of red *Noctiluca scintillans* blooms in the East China Sea: **L Qi**, S F Tsai, Y Chen, C Le, C Hu

0900h **CP51A-05** Using Saildrones to Validate Satellite-Derived Sea Surface Salinity and Sea Surface Temperature along the California/Baja Coast: **J Vazquez**, J Gomez-Valdes, M Bouali, L E Miranda, T Van Der Stocken, W Tang, C L Gentemann

0915h **CP51A-06** Calibration of Parameters for Regional Ocean Model Systems Using the Tidal Currents by Ocean Radar in the Ise Bay, JAPAN: **T Tsubono**, K Misumi, D Tsumune

0930h **CP51A-07** 45+1 years of oceanographic and meteorological observations from a coastal station in the NW Mediterranean: An opportunity for validating climate trends in remote sensing: **J Salat**, J Pascual, M Flexas, M Chin, J Vazquez

0945h **CP51A-08** Using Coincident Satellites to Automate Atmospheric Correction for Nanosatellite Imagery: **S McCarthy**, D Lewis, P Martinolich, S Ladner, A Lawson, J Jolliff, S C Anderson, R W Gould Jr, S Crawford

CP51B 9, UL

Friday 0800h

Extreme Sea Levels and Coastal Flood Risk I *(joint with OM, PC, PS)*

Moderators: **Thomas Wahl**, University of Southampton; **Katherine Serafin**, University of Florida

0800h **CP51B-01** Addressing Needs in Observed and Simulated Storm Surge Data for Uncertainty Quantification: **T Asher**, R Luettich, J L Irish, P Ma, M Bensi, D Resio

0815h **CP51B-02** Application of High Resolution Coupled Model to the Spatial Distribution Analysis of Coastal Total Water Level During Extreme Storm Events.: **J Rulent**

0830h **CP51B-03** Coastal flood risk and adaptation strategies under deep uncertainty – a modelling framework: **L MacPherson**, J Merkens, T van der Pol, S Dangendorf, A Vafeidis, J Hinkel

0845h **CP51B-04** Contribution of Wave Setup and Swash to Projected Coastal Sea Level Changes: **A Melet**, R Almar, M A Hemer, G Le Cozannet, B Meyssignac, P Ruggiero

0900h **CP51B-05** Effects of multiple flood drivers on urban flooding due to joint coastal and fluvial mechanisms: **A I Olbert**, J Comer, S Nash, M Hartnett

0915h **CP51B-06** Field and numerical assessment of meteotsunamis associated with tropical cyclone rainbands in the Gulf of Mexico: **K Anarde**, W Cheng, M Tissier, J Figlus, J J Horrillo

0930h **CP51B-07** Simulating extreme storm floods in the German Bight – past variability & future changes: **A Lang**, U Mikolajewicz

0945h **CP51B-08** The influence of human induced landscape and bathymetry changes on tides, surge and extreme water levels: **S A Talke**, R Familkhalili, L T Helaire, D A Jay, P M Orton, D K Ralston

EDUCATION, OUTREACH AND POLICY

ED51A Poster Hall C-D; eLightning Theater

Friday 0800h

Undergraduate Student Research: A Multidisciplinary Session II eLightning

ED51A-01 *eLIGHTNING* Using Machine Learning to Estimate Relative Abundances of Marine Heterotrophic Protists: **K Diep**, G K Del Rio, S Bailey, D Taniguchi

ED51A-02 *eLIGHTNING* Influence of Dissolved Humic Compounds on *K. brevis* Cell Viability, Intracellular Brevetoxin Concentrations and Brevetoxin Aerosolization: **M Leone**, C Heil, A Muni-Morgan

ED51A-03 *eLIGHTNING* Seasonal Phytoplankton Production at the New England Shelf Break Front: Observations Using the Coastal Pioneer Array's Submarine Gliders: **K Ehmann**, S Ferguson, C E Alexander, R D Vaillancourt

ED51A-04 *eLIGHTNING* Cellular Response of *Emiliania huxleyi* to Growth on Phosphonates: **C Mahoney**, E J McDermith, L P Whitney, M W Lomas

ED51A-05 *eLIGHTNING* The Effects of Metal Contaminants on Fish Sensory Abilities: **R Santana**

ED51A-06 *eLIGHTNING* Upside-down Jellyfish: A Bioindicator of the Consequences of the *Halophila stipulacea*: **N Scott**, E Cruz-Rivera

ED51A-07 *eLIGHTNING* Spatial Analysis of the Invasive Striped Eel Catfish in the Saipan Lagoon: **D Steward**, S McKagan, R Greene, M Trianni

ED51A-08 *eLIGHTNING* Impacts on Indicator Fish Species from the Reduced Flow of Power Plant Cooling Water: **D Stankowski**, T M Grothues

ED51A-09 *eLIGHTNING* Microplastics: More than Just a Saltwater Problem: **M H Ahern**, N Burdick, D Welsh, E S Gordon

ED51A-10 *eLIGHTNING* Gulf of Maine Temperature-Salinity Curves From the Early 1900s (Henry Bigelow) Compared to the Present (GNATS): **G Martinez**, W M Balch

ED51A-11 *eLIGHTNING* An Ocean of Stories: Improving Understanding of Coastal Ecosystem Issues & Research in Kachemak Bay, Alaska with *esri* Story Maps: **B Visaya**

ED51A-12 *eLIGHTNING* Impact of STEMSEAS Program on Underrepresented Undergraduate Student Experiences in Pursuing Marine Science Research: **T Willis**, L D White, S K Cooper

HIGH LATITUDE ENVIRONMENTS

HE51A 1B, UL

Friday 0800h

Moving Beyond Melt: The Impact of Melting Glaciers, Icebergs, and Sea Ice on Ocean Environments I *(joint with CT, PI, SI)*

Moderators: **Dustin Carroll**, Moss Landing Marine Laboratories; **Fiammetta Straneo**, Scripps Institution of Oceanography

0800h **HE51A-01** A sensitivity analysis to determine conditions necessary for meltwater-enhanced nutrient export from Greenland's glacial fjords: **H Oliver**, R M Castelao, P L Yager

0815h **HE51A-02** Depth and properties of freshwater export from the Greenland ice sheet to the ocean: **D Slater**, F Straneo

0830h **HE51A-03** Preliminary Assessment of Physical Oceanographic Forcing in Summer on Outlet Glaciers of Devon Ice Cap's Croker Bay and the Downstream Marine Ecological Response: **N Trenholm**, D Gong, L V Plough

0900h **HE51A-04** Observations of Iceberg Meltwater Distribution in Sermilik Fjord, Southeast Greenland: **M R Lindeman**, F Straneo, H Singh, C Cenedese, D Sutherland, K M Schild, D Duncan

0915h **HE51A-05** Quantifying calving flux from underwater noise of iceberg impact: **O Glowacki**, G B Deane

0930h **HE51A-06** Pressurized air bubble injections disturb near-ice boundary-layer dynamics: **M E Wengrove**, E Pettit, J D Nash

0945h **HE51A-07** Assessing Seasonal and Annual Changes in Glacier Ice Habitat for Harbor Seals in a Tidewater Glacier Fjord in Glacier Bay National Park, Alaska: **J N Womble**, P J Williams, R W McNabb, A Prakash, R Gens, B Sedinger, C Acevedo

1000h **HE51A-08** Changing Ice Morphology as a Driver for Highly Energetic Near-Terminus Ocean Dynamics: **J D Nash**, E Pettit, R H Jackson, M Shaya, D Sutherland, C Keinholz, J M Amundson, E D Skyllingstad, N Abib, M E Wengrove, D Winters

OCEAN OBSERVATORIES, INSTRUMENTATION AND SENSING TECHNOLOGIES

IS51A 11A, UL

Friday 0800h

Sustained Ocean Observing: From Events to Assessing Long-Term Ecosystem Patterns I *(joint with CP, OB, PL)*

Moderators: **Michael Lomas**, Bigelow Lab for Ocean Sciences; **Richard Dewey**, University of Victoria; **John Trowbridge**, Woods Hole Oceanographic Institution

0800h **IS51A-01** A 60+ year ocean temperature climatology for identifying extremes: **M Hemming**, M Roughan, A Schaeffer, T Austin, S Milburn

0815h **IS51A-02** A Review of the Regional Cabled Array in the Northeast Pacific: **R Fatland**

0830h **IS51A-03** Adaptive biogeochemical responses in the Sargasso Sea in response to reductions in winter mixing: **M W Lomas**, R J Johnson, N R Bates, D K Steinberg

0845h **IS51A-04** IGMETS and Onward: International Efforts in Plankton and Ecosystems Time Series Research: **T O'Brien**, L Lorenzoni

0900h **IS51A-05** Plugged In: Novel Sensor Development by External Researchers for Deployment on the Ocean Observatories Initiative Regional Cabled Array: **M Vardaro**, O E Kawka, W Ruef, D S Kelley

0915h **IS51A-06** Sustained Observing from the Ocean Observatories Initiative (OOI): **A J Plueddemann**, J H Trowbridge, E P Dever, D S Kelley, M Brennan-Tonetta

0930h **IS51A-07** Using Continental Shelf Glider Data to Investigate the Relationship between Oxygen and Organic Material in the Marine Environment: **R Iles**, S F DiMarco, A Knap, N D Walker

0945h **IS51A-08** THEMO - Eastern Mediterranean Ocean Observatory: influences of the eastern Mediterranean gyre on current structure and biomass distribution: **S F DiMarco**, A H Knap, S A Yvon-Lewis, J Walpert, R Diamant, I Berman-Frank

MARINE ECOLOGY AND BIODIVERSITY

ME51A 7A, UL

Friday 0800h

Exploring and Characterizing Deep- and Coastal Ocean Soundscapes I *(joint with OB, PI)*

Moderators: **Adrienne Copeland**, NOAA Ocean and Atmospheric Research; **Robert Dziak**, NOAA Newport

0800h **ME51A-01** Joint Monitoring Programme for Ambient Noise in the North Sea: **N Kinneging**, M Andersson, S Robinson, C DeJong, J Fischer, N D Merchant, J Tougaard

0815h **ME51A-02** Contributors to the Arctic Acoustic Environment: Describing the Puzzle Pieces: **M Castellote**, C Berchok, D W Ponirakis, A Brewer, Y Shiu, C W Clark, J M Kimber, D F Woodrich

0830h **ME51A-03** The Competing Roles of Vessels, Wind and Waves in Oregon's Shallow Water Coastal Soundscape: **J Haxel**, S Nieukirk, L Torres

0900h **ME51A-05** Characterizing the soundscape in deep water off Hawaii: **K Merkens**, S Baumann-Pickering, J S Trickey, A Allen, E Oleson

0915h **ME51A-06** Temperate reef soundscapes exhibit similar temporal patterns but distinct spectral content: a comparison of natural and artificial reefs: **R Van Hoeck**, A Paxton, D R Bohnenstiehl, J C Taylor, J Fodrie, D P Nowacek, C M Voss, C H Peterson

0930h **ME51A-07** Considering the Soundscape from the Larval Fish Perspective: Predicting the Depth and Frequency Dependence of the Acoustic Cues Received during the Settlement Process: **A Salas**, M S Ballard, T A Mooney, P S Wilson

0945h **ME51A-08** Hot loud ocean: temperature drives acoustic output by a dominant biological sound-producer: **T A Mooney**, A Lillis

MARINE GEOLOGY AND SEDIMENTOLOGY

MG51A 5B, UL

Friday 0800h

Sediment Delivery, Transport, and Deposition in Marine and Lacustrine Environments I *(joint with CP)*

Moderators: **Courtney Harris**, Virginia Institute of Marine Science; **Guan-hong Lee**, Inha University

0800h **MG51A-01** A multi-wavelengths algorithm to estimate Suspended Particulate Matter (SPM) from Ocean Color Remote Sensing: **J Tavora**, E Boss

0815h **MG51A-02** Sources and Triggers of Seabed Remobilization Within Canyon Head Environments on the Cascadia Margin: **A S Ogston**, E Lahr, A T Fricke, H Glover, K J Rosenberger, D J Nowacki

0830h **MG51A-03** *The formation of turbidity maximum zones by tidal straining in regions of freshwater influence*: **R Flores Audibert**, S Rijnsburger, A R Horner-Devine, N Kumar, A J Souza, J Pietrzak

0845h **MG51A-04** Fate of Ayeyarwady (Irrawaddy) and Thanlwin (Salween) Rivers Sediments in the Andaman Sea and Bay of Bengal: **P Liu**, S A Kuehl, A C Pierce, J R Williams, N E Blair, C K Harris, D W Aung

0900h **MG51A-05** Comparing Distributary-Channel Hydrodynamics and Sediment Dynamics in a Tide-Dominated, Tropical Delta: The Ayeyarwady River Delta, Myanmar: **H Glover**, A S Ogston, A T Fricke, C Nittrouer, C Aung, T Naing, K Kyu Kyu, H Htike

0915h **MG51A-06** Modeling the effects of dam removal on coastal lagoon dynamics over multiple time scales: **K Scheu**, S McWilliams, D Revell, C A Jones

0930h **MG51A-07** Wave-Enhanced Tidal Sediment Transport on the Huanghe (Yellow River) Delta Front: **G C Kineke**, M Mullane, L L Kumpf

OCEAN BIOLOGY AND BIOGEOCHEMISTRY

OB51A 3, UL

Friday 0800h

Beyond Just Discovery in the Ocean's Midwater: Novel and Mechanistic Approaches to Understanding Mesopelagic and Bathypelagic Ecosystems I *(joint with ME, MM)*

Moderators: **Joel Llopiz**, Woods Hole Oceanographic Institution; **Christopher Bassett**, Applied Physics Laboratory, University of Washington

0800h **OB51A-01** Status and trend of mesopelagic ecosystems using vessel acoustics and a profiling lagrangian acoustic optical probe: **R Kloser**, H Kunnath

0815h **OB51A-02** Building midwater baselines: Examining the variability of mesopelagic scattering layer depths and behaviors across the Clarion-Clipperton Fracture Zone (CCZ): **J N Perelman**, E Firing, J Drazen

0830h **OB51A-03** Intense mesopelagic acoustic backscattering in northwest Atlantic anticyclonic eddies: **A Della Penna**, P Gaube

0845h **OB51A-04** Taking a closer look into the deep scattering layer - using broadband acoustics to identify mesopelagic organisms *in situ*: **M D Agersted**, B Khodabandeloo, T Klevjer, G Macaulay, S Rosen, E García-Seoane, E Strand, M Underwood, W Melle

0900h **OB51A-05** Using Remotely Operated Vehicles and Active Acoustics to Study the Distribution of Mesopelagic Fauna: **H Leavitt**, A Copeland, A N Netburn, M Ford

0915h **OB51A-06** At-sea testing of the *Mesobot* midwater robot: **D Yoerger**, M Curran, J Fujii, D Gomez-Ibanez, A Govindarajan, J Howland, J Llopiz, P H Wiebe, B Hobson, K Katija, M Risi, B H Robison, S Rock, J A Breier Jr, C J Wilkinson

0930h **OB51A-07** Vertical migration's why and when revisited with new technology: Tracking individual timing to understand the adaptive significance of vertical migration: **K Benoit-Bird**, M A Moline, B Southall

0945h **OB51A-08** Predation, fear, and dynamic vertical structure in the mesopelagic: **S Urmy**, K Benoit-Bird, J P Ryan, J Horne

OB51B 2, UL

Friday 0800h

Biogeochemistry in the BGC-Argo Era: From Process Studies to Ecosystem Forecasts I *(joint with IS, OM, PI)*

Moderators: **Paolo Lazzari**, National Institute of Oceanography and Applied Geophysics OGS; **Katja Fennel**, Dalhousie University

0800h **OB51B-01** Deep phytoplankton biomass maxima in the global ocean: a Biogeochemichal-Argo floats investigation: **M Cornec**, A Mignot, L Lacour, L Guidi, R Laxenaire, S Speich, F D'Ortenzio, A Poteau, C Schmechtig, H Claustre

0815h **OB51B-02** Autonomous Measurement of Physically and Biologically Driven Changes in Dissolved Oxygen in the Northern Gulf of Mexico: **K Fennel**, C M Gordon, C Richards, L K Shay, J Brewster

0830h **OB51B-03** In-situ observations of phytoplankton phenology, net primary production (NPP), net community production (NCP), and NCP to NPP ratio in the North Atlantic Ocean with Argo profiling floats: **B Yang**, E Boss, N Haentjens, M Behrenfeld, M C Long, S R Emerson, R Eveleth, S Doney

0845h **OB51B-04** The Ocean's Biological Pump Determined from In Situ Oxygen Measurements on Profiling Floats: **S R Emerson**, B Yang, S Riser

0900h **OB51B-05** Assessing bloom timing and carbon, nutrient, and oxygen budgets from VOS surface, BGC-Argo profiling float, and monitoring data in the Baltic Sea: **H C Bittig**, L Tuomi, G J Rehder, S M Siiriä, J D Müller, B Schneider

0915h **OB51B-06** Southern Ocean BGC-Argo Detect Significant Under Ice Phytoplankton Growth Before Ice Retreat: **M Hague**, M Vichi

0930h **OB51B-07** The Limited Effect of Typhoons on Phytoplankton Dynamics Observed by BGC-Argo: **F Chai**, Y WANG, X Xing, Y Yan

0945h **OB51B-08** Improving marine biogeochemical forecasts through data assimilation of BGC-Argo float data: **G Cossarini**, A Teruzzi, S Salon, L Feudale

OB51C 4, UL

Friday 0800h

Structure, Function, and Biogeochemical Role of Plankton Communities in the Nutrient-Limited Open Ocean I *(joint with CT, ME, MM, MM, NC, NC)*

Moderators: **Tatiana Rynearson**, University of Rhode Island; **Bethany Jenkins**, University of Rhode Island

0800h **OB51C-01** Pelagic *Sargassum* in the Western Tropical North Atlantic: Does the Amazon Plume Drive *Sargassum* Growth?: **J P Montoya**, E K Strope, A Subramaniam, E J Ames, R N Peterson, M Wang, C Hu

0815h **OB51C-02** Assessing community metabolism and flexibility: metabolomics and microbial diversity across the North Pacific Transition Zone and in response to nutrient amendments: **A Boysen**, K Heal, M R Gradoville, N Hawco, B P Durham, R D Groussman, L T Carlson, P Pinedo-Gonzalez, F Ribalet, J P Zehr, R M Bundy, P S John, V Armbrust, A E Ingalls

0830h **OB51C-03** Community Interactions and Nutrient Concentrations Affect Diel Periodicity of Microbial Gene Expression in Oligotrophic Sunlit Waters.: **A Vislova**, A E Romano, J Eppley

0845h **OB51C-04** Proteomic assessment of nitrogen assimilation in the North Pacific Subtropical Gyre: **A E Zimmerman**, M Coleman, J Waldbauer

0900h **OB51C-05** Herbivorous protist grazing balances phytoplankton growth in the North Pacific, leaving little primary production for export.: **H Mcnair**, F Morison, J Graff, T A Rynearson, S Menden-Deuer

0915h **OB51C-06** Microbial Community Structure and Activities during EXPORTS as Revealed by Quantitative 'Omics: **S M Gifford**, G Sharpe, A Zhao, A Marchetti

0945h **OB51C-08** Impacts of dynamic plankton iron quotas on carbon cycle sensitivity to atmospheric iron deposition: **N A Wiseman**, J K Moore

OCEAN CHANGE: ACIDIFICATION AND HYPOXIA

OC51A 11B, UL

Friday 0800h

Interdisciplinary Approaches for Understanding the Biological Consequences of Global Ocean Change I *(joint with IS, OB, PC)*

Moderators: **David Hutchins**, University of Southern California; **Naomi Levine**, University of Southern California

0800h **OC51A-01** Stressor interactions modify ecological and evolutionary responses of phytoplankton to warming: **E Litchman**, M Aranguren-Gassis, C Kremer, D R O'Donnell, M K Thomas, C A Klausmeier

0815h **OC51A-02** The biogeochemical implications of the contrasting responses of iron-limited N_2-fixing cyanobacteria to ocean warming: **N Yang**, C A Merkel, Y A Lin, N M Levine, S Rivero-Calle, H B Jiang, N Hawco, P Qu, F Fu, D A Hutchins

0830h **OC51A-03** Iron(II) concentrations and availability for phytoplankton – Multiple stressor studies of a future Southern Ocean: **H Aflenzer**, P W Boyd, P van der Merwe, K Wuttig, A R Bowie

0845h **OC51A-04** Even Brief, Transitory Exposures to Temperatures Exceeding Decadal Maximum Levels Profoundly Reshapes Coastal California Phytoplankton Community Structure: **J Kling**, M D Lee, F Fu, M Phan, X Wang, P Qu, D A Hutchins

0900h **OC51A-05** Kelp Associated Changes in Seawater Chemistry Connect to Transgenerational Effects in the Purple Urchin, *Strongylocentrotus purpuratus*: **L Kozal**, M J Housh, C Nelson, T S Leach, J M Wong, M Yamamoto, J D Chamorro, G Hofmann

0915h **OC51A-06** Oxygen Dependence of Visual Physiology and Behavior in Marine Invertebrate Larvae and Its Ecological Implications: **L McCormick**, N W Oesch, L A Levin

0930h **OC51A-07** Ocean Acidification Thresholds for Eastern Oysters: **E B Rivest**, M J Brush, R C Zimmerman, V J Hill, A Widrick, S Blachman

0945h **OC51A-08** "Wasting" Time: Phenology and Ecological Impact of Seagrass Wasting Disease in Eelgrass Meadows: **L R Aoki**, O Graham, D Harvell, S Dayal, T Stephens, J Stokes, B Rappazzo, C Gomes

OCEAN DATA MANAGEMENT

OD51A 5A, UL

Friday 0800h

Data Science for Modern Oceanography: Statistics, Machine Learning, Visualization, and More I *(joint with OB, OM, PL)*

Moderators: **Alison Gray**, University of Washington; **Mikael Kuusela**, Carnegie Mellon University

0800h **OD51A-01** When data arrive as curves: an overview of Functional Data Analysis methods in oceanography: **D Nerini**, E Pauthenet, P Monestiez, C Guinet, F Roquet, M Gurvan, F Ménard, C Menkes, A Bertrand

0815h **OD51A-02** A Functional Data Approach to the Argo Project: **D Yarger**, T Hsing, S Stoev

0830h **OD51A-03** The thermohaline modes of the global ocean: **E Pauthenet**, F Roquet, G Madec, J B Sallee, D Nerini

0845h **OD51A-04** A New Bottom Water Climatology Using a Stacked Random Forest and Objective Mapping Approach: **P D Lavin**, G C Johnson

0900h **OD51A-05** Detecting rainfall through prediction of precipitation forcing in the salinity balance equation: **F Bingham**, O Chkrebtii

0915h **OD51A-06** Rethinking Prior Approaches – Bayesian Neural Networks for Information Retrieval from Ocean Color: **S E Craig**, E Karakoylu, D Gray

0930h **OD51A-07** Spatio-temporal changes in upper ocean heat content estimates: an internationally-coordinated intercomparison: **A Savita**, C M Domingues, T Boyer, S A Good, V V Gouretski, M Ishii, G C Johnson, J M Lyman, J K Willis, D Monselesan, J Antonov, S A Wijffels, R Cowley, S J Marsland, P Dobrohotoff, W R Hobbs, J Church

0945h **OD51A-08** Non-Gaussian Process Modeling of Argo Float Data: **J Wallin**

OD51B 14B, Mezzanine

Friday 0800h

Integrating, Disseminating, and Visualizing Quality Data at the Regional Scale to Support Resilient Coastal Communities I Panel *(joint with ED, IS, SI)*

Moderators: **Gerhard Kuska**, Mid-Atlantic Regional Association Coastal Ocean Observing System; **Debra Hernandez**, Southeast Coastal Ocean Observing Regional Association. SECOORA

0800h **OD51B-01** Optimizing Stakeholder Requirements with Pan-Regional Ecosystem Predictions: **C Anderson**, C A Edwards, A L Kurapov, A M Moore, E L Hazen, J Fiechter, J A Newton, H Ruhl

0815h **OD51B-02** Meeting Stakeholder Needs in the Pacific Northwest US via the NANOOS Visualization System: **J A Newton**, C M Risien, T Tanner, E Mayorga, J C Allan, M Kosro, C M Seaton

0830h **OD51B-03** Data into Action: the Making of an Early Warning System Prototype for Lake Erie: **K Paige**, R Pearson, T Kearns, D Fitch

0845h **OD51B-04** Piloting Tool for Better Ocean Observing in the Gulf of Mexico.: **L Belabbassi**, R D Currier, B A Kirkpatrick

0900h **OD51B-05** The Alaska Ocean Observing System Data Center: Tools and Technologies for the New Arctic: **M McCammon**, C Janzen, R Bochenek

0915h **OD51B-06** PacIOOS Voyager: Enhancing Decision-Making for Stakeholders in the Pacific Islands: **J T Potemra**, M Iwamoto, J Maurer, F Langenberger

0930h **OD51B-07** Using the MARACOOS OceansMap Portal to Understand Relationships Between the Cold Pool and Coastal Community Resilience: **K Knee**, M F Crowley, G Kuska, M Ford

0945h **OD51B-08** Data Access for the Southeast US Coasts and Oceans: The SECOORA Data Portal and Hurricane-Specific Service Offerings: **D L Hernandez**, R J Bochenek, J Dorton, B Stone, A Wakely, K Wilcox

PAST, PRESENT AND FUTURE CLIMATE

PC51A 1A, UL

Friday 0800h

Marine Heat Waves and Ocean Biogeochemical Extremes I *(joint with AI, ME, OC, PI, PS)*

Moderators: **SOFIA Darmaraki**, Meteo-France/CNRM; **Thomas Froelicher**, Universtity of Bern; **Hillary Scannell**, University of Washington Seattle; **Robert Schlegel**, Dalhousie University

0800h **PC51A-01** Changes in marine heatwaves globally over the 20th and 21st centuries: **E Oliver**, M Donat, M T Burrows, P J Moore, D E Smale, L Alexander, J Benthuysen, M Feng, A Sen Gupta, N J Holbrook, S Perkins-Kirkpatrick, H A Scannell, S E Straub, M S Thomsen, T Wernberg

0815h **PC51A-02** Extreme Marine Heatwaves –common characteristics, drivers and impacts: **A Sen Gupta**, M S Thomsen, J Benthuysen, A J Hobday, E Oliver, L Alexander, M T Burrows, M Donat, M Feng, N J Holbrook, S Perkins-Kirkpatrick, P J Moore, R Rodrigues, H A Scannell, A Taschetto, C Ummenhofer, T Wernberg, D E Smale

0830h **PC51A-03** Recent Extremes in North Pacific Climate and the 2019 Alaskan Heatwave: **E Di Lorenzo**, D J Amaya

0845h **PC51A-04** The 2019 Reappearance of the Northeast Pacific Marine Heatwave: **H A Scannell**, S Riser, L Thompson

0900h **PC51A-05** What Caused the Warm Anomalies at Depth in the Northern Gulf of Alaska in 2019?: **N A Bond**, P J Stabeno

0915h **PC51A-06** Deep marine heatwaves: relating drivers and characteristics.: **A Schaeffer**, Y Elzahaby, M Roughan

0930h **PC51A-07** Mediterranean Marine Heatwaves: Past Variability, Future Evolution and Physical Drivers: **S Darmaraki**, S Somot, R Waldman, F Sevault, P Nabat

0945h **PC51A-08** Using a Long-term Landsat Timeseries to Understand the Effect of Marine Heatwaves on Unprecedented Declines in Northern California Bull Kelp: **M L McPHERSON**, D Finger, R M Kudela, H F Houskeeper

PHYSICAL-BIOLOGICAL INTERACTIONS

PI51A 7B, UL

Friday 0800h

Population Connectivity in Aquatic Ecosystems I *(joint with ME)*

Moderators: **Atsushi Fujimura**, University of Guam; **Satoshi Mitarai**, Okinawa Institute of Science and Technology

0800h **PI51A-01** Modelling mussel larval distribution in the Limfjord for optimal site selections of mussel farming: **A Pastor Rollan**, M Maar, J Larsen, C Saurel, J K Petersen

0815h **PI51A-02** Physical connectivity simulations reveal dynamic linkages between coral reefs in the southern Red Sea and the Indian Ocean: **Y Wang**, D E Raitsos, G Krokos, J A Gittings Sr, P Zhan, I Hoteit

0830h **PI51A-03** Circulation in the Seaflower Reserve and its potential impact onbiological connectivity: **L F Lopera Garcia**, Y M Cardona, P A Zapata-Ramírez

0845h **PI51A-04** Connectivity patterns of mesophotic and deep-sea corals in the Gulf of Mexico: **S Herrera**, M Galaska, G Liu, P J Etnoyer, A Bracco, A Quattrini

0900h **PI51A-05** How Wayfinders Modulate Dispersal Kernels and Population Connectivity - A Modeling Perspective: **A C Vaz**, C B B Paris

0915h **PI51A-06** They Came from the Pacific! Ecological Connectivity between the Pacific and Atlantic Oceans via a Changing Arctic: **S Kelly**, K Popova, Y Aksenov, A Yool

0930h **PI51A-07** Simple Metrics of Ecological Connectivity for Application to the Design of Marine Protected Areas: **A Balbar**, A Metaxas

0945h **PI51A-08** Landscape Genetic Method to Explain Intra- and Inter-Island Propagule Transport of Mangrove Species in Okinawa Islands: **M K Thomas**, Y Nakajima, S Mitarai

PHYSICAL OCEANOGRAPHY: MESOSCALE AND LARGER

PL51A 15A, Mezzanine

Friday 0800h

Ocean Tides: From Planetary to Turbulent Scales I *(joint with CP, OM, PI)*

Moderators: **Maarten Buijsman**, University of Southern Mississippi; **Mattias Green**, Bangor University

0800h **PL51A-01** Improving tidal accuracy in a high-resolution global ocean circulation model: **J F Shriver**, J G Richman, I Souopgui, B K Arbic, M C Buijsman

0815h **PL51A-02** 4.5 billion years of Earth-Moon evolution from high-level ocean tide and orbital dynamics models: First results: **B K Arbic**, H Daher, J G Williams, J K Ansong, D H Boggs, M Müller, M Schindelegger, A Adcroft, J Austermann, B D Cornuelle, E Crawford, O B Fringer, H C P Lau, S J Lock, A C Maloof, D Menemenlis, J X Mitrovica, M Green, M Huber

0830h **PL51A-03** Antarctic ice-shelf thinning drives 21st-century changes in global tides: **M Schindelegger**, M Green, R Rietbroek, N Golledge, L P Jackson

0845h **PL51A-04** The Potential of SWOT Data for Mapping Estuarine and Coastal Tides: **P Matte**, S Innocenti, A Albahadily, S A Talke, D A Jay, V Fortin, N Bernier, Y Secretan, M Simard

0900h **PL51A-05** The Problematic psi1 Tide: **R D Ray**, B K Arbic, J P Boy, G D Egbert, S Erofeeva, L Petrov, J F Shriver

0915h **PL51A-06** M2-Internal-Tide Generation in a 0.1 Degree Global Simulation of Circulations and Tides with Realistic Topography: **J S von Storch**, Z Li

0930h **PL51A-07** The Generation and Fate of internal tides on the North West European Shelf: **J Polton**, M V Luneva, J T Holt

0945h **PL51A-08** Numerical investigation of variable reflection of the mode-1 internal tide from the Tasmania continental slope.: **D Brazhnikov**, H L Simmons, S M Kelly

PHYSICAL OCEANOGRAPHY: MESOSCALE AND SMALLER

PS51A 15B, Mezzanine

Friday 0800h

Defining the New Frontiers of Ocean Mixing Research I *(joint with CT, OB, OM)*

Moderators: **Toshiyuki Hibiya**, University of Tokyo; **Naomi Harada**, Japan Agency for Marine-Earth

0800h **PS51A-01** The Modulation of Internal Wave Propagation and Breaking in the Thermocline: **R Pinkel**

0815h **PS51A-02** Tide-Topography Interaction and Currents: Asymmetries in Internal Wave Breaking: **K G Lamb**

0845h **PS51A-04** Turbulent Dissipation Rate and Mixing Variations in the Polar Front of the Southern Ocean: **L N Ferris**, D Gong, T Ijichi, S Merrifield, J Shapiro, L St Laurent

0900h **PS51A-05** Overview of OMIX project “Ocean mixing processes: impact on biogeochemistry, climate and ecosystems”: **I Yasuda**, S Masuda, J Nishioka, X Guo, N Harada, S I Ito, T Hibiya, H Hasumi, Y Yoshikawa, H Obata, H Tatebe

0915h **PS51A-06** Intensified vertical mixing around various sea mounts along the Kuroshio and its contribution to the ecosystem: **T Matsuno**, X Guo, H Nakamura, E Tsutsumi, T Senjyu, T Endoh, J Zhang, K Ichikawa, T Kobari, N Yoshie, D Hasegawa, T Nagai, A Nishina, A Sakai, T Noguchi, M H Chang, Y J Yang, S Jan, C Villanoy, K Lee, D Yanagimoto, I Yasuda

0930h **PS51A-07** Direct estimates of turbulent mixing in the Indonesian Seas and its impact on the water-mass transformation: **T Nagai**, T Hibiya, F Syamsudin

0945h **PS51A-08** Enhanced Turbulent Mixing in the Equatorial Thermocline: **K J Richards**, A Natarov, Y Jia

SOCIAL-OCEAN SCIENCE INTERACTIONS AND SDGS

SI51A 10, UL

Friday 0800h

Ocean Renewable Energy and Synergies with Ocean Technologies I *(joint with CP, IS, OM)*

Moderators: **Bryson Robertson**, Oregon State University; **Zoe Hutchison**, University of Rhode Island Narragansett Bay

0800h **SI51A-01** How useful is tidal-stream energy for electricity supply?: **M J Lewis**, J McNaughton, G Todeschini, M Togneri, I Masters, M Allmark, T Stallard, S P Neill, A Goward Brown, P E Robins

0815h **SI51A-02** Tidal Energy Resource Characterization in the Western Passage, Maine, USA: **M Fogarty**, L Kilcher

0830h **SI51A-03** Strong Waves-Current-Turbulence Interactions in a complex environment : application to Alderney Race: **A C Bennis**, A Feddy, B D B Pascal, Y Barbin, F Dumas, L Furgerot, G Lopez, L Marie, Y Méar, M Morillon, E Poizot, A Sentchev, L Wyatt

0845h **SI51A-04** The importance of local winds in wave energy resource assessment: **L Kilcher**, Z Yang, G Garcia-Medina, A Bharath

0900h **SI51A-05** Characterizing Wave Energy Resources for Gulf of Mexico, Puerto Rico, and U.S Virgin Islands Using an Ultra High-Resolution Wave Model: **N Allahdadi**, R He, C Chartrand, V S Neary

0915h **SI51A-06** Assessment of Geo-Hazards to Floating Offshore Wind Farms in the US Pacific Coasts: **T S Tajalli Bakhsh**, T LaPierre, K Simpson, J Rowe, M L Spaulding, J K Miller, D O'Connell

0930h **SI51A-07** *Application of a Phase-Resolving Wave Model to Enhance the Capabilities of a Wave Energy Converter Simulation Tool*: **F Ticona Rollano**, Y H Yu, G Garcia-Medina, Z Yang

AIR-SEA INTERACTIONS

AI52A 14A, Mezzanine

Friday 1030h

Processes Affecting Air-Sea Exchange and the Biogeochemistry of the Upper Ocean II *(joint with CT, CP, IS, OB, OM, PI)*

Moderators: **Andrew Wozniak**, University of Delaware; **Mariana Ribas Ribas**, Carl von Ossietzky Universität Oldenburg

1030h **AI52A-01** Oceanic Efflux of Ancient Marine Dissolved Organic Carbon in Primary Marine Aerosol: **S R Beaupre**, D J Kieber, W C Keene, M S Long, J R Maben, X Lu, Y Zhu, A A Frossard, J D Kinsey, P Duplessis, R Chang, J Bisgrove

1045h **AI52A-02** Properties of Seawater Surfactants Associated with Atmospheric and Primary Marine Aerosol Particles: **A A Frossard**, T Burdette, R Bramblett

1100h **AI52A-03** Ice nucleating particles carried from below a phytoplankton bloom to the Arctic atmosphere: **J N Cross**, J Creamean

1115h **AI52A-04** Experimental enrichment of the sea surface microlayer from rising bubbles, the duality of breaking waves: **T B Robinson**, O Wurl, H A Giebel

1130h **AI52A-05** Spatiotemporal Variability in the Surface Microlayer of Delaware Bay: **N R Coffey**, J I Czarnecki, A M Ebling, A S Wozniak

1145h **AI52A-06** Enhanced production of dissolved and particulate organic matter in the presence of microplastics at the air-sea interface: **L Galgani**, S A Loiselle

1200h **AI52A-07** Drought-enhanced dust as a driver of decadal changes in Tasman Sea phytoplankton: **J Llort**, R Matear, P G Strutton, A R Bowie, Z Chase

1215h **AI52A-08** Photochemical Production and Biological Consumption of Carbon Monoxide (CO) in the Sea Surface Microlayer of Temperate Coastal Waters: Implications for Air-sea CO Exchange: **Y Sugai**, K Tsuchiya, S Shimode, T Toda

COASTAL AND ESTUARINE PROCESSES

CP52A 9, UL

Friday 1030h

Extreme Sea Levels and Coastal Flood Risk II *(joint with OM, PC, PS)*

Moderators: **Sönke Dangendorf**, Old Dominion University; **William Sweet**, NOAA

1030h **CP52A-01** Modeling Extreme Water Levels in Puget Sound: **B Tehranirad**, A W Stevens, E Grossman, D J Nowacki, S C Crosby, L H Erikson

1045h **CP52A-02** Data-driven Modeling of Global Storm Surges: **M Tadesse**, T Wahl

1100h **CP52A-03** Probabilistic projections of high-tide flooding frequency in the United States during the 21st century: **P R Thompson**, B Hamlington, M Merrifield, W Sweet

1115h **CP52A-04** On the Changing Pattern of Seasonal Flooding Along the U.S. East Coast: **T Ezer**

1130h **CP52A-05** On the key influence of remote climate variability from Tropical Cyclones, North and South Atlantic mid-latitude storms on the coast of West Africa: **J Boucharel**, R Almar, E Kestenare

1145h **CP52A-06** Predicting storm wave runup at Imperial Beach, California: **J W Fiedler**, A Young, W C O'Reilly, B C Ludka, C Henderson, R T Guza, M Merrifield

1215h **CP52A-08** Tidally-driven interannual variation in extreme sea level probabilities in the Gulf of Maine: **H E Baranes**, J D Woodruff, S A Talke, R E Kopp, R Ray, R M Deconto

CP52B 8, UL

Friday 1030h

The Transformation and Fate of Carbon at the Land-Ocean Interface and Beyond I *(joint with CT, OB)*

Moderators: **Michael Seidel**, University of Oldenburg; **Nicholas Ward**, Pacific Northwest National Laboratory

1030h **CP52B-01** Organic Matter Transformations During Transit Through the San Francisco Bay Estuary: **P J Hernes**, C Y Chuang, J Harfmann, F Guillemette, R G Spencer, B A Bergamaschi, K Kaiser

1045h **CP52B-02** Nitrogen controls on carbon accumulation in coastal system: Not all nitrogen is created equal: **J Bowen**, A N Bulseco, A E Murphy, J H Vineis

1100h **CP52B-03** Variation in the Flocculation of Dissolved Organic Matter in Two Contrasting Boreal River-Estuarine Gradients: **C Khoo**, R E Sipler, S E Ziegler

1115h **CP52B-04** Iron diagenesis controls CDOM sedimentary accumulation and optical properties in near-surface sediments of river-dominated continental shelves: **J S Beckler**, S Owings, E M Eitel, E Metzger, A Stancil, C Rabouille, M Taillefert

1200h **CP52B-07** Rapid Variability in Subsurface Dissolved Oxygen along the Terrestrial-Aquatic-Interface Driven by Tidal Inundation: **R N Ghosh**, D D Shooltz, M J Freeman, R Loloee, T Ball, C McIntire, E Mollon, N Ward, G A Gill, A Myers-Pigg, L J Kuo

1215h **CP52B-08** Photochemical dissolution of buoyant microplastics to dissolved organic carbon: Rates and microbial impacts: **A Stubbins**, L Zhu, S Zhao, D Li, T B Bittar, R G Spencer, D C Podgorski, K L Lavender Law

HIGH LATITUDE ENVIRONMENTS

HE52A 1B, UL

Friday 1030h

Moving Beyond Melt: The Impact of Melting Glaciers, Icebergs, and Sea Ice on Ocean Environments II *(joint with CT, PI, SI)*

Moderators: **Dustin Carroll**, Moss Landing Marine Laboratories; **Fiammetta Straneo**, Scripps Institution of Oceanography

1030h **HE52A-01** Time-dependent freshwater fluxes from deep and shallow meltwater sources under Antarctica's large ice shelves: **S Adusumilli**, H A Fricker, B Medley, L Padman, M Siegfried

1045h **HE52A-02** Direct and indirect Contributions of Ice Shelves to Micronutrient Supply to the Surface Waters around Antarctica: **M S Dinniman**, P St-Laurent, K R Arrigo, E E Hofmann, G van Dijken

1100h **HE52A-03** High-resolution ocean model illustrates how ice-ocean interactions impact the CO_2 uptake of an Antarctic coastal polynya: **P L Yager**, H Oliver, P St-Laurent, R M Sherrell, S E Stammerjohn

1115h **HE52A-04** The Influence of Glacier Cover on Iron Cycling in Patagonian Fjords: **J Hawkings**, R M Sherrell, T M Conway, J Wadham, K R Hendry, M Sieber, R Torres, G Daneri, S Bertrand, A Beaton, A Kellerman, M Marshall, H Pryer, H C Ng, V Roccanova, K Bu, L G Benning, R G Spencer

1130h **HE52A-05** From ice to ocean: Understanding the impacts of melting glaciers on marine biogeochemical cycles in the Canadian Arctic Archipelago: **M Bhatia**, S Waterman, D Burgess, P Williams, M Roberts, C Dhoonmoon, E M Bertrand

1145h **HE52A-06** Airborne Lidar Measurements of Ice and Phytoplankton in the Arctic Ocean: **N Marshall**, J H Churnside

1200h **HE52A-07** Modeling the ecological and biogeochemical changes of the Arctic Ocean caused by the recent decline of sea-ice: **M Manizza**, D Carroll, D Menemenlis, H Zhang, C E Miller

1215h **HE52A-08** The role and relevance of rising air temperatures to bluff erosion in Arctic Alaska: **F J Oberle**, L H Erikson, A Gibbs, B M Richmond, T D Lorenson

OCEAN OBSERVATORIES, INSTRUMENTATION AND SENSING TECHNOLOGIES

IS52A 11A, UL

Friday 1030h

The Tropical Pacific Observing System: Meeting the Needs of Researchers and Stakeholders I *(joint with OB, PL)*

Moderators: **Shelby Brunner**, NOAA Ocean and Atmospheric Research; **Janet Sprintall**, University of California San Diego; **Meghan Cronin**, NOAA Pacific Marine Environmental Laboratory; **Adrienne Sutton**, NOAA Pacific Marine Environmental Laboratory

1030h **IS52A-01** Monitoring impacts and array-design implications of wind observations from the tropical Pacific moored buoys: **A M Chiodi**, D Harrison

1045h **IS52A-02** Surface Wind and Humidity in the Eastern Tropical Pacific: Regimes and Variability as Observed by Saildrone Unmanned Surface Vehicles: **S Wills**, M F Cronin, D Zhang

1100h **IS52A-03** Tropical Pacific Air-sea Interaction Processes and Biases in CESM2: **H H Wei**, A Subramanian, K B Karnauskas, C A DeMott, M R Mazloff, M A Balmaseda

1130h **IS52A-05** Penetration of surface-forced diurnal cycles observed by enhanced TAO moorings across the tropical Pacific: **J Masich**, W S Kessler, M F Cronin, K Grissom

1145h **IS52A-06** Diagnosing diathermal velocities in the eastern tropical Pacific: **A L Deppenmeier**, F Bryan, W S Kessler, L Thompson

1200h **IS52A-07** Progress and Challenges in Representing Tropical Pacific Ocean Dynamics in A Global Operational System: **F Gasparin**, E Greiner, S E Cravatte, J M Lellouche, M Hamon

1215h **IS52A-08** TPOS 2020: Implementation and Governance: **D M Legler**, S Brunner, K L Hill

MARINE ECOLOGY AND BIODIVERSITY

ME52A 7A, UL

Friday 1030h

Biologging Ecology and Oceanography: Integrative Approaches to Animal-Borne Observations in a Changing Ocean I *(joint with IS, OB)*

Moderators: **T Aran Mooney**, Woods Hole Oceanographic Institution; **Lauran Brewster**, Florida Atlantic University; **Amy Kukulya**, Woods Hole Oceanographic Institution

1030h **ME52A-01** Connecting the Dots: Refining Irregular Blacktip Shark Movement Data: **B Bowers**, S Kajiura

1042h **ME52A-02** Advancing Understanding of Goliath Grouper Behavioral Ecology: **L Brewster**, M J Ajemian, B Degroot, M McCallister, J Locascio, L M Cherubin

1054h **ME52A-03** An At-Sea Assessment of Argos Location Accuracy for Three Species of Large Whales: Deep-Diving Behavior Increases Location Error: **D M Palacios**, L M Irvine, M Winsor, T Follett, B R Mate

1106h **ME52A-04** Development and testing of vibration-sensing tags for assessing fish and invertebrate vocalizations: **F Jensen**, D Mann, A N Rice, T A Mooney

1118h **ME52A-05** Diel Vertical Migrations and Climb-and-Glide Ascents in Veined Squid (*Loligo forbesi*)': **S Cones**, K Katija, K A Shorter, F Jensen, D Mann, P Afonso, J Fontes, A Z Wang, T A Mooney

1130h **ME52A-06** Let's get it together: Using Darwin Core to standardize bio-logging data: **A Benson**, S C Davidson, P Desmet, H Dettki, P Newman, J Pye

1142h **ME52A-07** Movements of Reef Manta Rays in a Large Marine Protected Area at Multiple Spatio-Temporal Scales: **S Andrzejaczek**, T Chapple, D Curnick, A B Carlisle, M Castleton, D Jacoby, R Schallert, D Tickler, B Block

1154h **ME52A-08** New Insights into Blue, Fin, and Humpback Whale Feeding, Movements, and Impacts of Human Activities from Medium-duration Archival Tags: **J Calambokidis**, J Fahlbusch, A R Szesciorka, A Sirovic, B Southall, D Cade, A S Friedlaender, W Oestreich, J A Goldbogen

1206h **ME52A-09** The Scale of the Whale: Using Video-tag Data to Determine Sea Ice Utilization of Antarctic Minke Whale (Balaenoptera Bonaerensis): **J Linsky**, N Wilson, D Cade, J A Goldbogen, D W Johnston, A S Friedlaender

1218h **ME52A-10** Using Remotely Transmitted Accelerometer Data Collected from Pop-Up Satellite Archival Tags to Predict Spawning in Wild Mahi-Mahi (*Coryphaena hippurus*): **L Schlenker**, J Stieglitz, R Faillettaz, C Hin Lam, G Cox, R Heuer, C Pasparakis, R Hoenig, E Babcock, D Benetti, C B B Paris, M Grosell

MARINE GEOLOGY AND SEDIMENTOLOGY

MG52A 5B, UL

Friday 1030h

Sediment Delivery, Transport, and Deposition in Marine and Lacustrine Environments II *(joint with CP)*

Moderators: **Andrea Ogston**, University of Washington Seattle; **D. Corbett**, UNC Coastal Studies Institute

1030h **MG52A-01** Material Budget and Contamination History of a Mud Depocenter System in the Gulf of Cadiz: **T J J Hanebuth**, M L King, I Mendes, S Lebreiro, F Lobo

1045h **MG52A-02** Geotechnical Investigation of Fine-Grained Top Layer Stratification in the York Estuary, Virginia: **N Stark**, D Kiptoo, C Bilici, G Massey, C Wright, C T Friedrichs

1100h **MG52A-03** Shoreline erosion impacts on Chesapeake Bay water clarity: an analysis of effects on light attenuation using a coupled hydrodynamic-biogeochemical model: **J S Turner**, P St-Laurent, M A M Friedrichs, C T Friedrichs

1115h **MG52A-04** Boundary layer fluxes over restored oyster reefs: **L P Sanford**, M L Jackson, K Kahover, E Kaplan, K Givens, J C Cornwell, L Harris, A Colden

1130h **MG52A-05** A Study of Heavy Metal and Suspended Particulate Fluxes Within the Mobile River System: **J Stewart**, N Dimova

1145h **MG52A-06** Suspended Sediment Dynamics, Marsh Accretion, and Cold Fronts in Coastal Louisiana: **K Valentine**, G Mariotti

1200h **MG52A-07** Using Coupled Modeling Suites to Understand Sediment Dynamics in the Land Ocean Interaction Zone: **Z G Xue**, Z Zang, D Yin, K Xu, J Chen, D Gochis, S J Bentley

1215h **MG52A-08** Role of Marsh-Edge Erosion and Submerged Aquatic Vegetation on Estuarine Sediment Fluxes and Light Attenuation: **J Moriarty**, N K Ganju, T S Kalra, Z Defne

MICROBIOLOGY AND MOLECULAR ECOLOGY

MM52A Poster Hall C-D; eLightning Theater

Friday 1030h

Fungi in the Marine Environment eLightning

(joint with ME, OB)

Moderators: **Brandon Hassett**, University of Tromsø; **Xuefeng Peng**, University of California Santa Barbara

MM52A-03 *eLIGHTNING* Deciphering the fungal communities occurring in the lower oceanic crust using metabarcoding and culturomics: **M Quemener**, G Barbier, V P Edgcomb, G Burgaud

MM52A-05 *eLIGHTNING* Hydrothermal Vent Fungal Communities and Their Putative Roles in Hydrocarbon Degradation at Guaymas Basin: **P Mara**, G Burgaud, G A Ramirez, C M Reddy, S Sylva, D J Beaudoin, A Teske, V P Edgcomb

MM52A-06 *eLIGHTNING* Isotopic examination of nitrogen utilization by marine fungi: **S D Wankel**

MM52A-07 *eLIGHTNING* Fungal contribution to marine nitrogen cycling: **X Peng**, D L Valentine

MM52A-09 *eLIGHTNING* Arctic Marine Fungi: New Approaches To Discern Ecosystem Relevance: **B Hassett**

OCEAN BIOLOGY AND BIOGEOCHEMISTRY

OB52A 3, UL

Friday 1030h

Beyond Just Discovery in the Ocean's Midwater: Novel and Mechanistic Approaches to Understanding Mesopelagic and Bathypelagic Ecosystems II *(joint with ME, MM)*

Moderators: **Annette Govindarajan**, Woods Hole Oceanographic Institution; **Peter Wiebe**, Woods Hole Oceanographic Institution

1030h **OB52A-01** *Application of simultaneous trawl-mounted optic and acoustic methods to study the mesopelagic ecosystem*: **E García-Seoane**, S Rosen, M Underwood, T Klevjer, G Macaulay, M D Agersted, E Strand, W Melle

1045h **OB52A-02** Mesopelagic Ecosystem and Biological Pump Powered by Mesopelagic Fish in the Northern South China Sea: **M Zhou**, X Zhao, Z Chen, Y Wu, X X Sun, J Xu, X Wang, J Zhang, Y Zhu, Z Hu, D Xu, S Zheng

1100h **OB52A-03** The deep-pelagic realm as a 'biological desert'?... hardly. A case study of a highly speciose meso/bathypelagic ecoregion, the Gulf of Mexico.: **T Sutton**, J Moore, A B Cook, A Bernard, R Eytan, M Weber, M Shivji

1115h **OB52A-04** Are Life History Traits of Mesopelagic Fish Stable? An Examination of Reproductive Traits of a Lanternfish in the Central Pacific Ocean: **E Franklin**, R Chen, R Langston, K Longenecker, J Drazen

1130h **OB52A-05** *In situ*, three-dimensional imaging of centimeter-scale biophysical interactions and particle distributions with the deep-sea plenoptic camera EyeRIS: **P Roberts**, J Erickson, D Klimov, R Henthorn, A Sherman, H Ruhl, K Katija

1145h **OB52A-06** Metabarcoding Analysis of Diet Diversity of Mesopelagic Fishes and Salps: **A C Bucklin**, P G Batta-Lona, M Wojcicki, S G Glancy, A Govindarajan, J Llopiz

1200h **OB52A-07** *Interpreting environmental DNA (eDNA) signals: insights from eDNA shedding and decay rates from diverse animal forms*: **E Allan**, A C Lavery, W G Zhang, A Govindarajan

1215h **OB52A-08** The RAD Sampler: Rotary-actuated folding polyhedrons for midwater investigation of delicate marine organisms: **B Phillips**, Z Ern Teoh, K P Becker, G Whittredge, J C Weaver, C Hoberman, D F Gruber, R J Wood

OB52B 2, UL

Friday 1030h

Linking Microbial, Isotope, Micronutrient, and Other Approaches to Understand Carbon and Nutrient Cycling in the Ocean I *(joint with CT, ME)*

Moderators: **Alexis Pasulka**, California Polytechnic State University, San Luis Obispo; **Patrick Rafter**, University of California Irvine

1030h **OB52B-01** Diatom physiology controls silicic-acid leakage in response to iron fertilization: **M Holzer**, B Pasquier, T J DeVries, M A Brzezinski

1100h **OB52B-03** The Agulhas Current enhances the productivity of the subtropical Indian Ocean: evidence from coupled flow cytometry-high sensitivity nitrogen isotope analysis: **K Y Sinyanya**, R Parrott, R Flynn, D Y Walker Dr, Y Ryu, D M Sigman, F Sarah

1115h **OB52B-04** Atmospheric Dust Inputs, Iron Cycling, and Biogeochemical Connections in the South Pacific Gyre: **F J Pavia**, R F Anderson, G Winckler, M Q Fleisher

1130h **OB52B-05** Non-monotonic Export of Bacterially-derived Sinking Particulate Organic Matter to the Deep Ocean: **Y Shen**, T P Guilderson, M McCarthy

1145h **OB52B-06** Toward an Improved Understanding of the Subantarctic Biological Pump: Phytoplankton Group-specific Contributions to and Potential Drivers of Carbon Export in the Indian Sector of the Subantarctic Ocean: **H Forrer**, A N Knapp, T G Bornman, R Thomas, S C Waterworth, R Dorrington, S Fawcett

1200h **OB52B-07** Organic Carbon Production and Remineralization in the Oligotrophic Water Column Assessed Using Compound-specific Stable Isotopic Composition of Particulate Fatty Acids: **M H H Conte**, B Hopkins, M Karagiannis, J C Weber, R Pedrosa Pamies

1215h **OB52B-08** Incorporating phytoplankton genomic traits into cellular resource allocation models: **C Garcia**, G Hagstrom, A Larkin, L Ustick, S Levin, M W Lomas, A Martiny

OB52C 4, UL

Friday 1030h

Structure, Function, and Biogeochemical Role of Plankton Communities in the Nutrient-Limited Open Ocean II *(joint with CT, ME, MM, MM, NC, NC)*

Moderators: **Adam Martiny**, University of California Irvine; **Robert Letscher**, University of New Hampshire

1030h **OB52C-01** Defining Conserved Epibiotic Bacterial Genomes in the *Trichodesmium* Holobiont Using New Isolate Genomes and Field 'Omic Techniques: **E A Webb**, Y Zhao, N Held, E D Graham, A Conover, J Semones, Y Y Feng, F Fu, M A Saito, D A Hutchins, M D Lee

1045h **OB52C-02** Decoupling Between N:P Ratios of Particulate Organic Matter and Seawater: **C T Chien**, M Pahlow, A Oschlies

1100h **OB52C-03** Documenting shifts in diatom physiology across a natural nutrient gradient in the western North Atlantic: **S Lerch**, M Harke, S Setta, T A Rynearson, S Dyhrman, B D Jenkins

1115h **OB52C-04** Production and cross-feeding of nitrite in *Prochlorococcus* populations: **P Berube**, T J O'Keefe, A N Rasmussen, S W Chisholm

1130h **OB52C-05** Synergistic Effects of Combined Viral and Protistan Predation on Marine Cyanobacterium Synechococcus Physiology: **S Floge**, C Howard-Varona, S Roux, B Bowen, R Lau, S M Schwenck, S Schwartz, T Woyke, T Northen, M B Sullivan

1145h **OB52C-06** Induced Nutrient Assimilation in Oligotrophs: Not Beneficial, Not Possible, Both or Neither?: **S Noell**, F Hellweger, S J Giovannoni

1200h **OB52C-07** Understanding the Role of Nutrient Limitation on Plankton Biomass over Arabian Sea via 1-D Coupled Biogeochemical Model and Bio-Argo Observations.: **A Mallissery**, S M G, V Valsala, S B R, F Hamza, B G, C V Naidu

1215h **OB52C-08** POC Export Regulated by Plankton Community Structure in the Contrast Ecosystems of Marginal Sea: **B Huang**, Y Qiu, X Liu, E A Laws, Y Xie

OCEAN CHANGE: ACIDIFICATION AND HYPOXIA

OC52A 11B, UL

Friday 1030h

Interdisciplinary Approaches for Understanding the Biological Consequences of Global Ocean Change II *(joint with IS, OB, PC)*

Moderators: **Emily Rivest**, Virginia Institute of Marine Science; **Catherine Davis**, University of California Davis

1030h **OC52A-01** Predicted Marine Climate Change: Influence of Elevated Temperature and lowered pH on Feeding preference and Egg production of Cyclopoid Copepod *Oithona rigida*: **U K Saleemraja**, V D Ebenezer

1045h **OC52A-02** Bidirectional thermal limitations on invertebrate respiration drive habitat compression in response to climate change: **T H Boag**, C A Deutsch, L E Elder, A Marquez, P M Hull, E A Sperling

1100h **OC52A-03** Resistance of a reef-building coral to hypoxia: **M D Johnson**, S D Swaminathan, E N Nixon, V J Paul, A H Altieri

1115h **OC52A-04** Localized Hypoxia May Have Caused Coral Reef Mortality at the Flower Garden Banks: **K E F Shamberger**, A K Kealoha, S Doyle, J B Sylvan, R D Hetland, S F DiMarco

1130h **OC52A-05** Modeling Hotspots of Jellyfish Blooms in Light of Climate Change in the Northern Gulf of Mexico: **C Li**, H Liu

1145h **OC52A-06** Harnessing computational genomics to explore the dynamics of rapid adaptation to ocean acidification: **M C Bitter**, L Kapsenberg, J P Gattuso, C A Pfister

1200h **OC52A-07** Decreasing Phanerozoic extinction intensity is a predictable consequence of Earth surface oxygenation and metazoan ecophysiology: **R G Stockey**, A Ridgwell, S Finnegan, E A Sperling

1215h **OC52A-08** Impact of temperature trends and ocean temperature surprises on natural and human communities: **A J Pershing**, N Record

OCEAN DATA MANAGEMENT

OD52A 5A, UL

Friday 1030h

Data Science for Modern Oceanography: Statistics, Machine Learning, Visualization, and More II *(joint with OB, OM, PL)*

Moderators: **Alison Gray**, University of Washington; **Mikael Kuusela**, Carnegie Mellon University

1030h **OD52A-01** Machine learning for inference and parametrization of ocean turbulence: **L Zanna**, T Bolton

1045h **OD52A-02** Improve Hydrodynamic Modeling for the Laurentian Great Lakes Using a Combination of Deep Learning and Data Assimilation: **P Xue**, C Huang, Y Wang

1100h **OD52A-03** Cluster-based ocean model evaluation on the Antarctic continental shelf: **Q Sun**, C M Little, A M Barthel

1115h **OD52A-04** Novel characterization and correction of ocean model biases using sparse observations: application to surface ocean radiocarbon: **H D Graven**, G Lim, K Yeung, J Lester, P J Nowack

1130h **OD52A-05** Reconstruction of incomplete spatial data with feature preserving information transport: **S Ameli**, S Shadden

1145h **OD52A-06** Echopype: Interoperable and Scalable Processing of Ocean Sonar Data: **W J Lee**, V Staneva, K Nguyen

1200h **OD52A-07** On the use of the Ocean Virtual Laboratory open tools to prepare training sets for AI deep learning of ocean surface signatures: **F Collard**, L Gaultier, B Holt, S Herlédan, Z El Khoury Hanna, G Guitton

1215h **OD52A-08** Data Science and Signal Processing for Drifter Data: **A Sykulski**, J J Early, J M Lilly, S Olhede, A P Guillaumin

PAST, PRESENT AND FUTURE CLIMATE

PC52A 1A, UL

Friday 1030h

Marine Heat Waves and Ocean Biogeochemical Extremes II *(joint with AI, ME, OC, PI, PS)*

Moderators: **Hillary Scannell**, University of Washington Seattle; **Thomas Froelicher**, Universtity of Bern; **SOFIA Darmaraki**, Meteo-France/CNRM; **Robert Schlegel**, Dalhousie University

1030h **PC52A-01** Double and triple whammies: Compound extremes in ocean biogeochemistry: **N Gruber**, L Gregor, E Koehn, M Munnich, F Desmet, M Vogt, U Hofmann

1045h **PC52A-02** Coupled Climate Stressors along the West Coast of North America: Drought, Marine Heat Waves, HABs, and Hypoxia: **R R Rykaczewski**, M Garcia-Reyes, W J Sydeman, B Black, S J Bograd, M Jacox

1100h **PC52A-03** Oceanographic Processes on North-Central California Margin Plankton: A Heatwave and a Decade of Carbonate Chemistry.: **C Fish**, T M Hill, M L Elliott, C V Davis, D Lipski, J Jahncke

1115h **PC52A-04** Common cause for severe droughts in South America and marine heatwaves in the South Atlantic: **R Rodrigues**, A Taschetto, A Sen Gupta, G R Foltz

1130h **PC52A-05** Changes in variability under projected warming alter ocean acidity extremes: **F Burger**, T L Froelicher, J G John

1145h **PC52A-06** 'Influence of diurnal primary production on projections of future ocean chemistry extremes': **O Torres**, L Kwiatkowski, A J Sutton, J C Orr

1200h **PC52A-07** Partitioning uncertainty in the projection of coral collapse using Large Ensembles of multiple Earth System Models: **S Schlunegger**, K B Rodgers, J L Sarmiento, T L Froelicher, J P Dunne, T Ilyina, Y Takano, J R Christian, M C Long, R Slater, N Rinaldi

1215h **PC52A-08** Using seasonal forecasts to manage impacts of extreme ocean temperatures on marine industries: **C M Spillman**, G A Smith, A J Hobday, J R Hartog, C de Burgh-Day, J P Eveson

PHYSICAL-BIOLOGICAL INTERACTIONS

PI52A 7B, UL

Friday 1030h

Population Connectivity in Aquatic Ecosystems II *(joint with ME)*

Moderators: **Atsushi Fujimura**, University of Guam; **Claire B Paris**, University of Miami

1030h **PI52A-01** Environmental and Biological Drivers of Endangered Leatherback Hatchling (*Dermochelys Coriacea*) Dispersal from a Costa Rican Nesting Population: **N Barbour**, G L Shillinger, A Hoover, S A Williamson, H R Bailey

1045h **PI52A-02** Small-Scale Spatial Variability in Coral Reef Fish Settlement: **K Twyman**, M J Hauff, J J Suca, P Caiger, A Lillis, J Randall, A Apprill, T A Mooney, J Llopiz

1100h **PI52A-03** Utilization of Multiple Tracers to Reassess the Life-History, Movements, and Connectivity of Threatened Osmerid Smelts in San Francisco Bay: **L Lewis**, J A Hobbs, M Willmes, C Denney, J J Glessner, A Finger

1115h **PI52A-04** Population genetics to population genomics: Revisiting multispecies connectivity of the Hawaiian Archipelago using pooled RADseq approaches: **E Barba**, E Conklin, Z Forsman, R J Toonen

1130h **PI52A-05** Spatial Hysteresis: Non-Recovery of Fish Spatial Distributions with Returning Ocean Condition: **M Robertson**, P Regular, J Gao, M J Morgan, F Zhang

1145h **PI52A-06** Behavior Regulates Larval Dispersal for Nearshore Marine Fish Species in an Upwelling Region: **H Killeen**, S Morgan, J L Largier

1200h **PI52A-07** Type-Specific Source Regions for Pelagic *Sargassum* Indicated by Mitochondrial Genotype of the Epiphytic Hydroid *Aglaophenia latecarinata*: **A N Siuda**, A Govindarajan, L Cooney, K Whittaker, D Bloch, R M Burdorf, S Canning, C Carter, S Cellan, F A Eriksson, H Freyer, G Huston, S Hutchinson, K McKeegan, M Malpani, R Petersen-Rockney, M Schultz

1215h **PI52A-08** *Large-scale microbial connectivity across ocean depth*: **E Villarino**, J R Watson, J Woodil, B F Jonsson, A D Barton, J M Gasol, R Massana, C R Giner, G Salazar, C M Duarte, X Irigoien, G Chust

PHYSICAL OCEANOGRAPHY: MESOSCALE AND LARGER

PL52A 14B, Mezzanine

Friday 1030h

Turbulent Pathways and Deep-Ocean Ventilation I *(joint with OM, PC, PS)*

Moderators: **Ali Mashayek**, Imperial College London; **Lynne Talley**, University of California San Diego

1030h **PL52A-01** More Evidence for Boundary Mixing in the Deep Ocean: **L Armi**, B Zheng, J Wang

1042h **PL52A-02** What sets the vertical profile of the deep ocean stratification?: **R M Ferrari**, E Tziperman

1054h **PL52A-03** A Budget for Mixing and Transformation in a Partially Enclosed Deep Basin: **C Spingys**, A Naveira Garabato, S Legg, K L Polzin, E P Abrahamsen, A Forryan, C E Buckingham

1106h **PL52A-04** Abyssal Mixing in the Southwest Pacific Basin: **R Lele**, S G Purkey, J D Nash, A M Thurnherr, C B Whalen, L D Talley, J A MacKinnon, G Voet, S Mecking

1118h **PL52A-05** Diagnosing diapycnal dispersion from tracer evolution and distribution: **X Ruan**, R M Ferrari

1130h **PL52A-06** Role of diapycnal mixing in the circulation and tracer distribution in the Atlantic Ocean: **L Cimoli**

1142h **PL52A-07** Connections between the large-scale flow and turbulence in the Samoan Passage: **J Cusack**, G Voet, M H Alford, J B Girton, G S Carter, L J Pratt, S Tan, K Pearson, D Menemenlis

1154h **PL52A-08** Deep Learning of Finescale Parameterizations of Internal Wave Dissipation: **H Salehipour**, B Kaiser, L J Pratt, K L Polzin

1206h **PL52A-09** Isopycnal Mixing Controls Deep Ocean Tracer Distributions: **C S Jones**, R Abernathey

1218h **PL52A-10** A High-resolution Numerical Study of a Hydrothermal Plume: **G Crystle**, G Roullet, M J Molemaker

PHYSICAL OCEANOGRAPHY: MESOSCALE AND SMALLER

PS52A 15B, Mezzanine

Friday 1030h

Boundary Currents and Shelf/Deep-Ocean Exchange II *(joint with CP, PI, PL)*

Moderators: **Robert Todd**, Woods Hole Oceanographic Institution; **Amandine Schaeffer**, University of New South Wales

1030h **PS52A-01** Shelf-Deep Ocean Exchange in the East Australian Current: **M Roughan**, A Schaeffer, M Archer, P Cetina Heredia, S Contractor, S R Keating, C G Kerry, M Hemming, N Malan, A Siripatana

1045h **PS52A-02** Cross-shelf exchange driven by dipole eddy structures in the East Australian Current.: **N Malan**, M Archer, M Roughan, P Cetina Heredia, A Schaeffer, M Hemming, E Vitarelli, C Rocha

1100h **PS52A-03** Subsurface Thermal Variability in the Central Great Barrier Reef during Two Coral Bleaching Events (2015/16, 2016/17): **J Benthuysen**, S Spagnol

1115h **PS52A-04** Seasonal Characteristics of the Circulation Structure in the Northern Red Sea and Their Relationship with the Thermohaline and Wind Forcing: **L Eyouni**, Z Kokkini, N Zarokanellos, B H Jones

1130h **PS52A-05** Effects of the seasonal reversal of the South China Sea western boundary current on the Gulf of Tonkin dynamics: **J Zavala-garay**, J Wilkin, P Rogowski, E Terrill, R K Shearman, T H Lam

1145h **PS52A-06** Coupled ocean-atmosphere interactions over oceanic boundary currents: **H Seo**

1200h **PS52A-07** Seasonal and interannual variability in the poleward undercurrent off the US West Coast: inferences from observations and a high-resolution regional ocean model: **A L Kurapov**, J A Barth, J L Fisher, D L Rudnick

1215h **PS52A-08** Cross-shore Advection by Subthermocline Eddies: **A Ren**, D L Rudnick

PS52B 15A, Mezzanine

Friday 1030h

Multiscale Oceanic Processes and Air-Sea Interactions in the Kuroshio-Oyashio Extension Region: Observations and Modeling I *(joint with AI, IS, OM)*

Moderators: **Zhaohui Chen**, Ocean University of China; **Ping Chang**, Texas A & M University

1030h **PS52B-01** The Global Sink of Available Potential Energy by Mesoscale Air-Sea Interaction in Observations and High-Resolution Climate Models: **S Bishop**, J Small, F Bryan

1045h **PS52B-02** Dynamical Links between the Decadal Variability of the Oyashio and Kuroshio Extensions: **B Qiu**, S Chen, N Schneider

1100h **PS52B-03** Decadal variability of nutrients and biomass in the Kuroshio Extension: **F Chai**, J Ma, P Lin

1115h **PS52B-04** A Robust Regional Downscaling Ocean Modeling for the Kuroshio Region off Japan: **Y Uchiyama**

1130h **PS52B-05** Challenges of Measuring Abyssal Temperature and Salinity at the Kuroshio Extension Observatory: **N D Anderson**, K A Donohue, M C Honda, M F Cronin, D Zhang

1145h **PS52B-06** Effect of Mesoscale SSTs on Atmospheric Rivers and Heavy Rain Along the West Coast of North America at Subseasonal Time Scales: **X LIU**, P Chang, X Ma

1200h **PS52B-07** Forecasting Remote Atmospheric Responses to Decadal Kuroshio Transitions: Stable vs Unstable States: **L Siqueira**, B P Kirtman, L C Laurindo

1215h **PS52B-08** The fate of storm-generated near-inertial waves in the Kuroshio-Oyashio Confluence: **S Essink**, R C Lien, E L Kunze

SOCIAL-OCEAN SCIENCE INTERACTIONS AND SDGS

SI52A 10, UL

Friday 1030h

Ocean Renewable Energy and Synergies with Ocean Technologies II *(joint with CP, IS, OM)*

Moderators: **Zhaoqing Yang**, Pacific Northwest National Laboratory; **M Reza Hashemi**, University of Rhode Island

1030h **SI52A-01** Establishing Marine Renewable Energy: Using Risk Retirement to Simplify Environmental Permitting: **A E Copping**, M C Freeman, L Hemery, A M Gorton

1045h **SI52A-02** Near-field Spatial and Temporal Benthic Monitoring at the Block Island Wind Farm, USA: **Z Hutchison**, A A Khan, M LaFrance Bartley, P English, J W King

1100h **SI52A-03** Towards Estimating the Biogeochemical Footprint of an Offshore Windfarm: **J Vanaverbeke**, U Braeckman, E De Borger, N Mavraki, E E Toussaint, H Voet, C Van Colen, S Degraer

1115h **SI52A-04** Emitted electromagnetic fields (EMF) and their influence on the behavior of two bottom-dwelling marine species: **Z Hutchison**, A B Gill, P Sigray, J W King

1130h **SI52A-05** Optimization of Wave Energy Converter Array Deployments while Minimizing Potential Environmental Risks: **C A Jones**, S McWilliams, K Raghukumar, G Chang, J Roberts

1145h **SI52A-06** Turbulence in the wake of offshore wind farm foundations and its potential effects on mixing of stratified tidal shelf seas: **L Schultze**, L Merckelbach, S Raasch, N Christiansen, U Daewel, C Schrum, J R Carpenter

1200h **SI52A-07** Applications of Marine Renewable Energy to Powering Ocean Observation Systems: **S Jenne**, R Cavagnaro, R Green, A E Copping

1215h **SI52A-08** A Framework for the Design of Renewably Powered Offshore AUV Servicing Platforms: **M Haji**, J Norheim, O L de Weck

Friday P.M.

AIR-SEA INTERACTIONS

AI53A 14A, Mezzanine

Friday 1400h

Impacts of Interbasin Interaction on Climate Variability and Extreme Events I Panel *(joint with OM, PC, PL)*

Moderators: **Michael Alexander**, NOAA Boulder; **Belen Rodriguez-Fonseca**, Universidad Complutense de Madrid

1400h **AI53A-01** Interacting Climates of Ocean Basins: Observations, Mechanisms, Predictability, and Impacts: **C R Mechoso**

1412h **AI53A-02** Pantropical climate interactions: **W Cai**, G Wang, L Wu

1424h **AI53A-03** A Review of Three-Ocean Interactions and Climate Variability: **C Wang**

1436h **AI53A-04** Cross-basin ocean-atmosphere interactions in radiatively-induced climate change: **S P Xie**, S M Kang, J Kim, B Xiang

1500h **AI53A-06** Pacific versus Atlantic Contributions to Multidecadal Variability in the Arctic: A Multi-Model Intercomparison: **L Svendsen**, Y Kosaka, B Taguchi, N Keenlyside

1512h **AI53A-07** On the acceleration of ENSO decay by northern tropical Atlantic SST anomalies: **I Richter**, H Tokinaga, Y Kosaka, T Doi

1524h **AI53A-08** Extreme Coastal Sea Level Events in the Tropical East Indian Ocean: the Role of Climate Variability: **W Han**

1536h **AI53A-09** Impact of the Atlantic Multidecadal Oscillation on the Pacific North Equatorial Current bifurcation: **C R Wu**, Y F Lin, B Qiu

1548h **AI53A-10** Multidecadal Variability of ENSO in a Recharge Oscillator Framework: **L Crespo**, B Rodriguez-Fonseca, I Polo, N S Keenlyside, D Dommenget

COASTAL AND ESTUARINE PROCESSES

CP53A 8, UL

Friday 1400h

Carbon Accumulation and Its Long-Term Stability in Blue Carbon Ecosystems I *(joint with MG, OB)*

1400h **CP53A-01** Contribution of mud-associated organic matter to marsh blue carbon: **G Mariotti**, T E Quirk

1415h **CP53A-02** Opposing Effects of Temperature and Elevated CO_2 on Tidal Wetland Methane Emissions and Soil Carbon Sequestration: **P Megonigal**, G L Noyce, M L Kirwan

1430h **CP53A-03** Blue carbon sources and carbon accumulation rates in restored versus historic marshes in southern Puget Sound, Washington, USA: **J Z Drexler**, M Davis, I Woo

1445h **CP53A-04** Coupling High Frequency Atmospheric Carbon Flux Measurements with Seasonal Sedimentary Carbon Deposition to Constrain Short-Term Carbon Accumulation: Preliminary Data from a Restored Coastal Wetland in San Francisco Bay: **J A Carlin**, P Oikawa, J Bahramian, T Duncan, K Beener

1500h **CP53A-05** Soil carbon stocks, lability and decomposition rates of surficial and buried organic matter in a large tropical seagrass landscape: **J W Fourqurean**, J L Howard

1515h **CP53A-06** Carbon Sequestration in Wetlands: a cross Comparison of Intact and Restored, Tidal and Non-tidal Freshwater Wetlands: **A Arias Ortiz**, A Paytan, P Masqué, D D Baldocchi

1530h **CP53A-07** Tidal wetland Gross Primary Production across the continental United States, 2000-2018: **R A Feagin**, I Forbrich, T Huff, J G Barr, J Ruiz-Plancarte, J D Fuentes, R Najjar, R Vargas, A V Lule, L Windham-Myers, K D Kroeger, E Ward, G W Moore, M Y Leclerc, K Krauss, C L Stagg, M Alber, S Knox, K V Schafer, T S S Bianchi, J Hutchings, H B Nahrawi, A Noormets, B Mitra, A Jaimes, A Hinson, B A Bergamaschi, J S King

1545h **CP53A-08** A Multi-algorithm Approach of Modeling Coastal Wetland Eco-Geomorphology at the Global Scale: **Z Tan**, C Liao, Y Cheng, L R Leung, V Bailey

CP53B 9, UL

Friday 1400h

Coastal Processes and Climate Change: Scientific Methods and Tools to Characterize the Impacts of Changing Coastal and Nearshore Processes I *(joint with MG, PC)*

Moderators: **Kara Scheu**, Organization Not Listed; **David Revell**, Revell Coastal

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1400h **CP53B-01** Identifying contributions to 20th century coastal sea level rise: **S Dangendorf**, L Chafik, C G Piecuch, T Frederikse

1415h **CP53B-02** Performance Report Card for NOS 3-D hydrodynamic models during extreme events: **L Abrams**, L A Heilman, K E Kavanaugh, A Miller, L Alomassor, R Lange, P F Fanelli, G Dusek, C Fanelli

1430h **CP53B-03** Global to coastal multiscale modeling in the Energy Exascale Earth System Model (E3SM): **P J Wolfram Jr**, S R Brus, M R Petersen, Z Cao, D Engwirda, M E Maltrud, X Asay-Davis, A Roberts, J Wolfe, T Zhou, G Bisht, Z Tan, L R Leung

1445h **CP53B-04** The Role of Geologic History and Sea Level Rise on the Changing Flood Risk in a Large Estuary: **J O'Donnell**

1500h **CP53B-05** Interactions between waves, beaches, and coastal cliffs: **A Young**, H Matsumoto, B C Ludka, W C O'Reilly, M Merrifield, R T Guza

1515h **CP53B-06** MoDesCo: Toward a comprehensive assessment of future coastal risks and hazards in the Estuary and Gulf of St. Lawrence, Eastern Canada: **C Caulet**, D Didier, M Bandet, J Baudry, P Bernatchez

1530h **CP53B-07** Establishing a Model-based Coastal Hazard Adaptation Framework: **C J Hapke**, C A Jones, D Revell

1545h **CP53B-08** Sustainable Infrastructure Mitigation Strategies and Evaluation to Manage the Impacts of Changing Coastal Processes and Climate Change: Lessons from Urban Coastal Communities from India: **S K Mandal**

CP53C 10, UL

Friday 1400h

Connections Between Coral Reef State, Physical Processes, and Coastlines I *(joint with IS, MG, SI)*

Moderators: **Andrew Pomeroy**, University of Western Australia; **Curt Storlazzi**, USGS California Water Science Center Sacramento

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1400h **CP53C-01** Hydrodynamics on Fringing Reef Systems with Spur and Groove Structures: **C Acevedo**, W J Stephenson, I Marino-Tapia, S Wakes

1415h **CP53C-02** The Influence of a Cross-Reef Channel on Wave Setup and Circulation over a Fringing Reef at Ipan, Guam, Revisited: **J M Becker**, S J Clark, M Merrifield, J Behrens

1430h **CP53C-03** Reconciling Reef Representations: A Comparison of Obstacle and Surface Models, and Consequences for Drag: **M Duvall**, J H Rosman, J L Hench

1445h **CP53C-04** Extending Coral Reef Elevation-Change Studies from Regional- to Centimeter-Scale with a New High-resolution, Underwater Imaging System: **D G Zawada**, G A Hatcher, C Kranenburg, A C Ritchie, J A Warrick, K K Yates, E Dailey

1500h **CP53C-05** A coral reef surfzone: The dynamics of wavy flows on a shallow reef flat: **S G Monismith**, S A Maticka, J Rogers, B B Hefner, C B Woodson

1515h **CP53C-06** A Hybrid Approach to Develop Runup Parameterisations for Reef-Lined Coasts: **G L Franklin**, A Torres-Freyermuth

1530h **CP53C-07** West Maui – A Stellar Example of Spatial Variability of the Wave-Driven Components of Runup and Inundation: **C Tognacchini**, M D Guiles, A Azouri, V Roeber, D S Luther

1545h **CP53C-08** Numerical modeling of the performance of coral reef restoration projects to enhance wave energy dissipation and decrease coastal flooding: **M Canals**, E Hernandez

CP53D Poster Hall C-D; eLightning Theater

Friday 1400h

Coastal Research Related to Hurricane Dorian and the 2019 Hurricane Season II eLightning

(joint with IS, MG, PC)

Moderators: **Arthur Trembanis**, University of Delaware; **Katherine Brodie**, US Army Corps of Engineers; **Britt Raubenheimer**, Woods Hole Oceanographic Institution

CP53D-01 *eLIGHTNING* Evaluation of the Ocean Initial Conditions and Evolution of the Ocean Mixed Layer Temperature on the HWRF-POM Forecasting Model during Hurricane Dorian: **M F Aristizabal**, H S Kim, T N Miles, S M Glenn, A Mehra

CP53D-02 *eLIGHTNING* Freshening Along the US East Coast by Hurricane Dorian Captured by the SMOS Satellite: **A M Mestas-Nunez**, R Fernandez, K Mendiondo, C A Sustayta

CP53D-03 *eLIGHTNING* Interruptions in the Gulf Stream - Oceanic local and remote response to Hurricane Dorian (2019): **H S Kim**, T D Spindler, A Mehra, V Tallapragada

CP53D-04 *eLIGHTNING* Attributing changes in Hurricane Dorian's hazards to climate change: **K A Reed**, M F Wehner, A M Stansfield, C M Zarzycki

CP53D-05 *eLIGHTNING* Large-Scale Storm Tide Modeling in the U.S. East Coast and the Bahamas during Hurricane Dorian, 2019: **Z Liu**, S Patel, N Hu

CP53D-06 *eLIGHTNING* Drivers of Coastal Flooding along South-Atlantic Bight during Hurricanes Dorian and Matthew: **K Park**, E Di Lorenzo, K M Cobb, R J Clark, I Federico, N Pinardi, G Coppini, N Deffley, R Mathews, C G Piecuch, T Ezer

CP53D-07 *eLIGHTNING* Morphologic changes from sound-side inundation of North Core Banks, Cape Lookout National Seashore, North Carolina, USA during Hurricane Dorian: **J A Brown**, C R Sherwood, C Kranenburg, A Ritchie, J A Warrick, C W Wright, S L Zeigler

CP53D-08 *eLIGHTNING* Managing US National Park Service Resources on Barrier Islands in Action: Cape Lookout and Cape Hatteras National Seashores after Hurricane Dorian: **R L Beavers**, R S Young, K M Peek, B Tormey, H Crawford, M Schwadron, T Smith, M Ford, D Hallac, J West

CP53D-10 *eLIGHTNING* Re-Assessing Expected Storm Responses: Examples of Wind-Driven Dune Erosion and Wave-Driven Dune Accretion During the 2019 Atlantic Hurricane Season: **N Cohn**, K L Brodie, P Dickhudt

CP53D-11 *eLIGHTNING* Geotechnical Investigation of the Intertidal Zone in Duck, North Carolina, during Tropical Storm Melissa and DUNEX: **M Florence**, R Jaber, N Brilli, J Paprocki, J Popelka, N Stark

CP53D-12 *eLIGHTNING* AEOLIAN TRANSPORT ON A WET BEACH: FIELD OBSERVATIONS FROM TROPICAL STORM NESTOR: **C Swann**, S M Trimble, C Key

CHEMICAL TRACERS, ORGANIC MATTER AND TRACE ELEMENTS

CT53A 5A, UL

Friday 1400h

Biogeochemistry of DOM and DOM-Microbe Interactions II *(joint with MM, MM, OB)*

Moderators: **Bryndan Durham**, University of Florida; **Helena Osterholz**, University of Oldenburg

1400h **CT53A-01** Nucleotide cross-feeding links the marine microbial carbon and nitrogen cycles: **R Braakman**, B M Satinsky, K Longnecker, J Becker, A Arellano, K Dooley, S L Hogle, M C Kido Soule, T J O'Keefe, E B Kujawinski, S W Chisholm

1415h **CT53A-02** Determining bacterially mediated fate of carbon: A stable isotope approach with a selection of cultivated marine bacteria: **T J Samo**, X Mayali, J Kimbrel, B Stewart, P K Weber

1430h **CT53A-03** The Marine Cyanobacterium *Prochlorococcus* Releases Diverse 'Dissolved' Organic Molecules Within Extracellular Vesicles: **S Biller**, R A Lundeen, L Hmelo, K Becker, A Arellano, K Dooley, L Carlson, K Heal, B A Van Mooy, A E Ingalls, S W Chisholm

1445h **CT53A-04** Seasonal Dynamics of Microbial Activity and Organic Matter in the Arctic Gateway: **A von Jackowski**, J Grosse, A Engel

1500h **CT53A-05** A Ubiquitous Diatom Modulates its Microbial Consortium Through a Carrot-and-Stick Strategy: **A Shibl**, S A Amin

1515h **CT53A-06** Changing diets – microbial remineralization of primary producer exudates from reefs during phase shifts: **M Arts**, B Mueller, L W Kelly, C E Nelson, I Koester, D Petras, E C Hopmans, M J Vermeij, P Dorrestein, A Haas

1530h **CT53A-07** Systematic variation in marine dissolved organic matter stoichiometry and remineralization ratios as a function of lability: **E Zakem**, N M Levine

1545h **CT53A-08** Mechanistic microbial ecosystem model inference: A new method to analyze time series data: **J Hoffmann**, F Hellweger

HIGH LATITUDE ENVIRONMENTS

HE53A 1A, UL

Friday 1400h

Sea Ice Dynamics and Predictability I *(joint with AI, OM, PC)*

Moderators: **Mary-Louise Timmermans**, Yale University; **Dimitrios Giannakis**, New York University

1400h **HE53A-01** A spring barrier for regional predictions of summer Arctic sea ice: **D B Bonan**, M Bushuk, M Winton, E Blanchard-Wrigglesworth, A F Thompson

1415h **HE53A-02** Enhanced Arctic Sea-Ice Growth Driven by Atmospheric Warming; A Key Role for Snow: **A Bigdeli**, A T Nguyen, H Pillar, P Heimbach, V Ocaña

1430h **HE53A-03** *How changes in sea ice motion influence Antarctic sea ice extent*: **T J W Wagner**, H C Mason, I Eisenman

1445h **HE53A-04** Antarctic sea ice formation and melt rates estimated from under-ice ocean observations: **E C Campbell**, S Riser

1500h **HE53A-05** Interaction Between Antarctic Circumpolar Current Eddies and the Sea Ice Edge: Influence on Sea Ice Extent: **S R Springer**, M S Dinniman, L Padman

1515h **HE53A-06** Ice floe dispersion from moderate resolution remote sensing imagery.: **R Lopez**, M M Wilhelmus

1530h **HE53A-07** Observation and modeling of wave-ice interactions in the MIZ: the relative importance of turbulent processes compared to other attenuation mechanisms: **L Barast**, P Sutherland, D Dumont, J Baudry

1545h **HE53A-08** Sea-Ice Generated Internal Waves: Impacts on Ice-Ocean Fluxes of Heat and Momentum: **K Thielen**, A Wells

MARINE ECOLOGY AND BIODIVERSITY

ME53A 7A, UL

Friday 1400h

Underwater Flux Studies and Their Ecological Implications I *(joint with CP, IS)*

Moderators: **Peter Berg**, University of Virginia; **Clare Reimers**, Oregon State University

1400h **ME53A-01** Better Together: Combining Underwater Eddy Covariance Fluxes with Biodiversity Measures to Explore Benthic C Flows Within a Shallow Coastal Seascape: **K Attard**, I F Rodil, J Norkko, R N Glud, A Norkko

1415h **ME53A-02** Seasonal Variability of Benthic Metabolism on the central Oregon Shelf: **K Fogaren**, C E Reimers, Y Alleau, P Chace

1430h **ME53A-03** Temperature effects on temperate seagrass metabolism and resilience: **A Berger**, P Berg, K McGlathery

1445h **ME53A-04** Assessing Multiple Carbon Fluxes in a Temperate, Pacific Seagrass Meadow: **M Ward**, T M Hill, A M Ricart, B Gaylord, B C O'Donnell, L R Capece, P Shukla, K Kroeker, E Sanford, W C Oechel

1500h **ME53A-05** Carbonate dissolution and alkalinity production in low-carbonate, permeable sediments: **A Lunstrum**, W Berelson, N Rollins

1515h **ME53A-06** Coupling In Situ Depth Profiles of Redox Species with Benthic Flux Measurements to Quantify Carbon Remineralization Processes in Marine Sediments: **M Taillefert**, E M Eitel, J S Beckler, S M Owings, D J Meiggs, D B Nuzzio

1530h **ME53A-07** Enhanced sedimentary phosphorus release following a natural oxygenation event: **A Hylen**, S van de Velde, M Luo, M Y Kononets, E Almroth-Rosell, P O J Hall

1545h **ME53A-08** Seawater chemical gradients produced by heterotrophic ecosystem engineers: **A T Ninokawa**, K Elsmore, B Jellison, L Jurgens, Y Takeshita, B Gaylord, V Hickman

MARINE GEOLOGY AND SEDIMENTOLOGY

MG53A 5B, UL

Friday 1400h

Sediment Delivery, Transport, and Deposition in Marine and Lacustrine Environments III *(joint with CP)*

Moderators: **D. Corbett**, UNC Coastal Studies Institute; **Guan-hong Lee**, Inha University

1400h **MG53A-01** Physical, hydrodynamic and biological controls on sediment delivery to shoreline in the tidal flats of Morecombe Bay, UK: **C A Unsworth**, I D Lichtman, M E Williams, P D Thorne, A Blight, D M Paterson, L Amoudry

1415h **MG53A-02** Shifts in sediment routing and deposition associated with 150 years of estuary modification in Coos Bay, Oregon: **E Eidam**, D Sutherland, D K Ralston, B Dye, T Conroy

1430h **MG53A-03** Modelling study of human-induced historical changes in sediment provenance and transport in a macro-tidal estuary.: **Z Cheng**, I Jalon-Rojas Dr, X H Wang

1445h **MG53A-04** Suspended Sediment Concentration Gradients in the Complex Bathymetric Features of a Macro-Tidal Estuary: **R Ramirez-Mendoza**, L G Alvarez

1500h **MG53A-05** Exploring the Maximum Turbidity Zone in the St. Lawrence Estuary (Eastern Canada): **C Dufresne**, A Dussol, A S Fabris, D Dumont

1515h **MG53A-06** Field Particle Image Velocimetry Measurements over Rippled Bedforms during Transitional Wave Forcing: **B J Landry**, C C Zuniga Zamalloa, R Mieras, J Calantoni, E F Braithwaite III, C Key, C Gray, S Griffin, A Sheremet

1530h **MG53A-07** Turbulence-Resolving Numerical Investigation of Fine Sediment Transport over Ripples in the Suborbital Regime: **L Yue**, T J Hsu, A Horner-Devine, A S Ogston

1545h **MG53A-08** Wave Driven Sand Ripple Formation on a Subaqueous Sand Mound: **S B Lee**, M E Wengrove, M A de Schipper, J Hopkins, M G Kleinhans, G Ruessink

OCEAN BIOLOGY AND BIOGEOCHEMISTRY

OB53A 4, UL

Friday 1400h

Planktonic Recorders: Using Tiny Organisms to Understand Past, Present, and Future Oceans I *(joint with ME, OM, PC)*

Moderators: **Rosie Oakes**, Academy of Natural Sciences of Drexel University; **Federico Baltar**, University of Vienna

1400h **OB53A-01** Early Cretaceous Origin of Pteropods Suggests Their Resilience to Ocean Acidification: **K Peijnenburg**, A Janssen, D Wall-Palmer, E Goetze, A E Maas, J A Todd, F Marlétaz

1415h **OB53A-02** Using sediment data as pre-industrial baseline for marine zooplankton biogeography: planktonic foraminifera communities now systematically different from before the onset of the Anthropocene: **L Jonkers**, H Hillebrand, M Kucera

1430h **OB53A-03** Resolving the vertical distribution of the pteropod *Limacina helicina* from a 24-year time series off the coast of British Columbia to estimate experienced ranges in pH and aragonite saturation states: **M R Miller**, P Gibb, M Galbraith, D Ianson, J Dower

1445h **OB53A-04** *The role of Synechococcus* and *Prochlorococcus in the biogeochemistry of the oligotrophic oceans* : **S Neuer**, B N Cruz, F DeMartini

1500h **OB53A-05** A Tropical Tale: Influence of the Warm Blob on the Planktic Foraminifera Community off the Oregon Coast: **M K Lane**, J S Fehrenbacher, J L Fisher

1515h **OB53A-06** Taxonomic, functional and biogeographic traits of the sunlit Atlantic Ocean microbiome: **L Dlugosch**, A Poehlein, B Wemheuer, T H Badewien, R Daniel, M Simon

1530h **OB53A-07** Changing Rates and Shifting Ranges: Assessing the Phytoplankton Global Response to Ocean Warming: **S Anderson**, A D Barton, S Clayton, S Dutkiewicz, T A Rynearson

1545h **OB53A-08** Identifying abrupt biogeographic shifts in a complex model ocean ecosystem: **B B Cael**, S Henson, S Dutkiewicz

OB53B 3, UL

Friday 1400h

Seasonal Cycles of Ocean Biogeochemistry and Ecosystems Under a Changing Climate I *(joint with OC, PC, PL)*

Moderators: **Jorg Schwinger**, NORCE Climate; **Andrea Fassbender**, Monterey Bay Aquarium Research Institute

1400h **OB53B-01** Future Phase Reversal of the Seasonal Cycle of pCO_2 in the Arctic Ocean: **J C Orr**, L Kwiatkowski, H O Portner

1415h **OB53B-02** Mechanisms of seasonal variability of carbon cycle in the North Western Pacific: a biogeochemical and carbon modeling study coupled with an operational ocean model product: **M Ishizu**, Y Miyazawa, T Tsunoda, X Guo

1430h **OB53B-03** Seasonal upwelling links iron recycling with eastern equatorial Pacific nitrate consumption and new primary production: **P A Rafter**, D M Sigman, K Mackey

1445h **OB53B-04** The seasonal cycle of physical, biogeochemical and biological properties in the marginal ice zone in the Fram Strait: differences in sea ice conditions during the growth phase lead to different carbon production and export patterns: **W J von Appen**, M Bergmann, C Bienhold, A Bracher, M H Iversen, K Metfies, B Niehoff, E M Nothig, A Purser, I Salter, S Torres-Valdes, F Wenzhofer, M Wietz, A Boetius

1500h **OB53B-05** Estimates of particulate organic carbon export and loss rates in the warmest sea of the global ocean from a bio-optical profiling float: **M Kheireddine**, G Dall'Olmo, M Ouhssain, G Krokos, H Claustre, C Schmechtig, A Poteau, P Zhan, I Hoteit, B H Jones

1515h **OB53B-06** Significant future changes in bloom phenology over the high latitudes identified with a large ensemble suite of simulations: **R Yamaguchi**, K B Rodgers, K J Stein, A Timmermann, J P Dunne, S Schlunegger, R Slater

1530h **OB53B-07** The Effect of Modelling Mechanistically Phytoplankton Photo-physiology on the Seasonal Cycle of Primary Production in Polar Regions: **E Alvarez**, O Karakus, J Hauck

1545h **OB53B-08** Seasonal cycles of plankton ecology and CO2: subpolar lessons from satellite data and coupled climate models: **I Marinov**, S Lu, P Sharma, A Cabre, B Asadieh

OB53C 2, UL

Friday 1400h

Toward BioGeoSCAPES: Exploring Molecular Drivers of Ocean Metabolism and Biogeochemistry II *(joint with CT, MM, NC)*

Moderators: **Erin Bertrand**, Dalhousie University; **Martha Gledhill**, GEOMAR Helmholtz Centre for Ocean Research Kiel

1400h **OB53C-01** Marine Dissolved Metabolite Concentrations Provide Unique Insights into Microbial Metabolic Processes over Diurnal and Seasonal Time-Scales: **E B Kujawinski**, K Longnecker, G Swarr, M C Kido Soule, B Widner, S Liu, R J Parsons, S J Giovannoni, C A Carlson

1415h **OB53C-02** Strong Zonal Gradients in States, Rates and Proteomics provide New Insight into Trace Metal Control on Phosphorus Acquisition in the subtropical Atlantic: **C Mahaffey**, C E Davis, N Held, M A Saito, K G L Kunde, N Wyatt, M Woodward, A Tagliabue, M C Lohan

1430h **OB53C-03** Eukaryotic genome discovery: Scalable and automated retrieval of eukaryotic metagenome assembled genomes (MAGs) from a global-scale dataset: **H Alexander**, S K Hu

1445h **OB53C-04** The interplay between iron supply and demand shapes the future iron limitation of ocean microbes: **A Tagliabue**, O Aumont, L Bopp, P W Boyd, L Kwiatkowski, R F Strzepek, B S Twining

1500h **OB53C-05** Lipidomic analysis of trophic structure and microbial community dynamics over a diel time-series in Monterey Bay: **B Edwards**, J Hwang, T Gamez, L Sofen, A Vislova

1515h **OB53C-06** Leveraging Microbial Community Structure Data to Inform Ecosystem Modeling, an Approach Based on Microbial Community Segmentation: **E Chamberlain**, H Kim, S Doney, J S Bowman

1530h **OB53C-07** Proteomic allocation strategies observed through a micronutrient stress transition at the Antarctic sea ice edge: **S McCain**, A E Allen, A Tagliabue, E M Bertrand

1545h **OB53C-08** Controls on phytoplankton iron quotas in natural systems: **B S Twining**, E Mann, N Cohen, A Marchetti

OCEAN CHANGE: ACIDIFICATION AND HYPOXIA

OC53A 11B, UL

Friday 1400h

Chemical and Biological Impacts of Ocean Acidification in the Pacific Ocean I *(joint with CP, OB, OM)*

Moderators: **Richard Feely**, NOAA Pacific Marine Environmental Laboratory; **Nina Bednarsek**, Southern California Coastal Water Research Project

1400h **OC53A-01** World's Most Acidic Hydrothermal System off NE Taiwan: **C T A Chen**, B J C Wang, H I A Huang

1415h **OC53A-02** Carbonate Chemistry Through a Transect of the North Pacific: Particle Fluxes and Dissolution Patterns: **W Berelson**, J F Adkins, A Subhas, S Dong, J Naviaux, P Ziveri, J W B Rae

1430h **OC53A-03** Carbonic anhydrase enhanced calcite dissolution: atomic scale mechanisms and measurements in the North Pacific: **S Dong**, W Berelson, A Subhas, N Rollins, H Teng, S Pirbadian, M El-Naggar, J F Adkins

1445h **OC53A-04** Biogenic carbonate budget in the North Pacific Ocean from sub-tropical to subpolar waters: **P Ziveri**, W R Gray, G Anglada I Ortiz, C Manno, M Grelaud, A Incarbona, J W B Rae, S Pallacks, A Subhas, J F Adkins, W Berelson

1500h **OC53A-05** Degradation process of shell density of marine calcified plankton in different pH conditions in the North Pacific: **K Kimoto**, N Bednarsek, O Sasaki, Y Nakano, M Wakita, N Harada

1530h **OC53A-07** Pteropods make thinner shells along a natural ocean acidification gradient: **L Mekkes**, W Renema, N Bednarsek, S R Alin, R A Feely, J Huisman, P Roessingh, K Peijnenburg

1545h **OC53A-08** Multiple pathways of pteropods impacting the carbonate budget in the North Pacific: **N Bednarsek**, R A Feely, K Kimoto

PHYSICAL-BIOLOGICAL INTERACTIONS

PI53A 7B, UL

Friday 1400h

(Sub)mesoscale Physical/Biogeochemical Interactions II *(joint with ME, OB, PS)*

Moderators: **Daniel Whitt**, University of Cambridge; **Alice Della Penna**, Institute for Marine and Antarctic Studies

1400h **PI53A-01** The influence of mesoscale eddies on pelagic predators: **C Braun**, S Thorrold, P Gaube

1415h **PI53A-02** *Temporal modulation of biogeochemical cycles and phytoplankton biomass by submesoscale circulation in the California Current System*: **F Kessouri**, D Bianchi, J C McWilliams, L Renault, K McLaughlin, P Damien, C A Deutsch, H Frenzel, M Ho, M Sutula

1430h **PI53A-03** The effects of episodic wind-event mixing on vertical chlorophyll structure in the southern California Current Ecosystem: **B D Turley**, R R Rykaczewski

1445h **PI53A-04** Cross-Scale Physical Interactions Control Coastal Phytoplankton Productivity at the Deep-Chlorophyll Maximum: **T L Schlosser**, A J Lucas, N L Jones, J D Nash, G N Ivey

1500h **PI53A-05** Diatom Community Composition Shifts Driven by Coherent Cyclonic Mesoscale Eddies in the California Current System: **Z M Abdala**, S V Einarsson, K Powell, C P Till, T Coale, S Clayton, D Chappell

1515h **PI53A-06** Eddies and Filaments Mediate the Transport and Biogeochemical Evolution of Coastal Upwelled Waters in the California Current System: **S Clayton**, F I Kuzminov, C P Till, T Coale, M Y Gorbunov, K W Bruland

1530h **PI53A-07** Lagrangian flow properties along filament-like structures and its impact on the distribution and composition of phytoplankton: **I Hernandez-Carrasco**, A Orfila, V Rossi, E Alou-Font, V Morales-Márquez, V Garcon

1545h **PI53A-08** Nutrient Supply Caused by Submesoscale and Microscale Mixing Processes in the Upstream Kuroshio: **T Nagai**, D Hasegawa, E Tsutsumi, H Nakamura, T Senjyu, T Endoh, T Matsuno, R Inoue, A Tandon, N Yoshie, K Ohgi, A Nishina, T Kobari, G S Duran Gomez, D A Otero

PHYSICAL OCEANOGRAPHY: MESOSCALE AND LARGER

PL53A 15A, Mezzanine

Friday 1400h

Ocean Tides: From Planetary to Turbulent Scales II *(joint with CP, OM, PI)*

Moderators: **Maarten Buijsman**, University of Southern Mississippi; **Mattias Green**, Bangor University

1400h **PL53A-01** Internal tides at the coast: interpreting baroclinic energy flux in the presence of coastal trapped waves: **R C Musgrave**, J A Lerczak

1415h **PL53A-02** Stationary Internal Tides Observed in a Steep, Reflective, Coastal Submarine Canyon: **M M Hamann**, M Alford, A J Lucas, A F Waterhouse, A Aleboyer

1430h **PL53A-03** Scattering of the M_2 Internal Tide in a Selection of Continental Slope Canyons: **R Nazarian**, S Legg, M M Hamann, A F Waterhouse

1445h **PL53A-04** The Evolution of Superharmonics Excited by Internal Tides in Non-Uniform Stratification: **L Baker**, B R Sutherland

1500h **PL53A-05** Latitude dependence of the fate of internal tide beams: **S Chou**, G S Carter, E Firing, N Grisouard, M D Guiles, D S Luther, M Merrifield, B Powell, C Staquet

1515h **PL53A-06** Internal tide mapping and predictability in an idealized configuration: **A Ponte**, N Lahaye, Z Caspar-Cohen, S Le Gentil

1530h **PL53A-07** Internal tides in the California Current System: characterizing non-stationarity at the sub-mesoscale using a novel tidal harmonic analysis package: **L Kachelein**, S T Gille, B D Cornuelle, M R Mazloff, E J Terrill

PL53B 14B, Mezzanine

Friday 1400h

Turbulent Pathways and Deep-Ocean Ventilation II *(joint with OM, PC, PS)*

Moderators: **Ali Mashayek**, Imperial College London; **Lynne Talley**, University of California San Diego

1400h **PL53B-01** The Arrested Ekman Layer Escapes! Ventilation of the Bottom Boundary Layer by Internal Swash. I. N/f ~ 4 and N / slope f ~ O(1): **K L Polzin**, T Ijichi, A Naveira Garabato, C Spingys, A Forryan

1412h **PL53B-02** Ocean's mix and match: **A Mashayek**, L Cimoli

1424h **PL53B-03** The transition to turbulence within internal tide boundary layers in the abyssal ocean.: **B Kaiser**, L J Pratt

1436h **PL53B-04** Does lateral stirring really take place along neutral surfaces in double-diffusive regions of the oceans?: **R Tailleux**, G A Wolf, D Ferreira, T Kuhlbrodt

1448h **PL53B-05** Computationally Efficient Ways to form Approximately Neutral Surfaces: **T J McDougall**, G Stanley, C de Lavergne, P M Barker

1500h **PL53B-06** Neutral Surface Topology: **G Stanley**

1512h **PL53B-07** Testing the Assumptions Underlying Ocean Mixing Methodologies using Direct Numerical Simulations: **P F Linden**, C C P Caulfield, J R Taylor, S de Bruyn Kops

1524h **PL53B-08** Mixing Properties of Stratified Turbulence Forced by Breaking Internal Gravity Waves: **C Howland**, J R Taylor, C C P Caulfield

1536h **PL53B-09** The Impact of Turbulence and Convection on Transport in the Southern Ocean: **T Sohail**, C A Vreugdenhil, B Gayen, A M Hogg

1548h **PL53B-10** Abyssal Circulation Driven By Near-Boundary Mixing: Water Mass Transformations and Interior Stratification: **H F Drake**, R M Ferrari, J Callies

PHYSICAL OCEANOGRAPHY: MESOSCALE AND SMALLER

PS53A 15B, Mezzanine

Friday 1400h

Defining the New Frontiers of Ocean Mixing Research II *(joint with CT, OB, OM)*

Moderators: **Toshiyuki Hibiya**, University of Tokyo; **Naomi Harada**, Japan Agency for Marine-Earth

1400h **PS53A-01** The Relative Roles of Shear and Gravitationally Driven Turbulence in Driving Ocean Mixing: **G N Ivey**, C Bluteau, N L Jones

1415h **PS53A-02** Long term observation of diapycnal diffusivities in a stratified coastal environment: **H Yamazaki**, W Aoyama, G N Ivey

1430h **PS53A-03** Mixing and Upwelling Dynamics along the Continental Slope off Peru inferred from Tracer Release, Hydrographic and Microstructure Measurements: **M Visbeck**, M Dengler, D T S Tanhua, M Freund

1445h **PS53A-04** Observations of tidally driven turbulence over topographic features on the continental slope of Tasmania.: **O Badaro Marques**, M Alford, R Pinkel, J A MacKinnon, J D Nash, J M Klymak, H L Simmons

1500h **PS53A-05** A New Parameterization of Tidal Mixing Enhanced over Rough Seafloor Topography: **T Hibiya**

1515h **PS53A-06** Ocean State Estimation with Turbulence Observation Data: **S Masuda**, S Osafune, N Sugiura, T Doi, T Hemmi

1530h **PS53A-07** Simulation of the deep and intermediate Pacific meridional overturning circulation: **T Kawasaki**, H Hasumi, Y Matsumura, H Tatebe, Y Komuro, S Urakawa

TUTORIAL TALKS

TT53A 1B, UL

Friday 1400h

Plankton Measurements Now *(joint with IS, ME, OB)*

TT53B 1B, UL

Friday 1430h

Past, Present, and Future Satellite Radar Altimeters *(joint with IS, PL, PS)*

TT53C 1B, UL

Friday 1500h

Establishing Active Fluorescence as a Primary Productivity Metric for the World's Coasts and Oceans *(joint with OB, OD, PI)*

TT53D 1B, UL

Friday 1530h

Turbulence Microstructure Measurements in the 21st Century *(joint with IS, PS)*

PLENARIES

6A-F, UL

Friday 1600h

Closing Plenary: Margaret Leinen

1600h Closing Plenary: **M Leinen**