

Program

# Offshore Science Costa Rica



Exploring Costa Rica's Deep-Sea and Thermal Dome:  
Science, Conservation, and Collaboration

3-5 December, 2024 | Universidad de Costa Rica

## **Welcome to the first Offshore Science Costa Rica Symposium (OSCRI-2024)!**

We are thrilled to welcome you to the Universidad de Costa Rica (UCR) for OSCRI-2024, where our shared objective is to deepen our understanding of Costa Rica's offshore ecosystems and to collaboratively shape the future of exploration, research, and policy for their protection and sustainable management.

This event has been made possible through the collective efforts of researchers, students, and volunteers from various UCR institutions, including:

**CIMAR:** Centro de Investigación en Ciencias del Mar y Limnología (Marine and Limnological Sciences Research Center).

**CIBET:** Centro de Investigación en Biodiversidad y Ecología Tropical (Biodiversity and Tropical Ecology Research Center).

**CICG:** Centro de Investigación en Ciencias Geológicas (Geological Sciences Research Center).

**CIEMIC:** Centro de Investigación en Estructuras Microscópicas (Research Center for Microscopic Structures).

**EB:** Escuela de Biología (School of Biology)

**ECG:** Escuela Centroamericana de Geología (Central American School of Geology)

We also appreciate the support of OVSICORI (Volcanological and Seismological Observatory of Costa Rica) and the School of Physics at the Universidad Nacional de Costa Rica. We also extend our gratitude to Friends of Cocos Island Foundation, Bezos Earth Fund, Charles Darwin Foundation, Fundación MarViva, Conservation International, Crustal Ocean Biosphere Research Accelerator, Blue Nature Alliance, SINAC (Sistema Nacional de Áreas de Conservación), Schmidt Ocean Institute, along with many other invaluable collaborators.

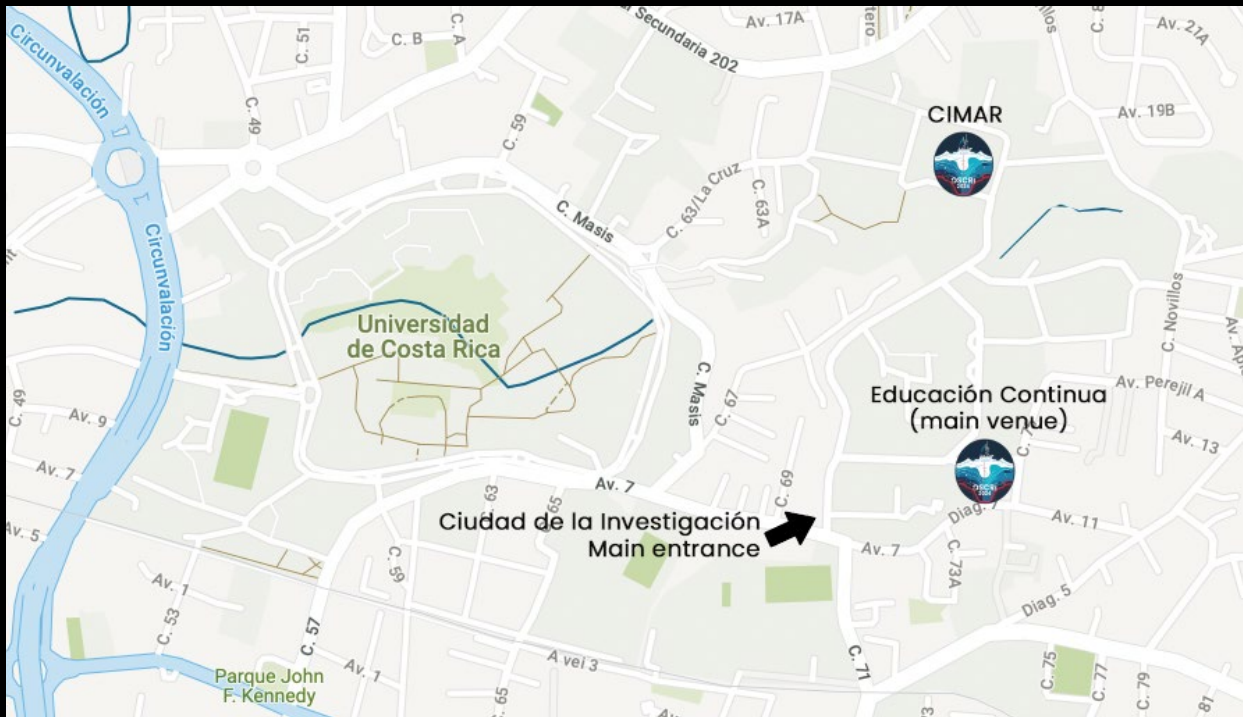
We look forward to an inspiring and productive symposium that will encourage valuable insights and build meaningful partnerships in offshore science.

**OSCRI-2024 Organizing Committee,**

*Jorge Cortés & Beatriz Naranjo*

## Venue locations – UCR Campus – Ciudad de la Investigación

Location	Activities
Educación Continua	Main venue (Auditorium) + Costa Rica Desconocida imagery and art exhibit. <b>All days start at the Educación Continua Auditorium.</b>
CIMAR	Ice breaker – Museum of Zoology and PaleoLab exhibits – Poster session and farewell reception



If you're driving, there is only one visitor car entrance to the *Ciudad de la Investigación*. Parking is available, and the guards at the entrance will direct you to the designated areas. There are several walking routes to the venues. A staff member will be at the Ave del Paraíso Hotel early (time TBD) on the first day to guide you along the best path.

### Virtual Streaming Available on YouTube

Costa Rica Desconocida Channel

<https://www.youtube.com/@CostaRicaDesconocida>

# Daily schedule

## Day 1

TUESDAY, DEC 3

9:00 Registration

9:30 Welcome

9:45 **Offshore Geological Setting:  
Morphotectonic Evolution of the  
Cocos Plate**  
Marino Protti, Universidad Nacional de Costa Rica

10:15 Deep Sea Ecosystems:

**Methane Seep Insights  
and Surprises on the  
Costa Rica Margin**

Lisa Levin, Scripps Institution of Oceanography  
VIRTUAL PRESENTATION

**Coral Ecosystems of the  
Costa Rica Seamounts**  
Erik Cordes, Temple University

**The Surprising Life of  
Seamounts in the  
Pampa Submarina**

Beth Orcutt, Bigelow Laboratory for Ocean Sciences

11:15 Coffee break

11:45 **Deep Sea Sediments from  
the Pacific of Costa Rica**  
María Isabel Sandoval, Universidad de Costa Rica

12:15 **Radiolarian-based  
paleoceanographic  
reconstruction**  
Alexis Rodríguez, Universidad de Costa Rica

12:30 Lunch break

13:30 **Abyssal Traces**  
Carlos Hiller, Independent Artist

13:45 **Octopus in Hot Water**  
Rachel Lauer, University of Calgary

14:00 **Deep-Sea Microbial Ecosystem  
Services**  
Julie Huber, Woods Hole Oceanographic Institution

14:15 **Microbiome Analysis of Rocky  
and Sedimentary Substrates  
from Deep-Sea Mounds**  
Gustavo Ramirez, California State University - Los Angeles

14:30 **Metal Impacts on Deep-Sea  
Microbial Communities and  
N-Cycling Potential**  
Miguel Semedo, University of Porto  
VIRTUAL PRESENTATION

14:45 Break



15:00 **Understanding the Influence of  
Depth on the Global Deep-Sea  
Plasmodome**  
Keilor Rojas, Universidad de Costa Rica

15:15 **Deep-Sea Fungi :  
Morphological, Genetic, and  
Enzymatic Characterization**  
Ivonne Rodríguez, Universidad de Costa Rica

15:30 **Assessing Foundation Species  
Distributions Across the Methane  
Seep Landscape of the Costa  
Rican Pacific Margin**  
Emily Cowell, Temple University

15:45 Mobilization to CIMAR lobby

16:15 Ice breaker + Exhibits



# Day 2

WEDNESDAY, DEC 4

**8:30** Coffee and networking

**9:00** **The Thermal Dome**  
Jorge Jiménez, Fundación MarViva

**9:30** **A social history of the Thermal Dome: Uses and governance challenges of an offshore space in the Eastern Tropical Pacific**  
Nadège Legroux, University Paul Valéry Montpellier III & French Development Agency

**9:45** **Building capacity and technology transfer from ocean observations in the Thermal Dome: the Argo-Dome project**  
Addy Echeverría, Pelagos Okeanos

**10:00** **Isla del Coco: The Offshore Oceanic Island**  
Jorge Cortés, Universidad de Costa Rica

**10:30** Coffee break

**11:00** **The importance of public-private partnerships for marine conservation**  
Alejandra Villalobos, Friends of Cocos Island

Image: Schmidt Ocean Institute

**11:15** **Diving deeper to assess elasmobranch temporal trends at Isla del Coco: a decade of submersible observations**  
Fabio Pérez, Universidad de Costa Rica

**11:30** **Identification of biodiversity hotspots in the Eastern Pacific Ocean**  
Erick Ross, MigraMar

**12:00** **Three-dimensional habitat compression of large pelagic fishes and its effect on fishing effort in the Eastern Tropical Pacific**  
Tyler Clarke, Independent Researcher

**12:15** Lunch break

**13:15** **Deep Sea Art and Science, The Magic of Collaboration**  
Michel Droge, Bates College

Image: Schmidt Ocean Institute



**13:30**

## Panel Discussion

**Connecting science, practice, governance, and policy perspectives to promote marine legislation, international cooperation, and stakeholder's engagement**

### Moderator

**Diva Amon**  
SpeSeas Founder and Director  
University of California, Santa Barbara Scientific Advisor

### Panelists

**Sergio Cambrero**  
Sorbonne Université  
Universidad Nacional de Costa Rica  
Research Scientist

**Ana Gloria Guzmán**  
Conservation International Costa Rica  
Executive Director

**Mariamalia Jiménez**  
Ministry of Foreign Affairs of Costa Rica  
Head of the Department of Sustainable Development, Ocean and Environment

**Haydée Rodríguez**  
Conservation International  
High Seas Director



Image: Schmidt Ocean Institute

**15:00** Afternoon break

**15:15** Afternoon open session:  
Free-choice period.



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Image: Schmidt Ocean Institute

# Day 3

THURSDAY, DEC 5

**8:30** Coffee and networking

**9:00** **Advancements in oceanographic knowledge of Costa Rica's Pacific Exclusive Economic Zone**

Sergio Cambrero, Sorbonne Université & Universidad Nacional de Costa Rica

**9:30** **Chemical Oceanography of Costa Rica's Offshore**

Eddy Gómez, Universidad de Costa Rica

**10:00** **Lightning talks**  
Poster presentations

**10:15** **Coffee break**

**10:45** **Lightning talks**  
Poster presentations

**11:00** **Schmidt Ocean Institute in the Eastern Tropical Pacific**

Leonard Pace, Schmidt Ocean Institute  
VIRTUAL PRESENTATION

**11:15** **Equitable collaboration in deep-ocean research: the 'OctoMESS' case study**

Maila Guilhon, Ocean Voices Programme

**11:30** **Challenges to protect ocean marine areas**

Esteban Herrera, Sistema Nacional de Áreas de Conservación (SINAC)

**11:45** **Costa Rica Desconocida**

Beatriz Naranjo, Universidad de Costa Rica & Ocean Voices Programme

**12:00** **Lunch break**

**13:15** **Envisioning the future of Costa Rica offshore exploration, research and policy**  
Working groups and other activities

**15:00** **Afternoon break**



Image: Schmidt Ocean Institute

**15:15** **Summary and Conclusion**

**15:45** **Mobilization to CIMAR**

**16:15** **Poster session**

**17:15** **Farewell Reception**



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## General agenda

Time	Tue, Dec 3	Wed, Dec 4	Thu, Dec 5
8:30		Morning coffee and networking	Morning coffee and networking
8:45			
9:00	Registration and coffee	Thermal Dome	Oceanography
9:15		<b>Jiménez</b>	<b>Cambronero</b>
9:30	Welcome		<b>Gómez</b>
9:45	Geosciences		
10:00	<b>Protti</b>	Isla del Coco	Lightning talks (posters)
10:15			Coffee break
10:30	Deep Sea		
10:45	Ecosystems	Coffee break	Lightning talks (posters)
11:00	Q&A	Isla del Coco	Collaboration
11:15	Coffee break	<i>Villalobos</i>	<i>Pace*</i>
11:30		<i>Pérez</i>	<i>Guilhon</i>
11:45	Geosciences	ETP connectivity	<i>Herrera</i>
12:00		<b>Ross</b>	<i>Naranjo</i>
12:15	A.Rodríguez	<i>Clarke</i>	Lunch @ Educacion Continua
12:30	Lunch @ Educacion Continua	Lunch @ Educacion Continua	
12:45			
13:00			
13:15		Art	<b>Envisioning the future of Costa Rican Offshore Exploration, Research and Policy (working groups and different activities)</b>
13:30	Art	<i>Dröge</i>	
13:45	Biosciences	<b>Panel Discussion: Science to Policy</b>	
14:00			
14:15			
14:30			
14:45	Afternoon break		
15:00	Biosciences	Afternoon break	Afternoon break
15:15		Afternoon Open Session:	Summary and Conclusion
15:30			
15:45	Mobilization to: CIMAR	A free-choice period for joining the Jungle Campus Tour, exploring the art exhibit, connecting informally with other participants, or other activities of interest.	Mobilization to: CIMAR
16:00			Poster Session (CIMAR Lobby)
16:15	Ice breaker, PaleoLab and Museo de Zoología Exhibits		
16:30			
16:45			
17:00			
17:15			Farewell Reception
17:30			
17:45			
18:00			
18:15			

\*Online presentation

# Poster session

THURSDAY, DEC 5

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## Deep-Sea Collections of the Museum of Zoology: A Resource for the Study of Oceanic Biodiversity

Wendolyn Matamoros, Universidad de Costa Rica

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## A new species of *Rhinochimaera* (Rhinochimaeridae) from the Pacific coast of Central America supported by morphological and molecular evidence

Naidely Vidaurre, Universidad de Costa Rica

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## From sunlit to dark depths: Osa Peninsula's offshore environments and biodiversity

Beatriz Naranjo, Universidad de Costa Rica & Ocean Voices Programme

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## Geological analysis of marine sediments in the Térraba-Sierpe deltaic system

Laura Alvarado, Universidad de Costa Rica

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## Foraminiferal associations as environmental indicators: a study in surface sediments from the Pacific platform zone of Costa Rica

Maricruz Valverde, Universidad de Costa Rica

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## Preliminary Results of the Microfauna Analysis from Marine Sediments at the El Dorado and Tengosed Sites, Pacific of Costa Rica

José Mario Masís, Universidad de Costa Rica

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## Microplastics in marine and estuarine/alluvial sediments of the central-south Pacific of Costa Rica: characterization and spatial distribution

Armando Bonilla, Universidad de Costa Rica

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## Geospatial Information of Cocos Island through Photogrammetric and LIDAR Technology

Randy Chinchilla, Friends Cocos Island (FAICO)

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## ACMC Climate change adaptation plan

Gabriel Rodríguez, Friends Cocos Island (FAICO)

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