69TH Annual Eastern Pacific Ocean Conference

EPOC 2023 Program

Photo courtesy of Caitlin Amos

Stanford Sierra Center, Fallen Leaf Lake, California

September 24-27, 2023

EPOC 2023 - Program Summary

Day 1: Sunday, September 24

3:00 PM	Check-in Begins *(Stanford Room)*
6:00 PM - 8:00 PM	Dinner *(Dining Room)*
8:00 PM - 9:00 PM	Fireside Chat, **Dr. Claudia Benitez-Nelson** *(Cathedral Room)*
9:00 PM - 11:00 PM	Bonfire Reception *(Old Lodge and Front of Lodge)*

Day 2: Monday, September 25

6:00 AM	Coffee available at the Stanford Room
7:15 AM - 8:20 AM	Breakfast *(Dining Room)*
8:30 AM - 11:20 AM	Morning Session *(Cathedral Room)*:
	(S1) Generating regional ocean forecasts and projections: best practices and tools
11:30 AM - 12:15 PM	Power Hour *(Cathedral Room)*
12:00 PM - 1:00 PM	Lunch *(Dining Room)*
1:00 PM - 3:00 PM	Free Time → 1:00 PM - 2:30 PM: Guided Hike *(Fountain Deck)* → 1:00 PM - 3:00 PM: Boating *(Boat Dock)*
3:00 PM - 5:45 PM	Afternoon Sessions *(Cathedral Room)*:
	(S3) Machine Learning: its potential and its limitations for understanding the dynamics of the Eastern Pacific
	(S4) FUTURE TALK: How can the EPOC community respond to ocean observing needs related to marine Carbon Dioxide Removal (mCDR) and Offshore Wind Energy?
5:45 PM - 6:00 PM	Poster Session Introductions *(Cathedral Room)*
6:00 PM - 7:30 PM	Dinner and Free Time *(Dining Room)*
7:30 PM - 8:00 PM	Poster Session Setup *(Angora Room)*
8:00 PM - 10:00 PM	Poster Session and Reception *(Angora Room)*

Day 3: Tuesday, September 26

6:00 AM	Coffee available at the Stanford Room
7:00 AM - 8:00 AM	Yoga *(Angora Room)*
7:15 AM - 8:20 AM	Breakfast *(Dining Room)*
8:30 AM - 12:00 PM	Morning Session *(Cathedral Room)*:
	(S5) General Session
12:00 PM - 1:00 PM	Lunch *(Dining Room)*
1:00 PM - 4:00 PM	Free Time
	→ 1:00 PM - 3:30 PM: Guided Hike *(Fountain Deck)*
	→ 1:00 PM - 4:00 PM: Boating *(Boat Dock)*
4:00 PM - 6:15 PM	Afternoon Session *(Cathedral Room)*:
	(S2) Oceanographic drivers of changes in biological resources in a changing climate
6:15 PM - 7:00 PM	Free Time
7:00 PM - 11:00 PM	Banquet and Entertainment, **The Rolling Heads** *(Dining Room/Deck)*

Day 4: Wednesday, September 27

6:00 AM	Coffee available at the Stanford Room
7:15 AM - 8:50 AM	Breakfast *(Dining Room)*
9:00 AM - 11:00 AM	Morning Session *(Cathedral Room)*:
	(S2) Oceanographic drivers of changes in biological resources in a changing climate (cont.)
11:00 AM - 12:00 PM	Additional Discussion for All Sessions *(Cathedral Room)*
12:00 PM - 12:30 PM	EPOC Business Meeting *(Cathedral Room)*
12:30 PM	End of Meeting
12:30 PM - 1:30 PM	Lunch *(Dining Room)*

8:30 am -11:20 am **(S1) Generating regional ocean forecasts and projections: best practices and tools**
Chairs: Liz Drenkard and Mer Pozo Buil

8:30 am Introductory Remarks

8:40 am **Mer Pozo Buil:** Evaluation of different dynamical downscaling methods for future projections of the California Current Upwelling System

9:00 am **Vivek Seelanki:** Validation of a Regional Implementation of MOM6 Against ROMS Simulations and Observations in the Northeast Pacific Ocean

9:20 am **Kristen Davis:** Multi-scale modeling tools to assess the potential of farming seaweed for biofuels and carbon sequestration

9:40 am **Christoph Renkl:** Impact of Marine Heatwaves on Atmospheric Rivers along the Coast of California

10:00 am *Morning Coffee Break*

10:20 am **Ganesh Gopalakrishnan:** Medium-length physical state estimates for the California Current System

10:40 am **Clarissa Anderson:** Managing expectations and imperfect information in regional forecasts of California HAB events

11:00 am *Discussion*

11:30 am-12:15 pm **Power Hour**

Led by: Dr. Claudia Benitez-Nelson

Diversity is important in our community and within our science. This year we are featuring Power Hour - a time to learn and empower ourselves on the topic of diversity, equity, and inclusion. In this thought-provoking activity, we will discuss, as a community, the meaning of diversity and how our actions matter. Additionally, our aim is to create a safe space where open, blunt comments and questions can be addressed. Everyone is welcome to attend! (attendance is voluntary)

12:15 pm- 3:00 pm **Lunch and Free Time**

*Student Presenter

3:00 PM - 3:50 PM **(S3) Machine Learning: its potential and its limitations for understanding the dynamics of the Eastern Pacific**
Chair: Albert J. Hermann

3:00 PM Introductory Remarks

3:05 PM **Albert J. Hermann:** Hybrid climate downscaling for the Northeast Pacific using deep learning methods

3:25 PM *Discussion*

3:45 PM *Afternoon Coffee Break*

4:05 PM - 5:40 PM **(S4) FUTURE TALK: How can the EPOC community respond to ocean observing needs related to marine Carbon Dioxide Removal (mCDR) and Offshore Wind Energy?**
Chairs: Clarissa Anderson, Henry Ruhl, Jan Newton, and Nick Rome

4:05 PM Introductory Remarks

4:10 PM **Todd Martz:** Observing CO2 Changes in the Southern California Current System

4:30 PM **J. Paul Mattern:** Integrating autonomous pH observations and statistical estimates with dynamical ocean models: an approach to estimate the state of the carbonate system in the Eastern Pacific Ocean

4:50 PM *Discussion*

5:45 PM - 6:00 PM **Poster Session Introductions**

6:00 PM - 7:30 PM **Dinner and Free Time**

7:30 PM - 8:00 PM **Poster Session Setup**

8:00 PM -10:00 PM **Poster Session and Reception**

*Student Presenter

EPOC 2023 - Tuesday, September 26

8:30 AM -12:00 PM **(S5) General Session**
Chairs: Caitlin Amos and Allison Moreno

8:30 AM Introductory Remarks

8:40 AM **Melanie Fewings:** Seasonal changes in the contributions of salinity and temperature to density stratification along the Newport Hydrographic Line, Oregon, USA

9:00 AM **Brandy Cervantes:** Deconstructing the 2023 anomalous freshwater event in the coastal waters off Oregon and Washington

9:20 AM **Crissy Huffard:** Pyrosome carcasses on the abyssal seafloor: possible surface ocean drivers of downward flux, and ecological fates

9:40 AM **Patrick Daniel*:** Assessing event-scale variability of phytoplankton abundance and community structure in Monterey Bay

10:00 AM *Morning Coffee Break*

10:20 AM **Shailja Gangrade*:** Constraints on potential phytoplankton biomass and community structure: physical, hydrographic, and biogeochemical drivers in the California Current System

10:40 AM **Jordyn Moscoso:** Modeling wildfire-induced phytoplankton blooms along the US West Coast

11:00 AM **Eliza Lerman*:** Identification of California wildfire induced phytoplankton blooms through remote sensing

11:20 AM *Discussion*

12:00 PM- 4:00 PM **Lunch and Free Time**

*Student Presenter

4:00 PM - 6:15 PM	**(S2) Oceanographic drivers of changes in biological resources in a changing climate** Chairs: Will White, Mallarie Yeager, and Loo Botsford
4:00 PM	Introductory Remarks
4:10 PM	**Mark Morales*:** Context matters: drivers of mortality across contrasting environmental conditions for an ecologically important fish of the California Current System
4:30 PM	**Mallarie Yeager:** Assessing the role of larval connectivity on kelp forest fisheries across the California MPA network
4:50 PM	*Afternoon Coffee Break*
5:10 PM	**Richard Brokaw*:** The effects of surface flow variability on primary productivity in the Santa Barbara Channel
5:30 PM	**Will White:** Links between characterizing variability in ocean conditions under climate change and characterizing their ecological effects on fished populations
5:50 PM	*Discussion*
6:15 PM - 7:00 PM	**Free Time**
7:00 PM -11:00 PM	**Banquet and Entertainment with *The Rolling Heads***

*Student Presenter

EPOC 2023 - Wednesday, September 27

9:00 AM -11:00 AM **(S2) Oceanographic drivers of changes in biological resources in a changing climate (cont.)**
Chairs: Will White, Mallarie Yeager, and Loo Botsford

9:00 AM Introductory Remarks

9:05 AM **Zhuomin Chen:** Skillful Multiyear Prediction of Marine Habitat Shifts Jointly Constrained by Ocean Temperature and Dissolved Oxygen

9:25 AM **Julia Cheresh*:** High resolution projections of ocean acidification and hypoxia in the central California Current System

9:45 AM **Brandy Cervantes:** A new subsurface climatology for the Olympic Coast National Marine Sanctuary

10:05 AM *Morning Coffee Break and Check-out*

10:45 AM *Discussion*

11:00 AM-12:00 PM **Additional Discussion for All Sessions**

12:00 PM-12:30 PM **EPOC Business Meeting**

12:30 PM **EPOC 2023 is Adjourned**

12:30 AM- 1:30 PM **Lunch**

*Student Presenter

Session 2	**Oceanographic drivers of changes in biological resources in a changing climate**
Tatum Delaney*	Comparing rhino auklet distribution in national marine sanctuaries and offshore wind developments
Session 4	**FUTURE TALK: How can the EPOC community respond to ocean observing needs related to marine Carbon Dioxide Removal (mCDR) and Offshore Wind Energy?**
Henry Ruhl	Technology evaluations for offshore wind industry baseline and impact assessment - A Synchro pilot study
Session 5	**General Session**
Caitlin Amos	Vertical temperature and salinity structures off Oregon and Washington from gliders and a regional ocean model
Élise Beaudin*	S-MODE Expedition: A Submesoscale Soup Odyssey
Eric Bjorkstedt	"Man" Verses Sea: Examples of (and an invitation to create and share) poetic representations of scientific insights into ocean dynamics, structure, and ecosystems
Elizabeth Drenkard	A regional physical-biogeochemical ocean model for marine resource applications in the Northeast Pacific
Erin Guderian*	Investigating the relative contribution from tropical Indo-Pacific SST to Asian monsoon precipitation variability using LIM
Geno Pawlak	Short wave attenuation in a Macrocystis pyrifera kelp forest
Allison Moreno	Coastal Respiration Quotient and its Limitations
Jacob Partida	Preliminary Moored Hydrographic Observations Using a Wire Walker and Novel pH Sensor Offshore of Trinidad, CA
Noel Pelland	The composite southeast Bering Sea shelf nutricline, within a multi-decade compendium of NOAA Alaskan hydrography
Andrew Scherer*	Nearshore Nitrate Response to Wind on the Newport Hydrographic Line, Oregon, USA
Manman Wang	High resolution of Long-term Observations and applications of HF Radar along west coast of Canada
Anthony Wilson*	Radiative Constraints on Earth's Warmest Surface Temperatures