

# The Physics of Estuaries and Coastal Seas 22nd International Conference



## General Program:

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
7:30 – 8:00 AM		<i>Breakfast</i>	<i>Breakfast</i>	<i>Breakfast</i>	<i>Breakfast</i>	<i>Breakfast</i>
8:00 - 9:30 AM		Orals M1 - Estuarine Hydrodynamics I	Orals T1 - River Plumes	Orals W1 - Turbulence and Mixing	Orals Th1 - Estuarine Hydrodynamics IV	Orals F1 - Anthropogenic and Climate Influences
9:30 - 11:00 AM		Posters P1 - Estuarine Hydrodynamics	Posters P3 - River Plumes	Posters P5 - Turbulence and Mixing/ Wave and Shelf Dynamics	Posters P6 - Water Quality	Posters P8 - Anthropogenic, Climate, and Weather Influences
11:00 AM – 12:15 PM		Orals M2 - Estuarine Hydrodynamics II	Orals T2 - Physical and Biogeochemical Interactions	Orals W2 - Estuarine Hydrodynamics III	Orals Th2 - Water Quality	Orals F2 - Estuarine Hydrodynamics V
12:15 - 1:30 PM	Attendees Arrive	<i>Lunch</i>	<i>Lunch</i>	Excursions	<i>Lunch</i>	(ends at 12:30 PM)
1:30 – 3:00 PM		Orals M3 - Coastal Flooding and Extreme Water Levels	Orals T3 - Sediment Transport and Coastal Morphology		Orals Th3 - Wave and Shelf Dynamics II	Attendees Depart
3:00 - 4:30 PM	Posters P2 - Coastal Flooding and Extreme Water Levels	Posters P4 - Sediment Dynamics and Biogeochemical Processes	Posters P7 - Estuarine Hydrodynamics			
4:30 – 6:00 PM		4:30 – 5:00 PM Conference Welcome 5:00 – 6:00 PM  Retirement Celebration in Hannaford Hall	Orals T4 - Wave and Shelf Dynamics I		Attendees make their way to Casco Bay Lines, 56 Commercial St., Portland, ME.  Arrive by 5:30 PM for 5:45 PM ferry. <b>Ferry will not wait for late passengers!</b>	
Evening	<i>Welcome Mixer @ Bayside Bowl Rooftop, 58 Alder St., Portland, ME</i>  6:00 – 9:00 PM	<i>Evening Free</i>	<i>Evening Free</i>	<i>Evening Free</i>	<i>Conference Dinner Diamond's Edge Restaurant, Great Diamond Island, ME</i>  Departing Ferry: 5:45 PM Dinner: 6:30 – 9:00 PM Return Ferry: 9:30 PM	

## Events

### Welcome Mixer at Bayside Bowl Rooftop

- Sunday at 6:00pm
- 58 Alder Street, Portland, ME. Appetizers and limited drinks provided. Food and additional drinks will be available for purchase. The event ends at 9:00 PM.

### Retirement Celebration for Rocky Geyer, Parker MacCready, and Hans Burchard

- Monday at 5:00pm - 6:00pm
- Hannaford Hall (same location as presentations). The event ends at 6:00 PM.

### Banquet Dinner

- Thursday 5:30p -10:00p
- Ferry departure from Portland at 5:30p
  - Ferry location: 56 Commercial Street, Portland, ME. Attendees should arrive at the ferry 15 minutes before departure. THE FERRY WILL NOT WAIT FOR LATE ARRIVALS. Ferry tickets will be distributed to attendees during the Thursday lunch hour.
- Conference dinner at Diamond's Edge Restaurant 6:30p-9:00p
  - This will be a classic Maine Lobster Bake. Note: not just lobster will be served...options will be available for Gluten Free, Vegetarian, and Vegan attendees.
- Ferry departure from Great Diamond Island at 9:30p
  - Attendees should arrive at the ferry 15 minutes before departure. THE FERRY WILL NOT WAIT FOR LATE ARRIVALS.

## General Information

**Oral Presentations:** 15 min. total per presentation. Plan for a 12 minute talk with 3 minutes for questions.

**Poster Presentations:** All posters presented on Monday or Tuesday should be put on the correct posterboard number (# next to presentation) by Monday at 9:30 AM and should be removed by the end of the day on Tuesday. Posters presented on Wednesday, Thursday and Friday should be put on the correct posterboard number by Wednesday at 9:30 AM and removed at the end of the conference. Maximum poster dimensions: 36" tall by 60" wide.

## Oral Program Details

### MONDAY

#### M1 - Estuarine Hydrodynamics I

**8:00 AM** - Estuarine Control

*W. Rockwell Geyer, David K. Ralston, Malcolm Scully, Robert Hetland, and Jilian Xiong*

**8:15 AM** - A critical Review of the efflux-reflux Theory for Estuaries

*Torben Arne Voß, Hans Burchard, Knut Klingbeil, and Xiangyu Li*

**8:30 AM** - Salt structure and flux in the oligohaline reach of the Delaware River

*Robert Chant, Dave Ralston, Dongxiao Yin, Elias Hunter, and Benson Ossai*

**8:45 AM** - Wind pumping dominates landward salt transport in a weakly tidal estuary

*Dongxiao Yin, David K. Ralston, John C. Warner, Neil K. Ganju, and Courtney K. Harris*

**9:00 AM** - 3D circulation and multi-channel connectivity in the St. Lawrence Estuary

*Maëlys Le Mouel, Abdelkader Hammouti, and Damien Pham Van Bang*

**9:15 AM** - Spatial variability of residual circulation in a hypersaline coastal lagoon

*Braulio Juarez, Rubi Galván-Ramos, Angelica San Pedro-Granados, Katherine Daza, Lauren Ross, and Arnoldo Valle-Levinson*

**9:30 AM** - Introduction of Poster Session P1

#### M2 - Estuarine Hydrodynamics II

**11:00 AM** - Subsurface flow driven hydrodynamics of semi-arid coastal lagoons

*Megan E. Williams, Lino Yovan, Rodolfo Gómez, Sebastián Vicuña, and Sarah Leray*

**11:15 AM** - Tidal and supratidal variability at a low-inflow estuarine inlet and the adjacent inner shelf

*Isaac Rodríguez-Padilla and Braulio Juárez*

**11:30 AM** - Hydrodynamic variability in a hypersaline lagoon

*Katherine Daza, Elias Pinilla, Lauren Ross, Braulio Juarez and Arnoldo Valle-Levinson*

**11:45 AM** - Temperature dynamics in the Yaquina Bay estuary, Oregon, USA

*Margaret M. Conley, James A. Lerczak, and Robert D. Hetland*

**12:00 PM** - Characterization of hydrodynamic environments in coastal wetlands: the SWOT and NISAR era

Marc Simard, Cecilia Lopez-Gamundi, Alexandra Christensen, Ali Payandeh, and Pascal Matte

### **M3 - Coastal Flooding and Extreme Water Levels**

**1:30 PM** - Controls on Inundation Time in Two Louisiana Deltaic Estuaries

Madeline Foster-Martinez, Abigail Eckland, and Vitalii Sheremet

**1:45 PM** - Nature-based strategies and mechanisms that mitigate coastal floods and minimize induced flooding

P.M. Orton, S.L. Dykstra, and S.A. Talke

**2:00 PM** - How tidal properties influence the duration of coastal flooding and time over critical stress thresholds

Stefan Talke, P.M. Orton, and S.B. Lee

**2:15 PM** - Exploring Estuarine Sea Level Fluctuations and Dynamics Using the Surface Water and Ocean Topography (SWOT) Mission

Joanna L. Carter, Sarah N. Giddings, Angelica Rodriguez, Agata Piffer Braga, and Iury Simoes-Sousa

**2:30 PM** - Landfast ice and ice floe effects on tides and storm surges in estuaries

Steven L. Dykstra, Arnoldo Valle-Levinson, Henk Schuttelaars, Mary Pontbraind, and Eliah Gomez

**2:45 PM** - Marsh Shoreline Protection with Coral Atoll Structures

Robert L. Jenkins III and Davina L. Passeri

**3:00 PM** - Introduction of Poster Session P2

## **TUESDAY**

### **T1 - River Plumes**

**8:00 AM** - Drivers of Cross-Shore Freshwater Transport in the Surf Zone

Alexander R. Horner-Devine, Yingzhong Lou, Sarah N. Giddings, Morteza Derahkti, Matthew Spydell, Sierra M. Byrne, and Alexandra J. Simpson

**8:15 AM** - The intra-tidal evolution of turbulence in the near- to mid-field of a frictional river plume

Lucas Warmuth, Wouter Kranenburg, Arjen Luijendijk, and Julie Pietrzak

**8:30 AM** - Momentum balance on a large surface-advected river plume based on field measurements

Óscar Álvarez-Silva, Marius Becker, Raúl Flores, and Christian Winter

**8:45 AM** - Mapping and Investigating Barotropic Pressure Gradients of River Plumes Using SWOT

Ágata Piffer Braga, Iury Simoes-Sousa, Sarah N. Giddings, Angelica Rodriguez, Joanna L. Carter, Matthew Alford, Sophia Merrifield, Juliana Costi, and Tamlin Pavelsky

**9:00 AM** - Introducing the Coincidence Index: A Novel Diagnostic and Production-Based Framework for Water Body Interaction Analysis and Its Application to Study the Interaction of River Plumes

Xiangyu Li, Knut Klingbeil, and Hans Burchard

**9:15 AM** - Small Plume Behaviors and Fates in Coastal Seas

Sierra M. Byrne, Sarah N. Giddings, Mark Merrifield, Matthew Spydell, Xiaodong Wu, Yingzhong Lou, and Alexander Horner-Devine

**9:30 AM** - Introduction of Poster Session P3

## **T2 - Physical and Biogeochemical Interactions**

**11:00 AM** - Physical controls of macro-nutrient distribution in a moderate discharge coastal river plume

D.B. Fribance, A.M. Gossman, T. Dishon, A. Hannides, G. Voulgaris, and A.E. Yankovsky

**11:15 AM** - The influence of remote river flow on carbon cycling in a low inflow estuary

Marisa Viola, Catherine Clark, Erika McPhee-Shaw, and Sam Kastner

**11:30 AM** - Physical and biogeochemical drivers of oxygen responses to episodic river-dominated conditions and mouth closures in a low-inflow estuary

Victoria Boatwright, Sarah N. Giddings, Colleen Petrik, Matthew Spydell, Sierra Byrne, and Helen Zhang

**11:45 AM** - Influence of Suspended Particulate Matter on the Distribution and Transport of Metal and Organic Pollutants in the Elbe estuary

V. Ortiz Gutierrez, B. Fricke, T. Zimmermann, D. Pröfrock, P. Hoppe, and J. Kelln

**12:00 PM** - Tidal Timing and Environmental Stressors to the Intertidal Zone: A Case Study of Cook Inlet

Mary Pontbriand, Stefan A. Talke, and Steven L. Dykstra

### **T3 - Sediment Transport and Coastal Morphology**

**1:30 PM** - Sediment dynamics in a dredged river channel and adjacent restored marsh

Daniel Nowacki, Jessie Lacy, Samantha McGill, Karen Thorne, and Michelle D'Aguillo

**1:45 PM** - Near-bed sediment entrainment from granular and cohesive beds

Rodrigo Mosquera and Francisco Pedocchi

**2:00 PM** - Phase-resolved shear stress and sediment flux profiles in the wave bottom boundary layer: observations from South San Francisco Bay

Galen Egan

**2:15 PM** - How does uncertainty aggregate in sediment transport models with flocculation dynamics?

Sienna White, Galen Egan, Oliver Fringer, and Mark Stacey

**2:30 PM** - Will sea level rise lead to stronger/weaker sediment resuspension in Galveston Bay?

Imran Hossain Newton, Jiabi Du, and Timothy M. Dellapenna

**2:45 PM** - Hysteresis and adaptation time scales of salt intrusion and the Turbidity Maximum Zone in a tidal estuary

Carolina Consuegra, Marius Becker, Frank Kösters, and Christian Winter

**3:00 PM** - Introduction of Poster Session P4

### **T4 - Wave and Shelf Dynamics I**

**4:30 PM** - Dynamics of coastal ocean fronts revealed by ocean gliders

Charitha Pattiaratchi

**4:45 PM** - Frontogenesis by material convergence in an estuary and its adjacent coastal ocean

Jing Chen, Robert H. Weisberg, Lianyuan Zheng, Chuanmin Hu, Yingjun Zhang, Alexander K. Nickerson, Jeffrey C. Donovan, and Yonggang Liu

**5:00 PM** - Cross-shelf heat transport by horizontal stirring

Gregory Gerbi and Anthony Kirincich

**5:15 PM** - Characterizing Seasonal Acoustic Ducts on the Washington Shelf

J. B. Mickett, R. R. Harcourt, G. Xu, E. Thorsos, D. Tang, J. Osborne, and T. Hefner

**5:30 PM** - Climatology and Synoptic Evolution of a Thermal Front Associated with a central California Upwelling Bay

Nathan P. Shunk, Piero L. F. Mazzini, Ryan K. Walter, Thomas P. Connolly, and April Thibodeau

**5:45 PM** - Superinertial trapped waves driven by shoaling internal solitary waves

G. Pawlak, Y. Chang, S. Tan, J. Rogers, K. Davis, and O. Fringer

## **WEDNESDAY**

### **W1 - Turbulence and Mixing**

**8:00 AM** - Estuarine Mixing

Hans Burchard, Knut Klingbeil, Xiangyu Li, Lloyd Reese, and W. Rockwell Geyer

**8:15 AM** - The structure and lifecycle of stratified mixing by shear instabilities in continuously forced flows

Adrien Lefauve, C. Bassett, D.S. Plotnick, A.C. Lavery, and W.R. Geyer

**8:30 AM** - Nonlocal improvements for turbulence closures near boundaries: Extension to rigid boundaries and forced free surfaces

R.R. Harcourt, B. Tian, C.C. Chickadel

**8:45 AM** - Sounding Out Complexity: Broadband Acoustic Insights into Estuarine Thermohaline Structure and Mixing

Elizabeth Weidner, Cloé Mueller, Thomas Blanford, Grant Deane, and Larry Mayer

**9:00 AM** - Asymmetries in currents and turbulent kinetic energy dissipation rates within a coastal salt marsh creek

Molly M. James and James O'Donnell

**9:15 AM** - Variability of internal wave driven mixing on a broad stratified shelf over multiple timescales

Joseph Jurisa and Jacqueline McSweeney

**9:30 AM** - Introduction of Poster Session P5

## **W2 - Estuarine Hydrodynamics III**

**11:00 AM** - Remote Sensing based Hydrodynamic Modeling in Data-Scarce Regions: Integrating ICESat-2 Sentinel-2 and SWOT for Coastal Monitoring in Langebaan Lagoon, South Africa

*Ali Reza Payandeh, Marc Simard, Anthony Campbell, Daniel Jensen, and Heidi van Deventer*

**11:15 AM** - Modeling and Monitoring Driftwood Transport and Remobilization in an Urban Coastal Inlet

*Brielle Biehn, Danker Koliijn, and Enda Murphy*

**11:30 AM** - Bathymetry-induced Internal Wave Generation at the Mouth of a Macrotidal Estuary

*Nicolas Cyr, Kimberly Huguenard, and Arnoldo Valle-Levinson*

**11:45 AM** - Examination of stratification and forcing in western Long Island Sound by a deep learning approach

*Reza Badpa and Kamazima M.M. Lwiza*

**12:00 PM** - Assessing the Role of Meteorological and Hydrological Forcing conditions in Modulating Estuarine Overtides

*Nalika Lakmali, Kimberly Huguenard, and Preston Spicer*

## **THURSDAY**

### **Th1 - Estuarine Hydrodynamics IV**

**8:00 AM** - Seeking the sources of shelf water causing salt intrusion in a salt wedge estuary under extreme drought conditions

*J.D. Pietrzak, T. Wegman, A.R. Horner-Devine, D.K. Ralston, and W. Kranenburg*

**8:15 AM** - Offshore storminess and seawater intrusion in the Sacramento-San Joaquin Delta

*Jenna Israel, Eli Ateljevich, Dan Cayan, and Laurel Larsen*

**8:30 AM** - Salt intrusion in two contrasting estuaries

*Carlos Schettini*

**8:45 AM** - Topographic complexity and tidal influences on salt flux in the oligohaline zone

*David K. Ralston, Dongxiao Yin, Robert Chant, Elias Hunter, and Benson Ossai*

**9:00 AM** - Quantifying the role of winds on estuarine residence time during floods in a Patapsco estuary model

*Carisa J. De Santos, Tina Geller, and Julia Moriarty*

**9:15 AM** - Exchange flow, eh?

*Parker MacCready, Erin M. Broatch, and W. Rockwell Geyer*

**9:30 AM** - Introduction of Poster Session P6

## **Th2 - Water Quality**

**11:00 AM** - Fecal Bacteria Exposure at Shellfish Beds in Dyes and Sinclair Inlets in the Salish Sea – a Modeling Study

*Aditi Mitra, Wenfei Ni, Tarang Khangaonkar, Merita Trohimovich, and Trevor Swanson*

**11:15 AM** - Modeling the impact of wastewater discharge on oxygen in Puget Sound

*Aurora J. Leeson, Dakota Mascarenas, Kathryn M. Hewett, Alexander R. Horner-Devine, Parker MacCready, and Michael T. Bretty*

**11:30 AM** - Flushing and hypoxia development in a salty, shallow, terminal inlet

*Dakota Mascarenas, Aurora J. Leeson, Katheryn M. Hewett, Alexander R. Horner-Devine, and Parker MacCready*

**11:45 AM** - The Pathogen Forecast Model: Forecasting Nearshore Water Quality and Swimmer Illness Risk for the US-Mexico Border Region

*Matt Spydell, Falk Feddersen, Akanksha Gupta, Sarah N. Giddings, Amaia Ruiz de Alegria-Azaburu, Ian Brunjes, Corey Olfe, Clarissa Anderson, Andrew D. Barton, Katherine Berman, Jeff Bowman, Bruce Cornuelle, Ganesh Gopalakrishnan, Shelby Marhoefer-Jess, Uwe Send, Mathias Lankhorst, and Nathali Cordero Quiros*

**12:00 PM** - Advection versus Local Processes: What Drives Warming and Deoxygenation in Massachusetts Bay?

*Stendert Laan, Lauriane Vilmin, Claudia Mazur, Christopher Goodwin, Francesca Di Paola, and Jos van Gils*

### **Th3 - Wave and Shelf Dynamics II**

**1:30 PM** - Hydrodynamics of kelp farms

*Kristen A. Davis, Cameron Hallett, Madolyn Kelm, Andrew Olivero, Rob Dunbar, Stephen Monismith, and Geno Pawlak*

**1:45 PM** - The Internal Surf Zone: Analyzing the Dynamics of an Inner Shelf Subjected to Energetic Internal Tides

*Andrea Rodriguez-Marin-Freudmann, Amy F. Waterhouse, Mark A. Merrifield, Sutara H. Suanda, Jennifer A. Mackinnon, and Peter J.S Franks*

**2:00 PM** - Potential mechanisms of near-bottom offshore export off Long Bay, SC

*Catherine R. Edwards and Harvey E. Seim*

**2:15 PM** - Atlantic Water Upwelling Beneath Landfast Ice, Utqagvik, Alaska

*Nawal S. O'Keefe, Steven Louis Dykstra, Andrew R Mahoney, and Laura Crews*

**2:30 PM** - Surface currents and coastal connectivity: Drifter-base insights for a Mid-Atlantic Bight offshore wind project

*Meg Shah and Michael M. Whitney*

**2:45 PM** - Wind waves and boat wakes: A case study of relative shoreline and bed impacts on East Pond, Maine

*Alejandra Ortiz, Danielle Wain, and Alison Bates*

**3:00 PM** - Introduction of Poster Session P7

## **FRIDAY**

### **F1 - Anthropogenic and Climate Influences**

**8:00 AM** - Improving representation of coastal processes in earth system models

*Emma Shie Nuss, Rob Hetland, Hannah Klion, Vijay Mahadevan, and Kyle Hinson*

**8:15 AM** - Anthropogenic Influence on the Dynamics of Mobile Bay: Effects of Mild to Severe Ship Channel Deepening and Widening

*Harikrishnan Sreeshylam, Zhilong Liu, Brian Dzwonkowski, John Lehrter, and Jeff Coogan*

**8:30 AM** - Assessing Impacts of Sea-Level Rise on Albemarle-Pamlico Sound: Foundations for Ecological Implications  
*Katherine Boot and Qianqian Liu*

**8:45 AM** - Atmospheric drivers of change in an Australian inverse estuary  
*Yasha Hetzel and Chari Pattiaratchi*

**9:00 AM** - Tidal evolution along a macro-tidal estuary from multidecadal in situ data  
*Juliette Pénicaud, Capucine Sourit, Isabel Jalon-Rojas, and Aldo Sottolichio*

**9:15 AM** - Impacts of Channel Dredging on Hypoxia in a Microtidal Stratified System: Mobile Bay, Alabama, U.S.A  
*Swathy Krishna Manoharan Chennakkattu, Zhilong Liu, Brian Dzwonkowski, and John Lehrter*

**9:30 AM** - Introduction of Poster Session P8

## **F2 - Estuarine Hydrodynamics V**

**11:00 AM** - Observations of Internal Tide in Greenland Fjord Generated by Subglacial Freshwater Discharge  
*Robert Sanchez, Fiamma Straneo, Ken Zhao, and Jennifer Mackinnon*

**11:15 AM** - Estuarine salinity climatology and variability from five-decade model hindcast in Mobile Bay, Alabama, U.S.A  
*Zhilong Liu, Brian Dzwonkowski, and John Lehrter*

**11:30 AM** - Annual deepwater renewal in a double-sill fjord estuary  
*Jilian Xiong, W. Rockwell Geyer, and Parker MacCready*

**11:45 AM** - A unified dynamical framework for semi-enclosed basins  
*Juan Torres-Cordoba, Oscar Alvarez-Silva, and Arnoldo Valle-Levinson*

**12:00 PM** - A global estimate of estuarine diel hypoxia due to tidal phasing  
*Nicholas J. Nidzieko*

**12:15 PM** - Across estuary classifications reveals patterns in exchange and stratification  
*Sarah N Giddings, Robert Sanchez, David Ralston, Oscar Alvarez Silva, Julie Chen, Yi-Ju Chou, Brian Dzwonkowski, Emily Lemagie, Zhilong Liu, Parker MacCready, Charles Seaton, David Sutherland, and Xiaodong Wu*

## Poster Program Details

### MONDAY

#### **P1 - Estuarine Hydrodynamics - 9:30 to 11:00 AM**

**12** - Mechanism Controlling Secondary Circulation and Dispersion in the Oligohaline Reach of Delaware River Estuary

*Benson Ossai and Robert Chant*

**13** - Investigating Tidally Driven Flows in Multi-Inlet Lagoons

*Cody Benton and Robert Chant*

**14** - The importance of salinity-velocity covariance in a macrotidal well-mixed estuary

*Cristian Rojas, Lauren Ross, Isabel-Jalón Rojas, Aldo Sottolichio, and Nicolas Huybrechts*

**15** - Quantifying Estuarine-Wetland Connectivity via SWOT and Hydrodynamic Modeling: The Komo Estuary

*Alexandra Christensen, Solomon Kica, and Marc Simard*

**16** - Dynamics-based classification of momentum balances in a salt-wedge estuary: Penobscot River (Maine, USA)

*Elias Pinilla and Lauren Ross*

**17** - Comparison of Tidal and Subtidal Advective Heat Fluxes in the Delaware Estuary

*Fatemeh Najafian and Jacqueline McSweeney*

**18** - Wind Effects on Dynamics of the Exchange Flow, Lateral Circulation, and Salinity Structure in Microtidal Estuaries

*Jianxing Wang, Johanna H. Rosman, and James L. Hench*

**19** - Ice-Tide Interactions in a Macrotidal Estuary

*Nicolas Cyr, Kimberly Huguenard, and Nalika Lakmali*

#### **P2 - Coastal Flooding and Extreme Water Levels - 3:00 to 4:30 PM**

**6** - Storm Surge and Coastal Inundation Nowcasts/Forecasts During Hurricanes Helene and Milton

*Yonggang Liu, Haibo Xu, Kaili Qiao, Sebin John, Sieu-Cuong San, Robert H. Weisberg, Jing Chen, Lianyuan Zheng, Sherryl Gilbert, Steven A. Murawski, Gary T. Mitchum, and Thomas K. Frazer*

7 - Physical drivers of water level variability and flooding in back-barrier estuaries

N.A. Nwogwu, *P. Orton, and R. Marsooli*

8 - Complicated tides contribute to spatiotemporal variability in Salish Sea extreme sea levels

*Preston Spicer*, Hannah Baranes, *Stefan A. Talke, and Ning Sun*

9 - A US Northeast Collaborative Approach to Supporting Maine's Coastal Resilience Priorities

Taylor Bailey Spencer, *Jessica Jansujwicz, Lauren Ross, and Kimberly Huguenard*

10 - Operational use of the coupled COAWST framework for extreme event prediction in the Patos Lagoon Digital Twin (DT - LAGOA)

Ornella Calloni, *Pablo Silva, Henrique Ferreira, Luís Felipe Mendonça, William Jacondino, and Elisa Fernandes*

11 - Role of Coastal and Shelf Geometry in the Characteristics of Continental Shelf Seiches

Tam T. Trinh, *Philip M. Orton, Mahmoud Ayyad, and Stefan A. Talke*

## **TUESDAY**

### **P3 - River Plumes - 9:30 to 11:00 AM**

1 - End-Member Mixing Analysis of Winyah Bay and Santee River Plumes

Jordan Small and *Diane B. Fribance*

2 - Momentum Driven Plume Region Classification: Winyah Bay, SC

Payton Merica and *Diane B. Fribance*

3 - Wind effects on colliding plumes in a northern Icelandic Fjord

Luke C. Glass and *Michael M. Whitney*

4 - Satellite-based observations and wind response of two river plumes on Iceland's Arctic coast

Michael M. Whitney and *Luke C. Glass*

**5** - Identifying the Impacts of Vertical Stratification in Setting the Ocean Climate in a Region of Fresh Influence: Mississippi Bight, U.S.A

Brian Dzwonkowski, Devanarayana R. M. Rao, Aravind Puzhankara, Zhilong Liu, Grant Lockridge, and Kyeong Park

**P4 - Sediment Dynamics and Biogeochemical Processes - 3:00 to 4:30 PM**

**20** - Identifying Patterns in Chesapeake Bay Biogeochemistry During Hurricane Isabel

Julia M. Moriarty and Carisa J. De Santos

**21** - Dynamics of Estuarine Air-Sea Carbon Dioxide Flux

Justin Cai and Malcolm Scully

**22** - Investigation of input reduction methods for process-based, morphologically accelerated modelling of estuaries and river deltas

Ewan Sloan, Nicholas Dodd, and Riccardo Briganti

**23** - Towards quantification of the Fraser Delta, Canada sediment budget

Noa Randall, Danker Kolijn, and Enda Murphy

**24** - Hydrodynamic Processes and Sediment Redistribution in the Bottom Boundary Layer of the Continental Shelf under the Influence of the Río de la Plata

Luis C.O. Lago and Carlos A.F. Schettini

**25** - Using real-world data and network analysis to inform larval dispersal modelling for invasive species management

Lily Engel, Abigail Keller, Benjamin Makhlof, Emily Grason, Thomas Therriault, Lakshitha Premathilake, Tarang Khangaonkar, and Lysel Garavelli

**WEDNESDAY**

**P5 - Turbulence and Mixing / Wave and Shelf Dynamics - 9:30 to 11:00 AM**

**1** - Residual Circulation Driven by Obliquely Incident Shoaling Internal Waves

Shuwen Tan and Walter Torres

**2** - Wave-Tide-Surge Interactions in an Idealized Estuary Shelf System

Malavika Sudhakaran and Kimberly Huguenard

**3** - Improving Significant Wave Height Forecasts with Optimized Attention-Based LSTM Models

Zheng Ren, Marc de Vos, Nalini Ravishanker, Namitha Viona Pais, and James O'Donnell

**4** - Internal waves in the Mid Atlantic Bight

Jacqueline McSweeney and Joe Jurisa

**5** - Direct Measurement of Drag on a Kelp Forest

Stephen G. Monismith, Geno Pawlak, Margaret Daily, Mathilde Lindhart, Isa Arzeno-Soltera, Hannah Walker, and James Leichter

**6** - Drivers of Interannual Variability of the Seasonal Evolution of Water Properties in New York Bight

Haocheng Yang and Jacqueline McSweeney

**7** - Objective Detection of the Shelf-Slope Front North of the Gulf Stream

Shiliang Shan, Francois Rivest, and Blair Greenan

## THURSDAY

### **P6 - Water Quality - 9:30 to 11:00 AM**

**8** - The Pathogen Hindcast Model: Effects of Wastewater Inputs and Bottom Friction on the Model Skill along the USA - Mexico Border Coastline

Akanksha Gupta, Falk Feddersen, Matthew Spydell, and Sarah N. Giddings

**9** - Sub-seasonal physical processes on dissolved oxygen dynamics during summer 2019 in Mississippi Bight, Gulf of America

Aravind Puzhankara, Brian Dzwonkowski, John Lehrter, Zhilong Liu, Grant Lockridge, and Devanarayana R.M. Rao

**10** - Diagnostic Tool Development for Assessment of Estuarine Wastewater Discharge Impacts

Bea E. Van Dam and Sean M.C. Smith

**11** - Field measurements for understanding the development of hypoxia in a terminal inlet in Puget Sound

Maia Heffernan, Alex Horner-Devine, and Jim Thomson

**12** - Ventilation in the Hypoxic Zone of Western Long Island Sound  
*Mehrnoosh Abbasian, Alejandro Cifuentes-Lorenzen, and James O'Donnell*

**13** - Coupled Hydrodynamic and Biogeochemical Assessment of Eutrophication Vulnerability in North Biscayne Bay: The Role of Nutrient Fluxes, Wind-Driven Circulation, and Residence Time  
*Luis H. Bordin, Kassidy Troxell, Henry Briceño, Reinaldo Garcia, Valentina G. Caccia, and Pierro R. Gardinali*

**P7 - Estuarine Hydrodynamics - 3:00 to 4:30 PM**

**14** - Impact of horizontal density gradients on tidal residual flows in scour pits  
*Arnoldo Valle-Levinson and Xinyu Guo*

**15** - Tidal dynamics in spring-fed subtropical estuary  
*Xavier Sanchez, Juan Torres-Cordoba, and Arnoldo Valle-Levinson*

**16** - Mapping Salinity Intrusion: A Satellite Remote Sensing Approach Linking Estuarine Turbidity Maxima To Low Salinity Zones  
*Dana R. Myers and Nicholas J. Nidzieko*

**17** - Flash drought and salt intrusion in the Hudson River Estuary, USA  
*Salme Cook and Liv Herdman*

**18** - Relative impact of inlet reconfiguration and seagrass decline on the hydrodynamics of a mesotidal inlet-lagoon system  
*Arnaud Le Pevedic, Aldo Sottolichio, Florian Ganthy, Alexandre Nicolae Lerma, and Paul Bayle*

**19** - Rapid response sampling of historic Skagit River flood into a Puget Sound basin: Effect on mixing  
*Erika McPhee-Shaw, Sam Kastner, Marisa Viola, and Amelia Bourne*

**20** - Comparing measurements of eddy viscosities to parameterizations in a salt wedge estuary  
*Lauren Ross and Arnoldo Valle-Levinson*

## FRIDAY

### **P8 - Anthropogenic, Climate, and Weather Influences - 9:30 to 11:00 AM**

**21** - Finding Middle Ground: Using Transient Response to Anthropogenic Morphologic Changes to Inform Sediment Transport and Hydrodynamic Modelling in the Hampton-Seabrook Estuary

*Liam Hanley and Matthew Fleming*

**22** - Adaptive mesh refinement in the REMORA ocean model

*Robert Hetland, Hannah Klion, Emma Nuss, Kyle Hinson, and Ann Almgren*

**23** - Spatio-temporal variability of the Rio de la Plata turbidity front and its links to climate forcing

*F. Pedocchi, F Maciel, and Rodrigo Mosquera*

**24** - Has the weather-driven component of coastal flood risk in Long Island Sound changed? Evidence from observations and models

*Marc de Vos and James O'Donnell*

**25** - Severe Weather induced Cross-scale Hydrologic Connectivity of Shark River Estuary and Slough within Florida Coastal Everglades, USA

*Tahsina Zarin and Wei Huang*

**26** - The role of upwelling dynamics in restraining the coastal impacts of the 2023 marine heatwave in the northern Gulf of America

*Devanarayana R.M. Rao, Brian Dzwonkowski, Aravind Puzhankara, Severine Fournier, Zhilong Liu, Uchenna Nwankwo, and Stephen Howden*

**27** - Impacts of Wave-Current Interactions on Ocean Waves during Hurricanes Ian and Idalia

*Sieu-Cuong San and Yonggang Liu*