

# MixONET

**Mixotrophy in the Oceans:  
Novel Experimental designs  
and Tools for a new trophic  
paradigm**

[www.mixotroph.org/mixonet](http://www.mixotroph.org/mixonet)

**19 members (17 countries):**

Anukul Buranapratheprat (Thailand), Amany Ismael (Egypt), Áurea Ciotti (Brazil), Ahmed Al-Alawi (Oman), Beatriz Reguera (Spain), Fernando Unrein (Argentina), Hae Jin Jeong (S. Korea), Helga Gomes (USA), KB Padmakumar (India), Koji Suzuki (Japan), Luciana Santoferrara (USA), Maite Maldonado (Canada), Mengmeng Tong (China), Michaela Larsson (Australia), Patricio Diaz (Chile), Robinson Mugo (Kenya), Tina Šilović (France).

**SCOR WG 165 (Jan 2022 – Dec 2024)**  
**Chairs: Aditee Mitra & George McManus**





# The Mixoplankton Paradigm

- With the exception of diatoms, most protist plankton are capable of both phago-trophy and photo-trophy
- The implications of widespread mixotrophy for trophic function have not been adequately explored
- The SCOR MixONET working group is focused on bringing the mixoplankton paradigm to researchers, resource managers, policy makers, and educators so that a more realistic understanding of coastal food webs can be used for environmental management and literacy.



# Recent MixONET Activities

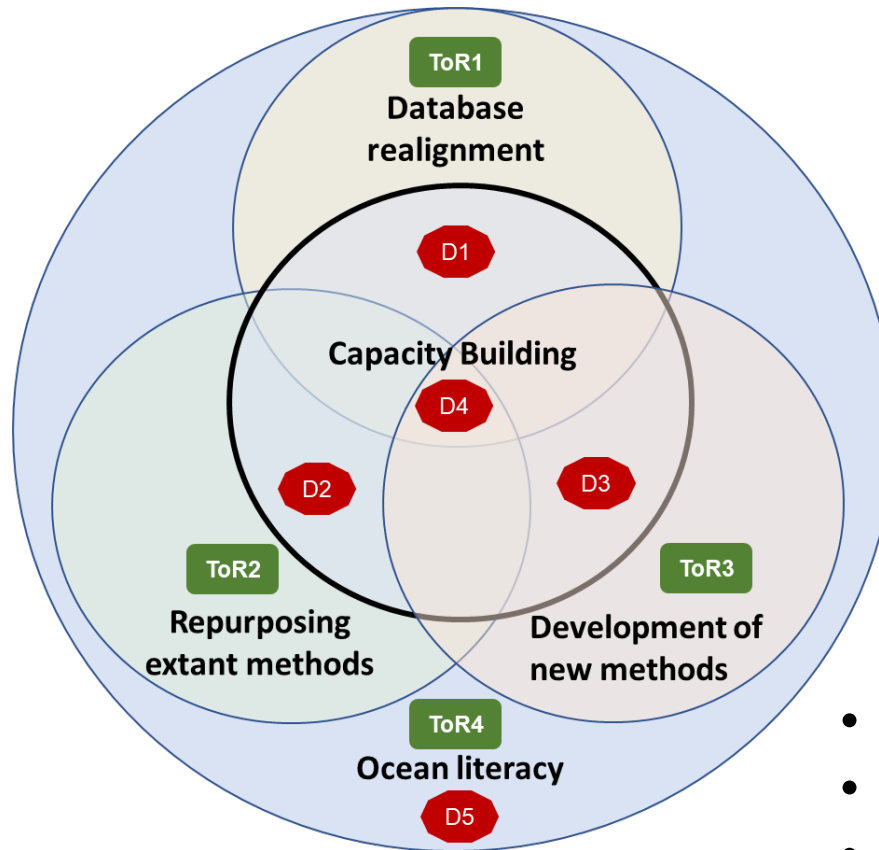


- Monthly virtual meetings
- ASLO session in Mallorca, Jun 2023
- Planned special section in Journal of Plankton Research
- Article in HAB News October 2023
- Six refereed publications acknowledging SCOR support
- Co-chair Mitra hosted a POGO-SCOR fellow
- Collaboration with Ocean Teacher Global Academy.
- Planning for 2024 in-person meeting



# MixONET ToRs Update

## Four Terms of References



### ToR 1 Database realignment

‘The Mixoplankton Database’ {Mitra et al.}

- L4 Database {Richardson et al. in prep}
- Australian databases {Larsson et al. in prep}
- HANA Database {Ismael et al. in prep}
- Other regional databases (LIS, etc.)

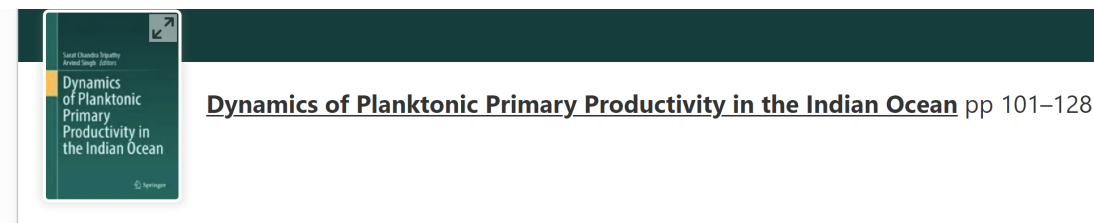
### ToRs 2&3 Repurposing extant & developing new methods

- SCOR exceptional funding {Unrein & Santoferrara}
- POGO-SCOR fellowship {Naik to work with Mitra}
- CSC PhD funding {Tong & Mitra}



# Highlights: ToR1 Database Realignment

- Published:
  - The Mixoplankton Database [Mitra et al. 2023]
  - Indian Ocean book chapter [Mitra & Leles 2023]
- In preparation:
  - metaPR2 database MS [Larsson, Santoferrara, Faure, Leles, Mitra, McManus, Vaultot]
- Regional databases (LIS, Australian etc.)

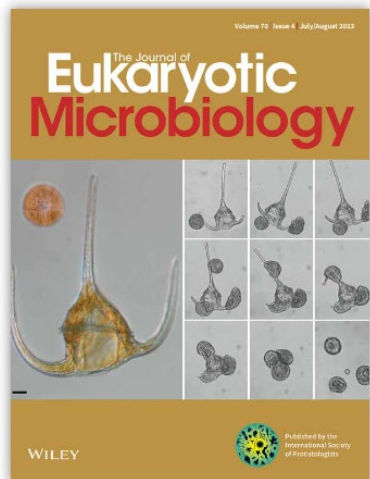


[Home](#) > [Dynamics of Planktonic Primary Productivity in the Indian Ocean](#) > Chapter

## A Revised Interpretation of Marine Primary Productivity in the Indian Ocean: The Role of Mixoplankton

[Aditee Mitra](#) & [Suzana Gonçalves Leles](#)

Chapter | [Open Access](#) | [First Online: 13 September 2023](#)



ORIGINAL ARTICLE | [Open Access](#) |

## The Mixoplankton Database (MDB): Diversity of photo-phagotrophic plankton in form, function, and distribution across the global ocean

[Aditee Mitra](#), [David A. Caron](#), [Emile Faure](#), [Kevin J. Flynn](#), [Suzana Gonçalves Leles](#), [Per J. Hansen](#), [George B. McManus](#), [Fabrice Not](#), [Helga do Rosario Gomes](#), [Luciana F. Santoferrara](#) ... [See all authors](#)

First published: 27 February 2023 | <https://doi.org/10.1111/jeu.12972> | Citations: 3

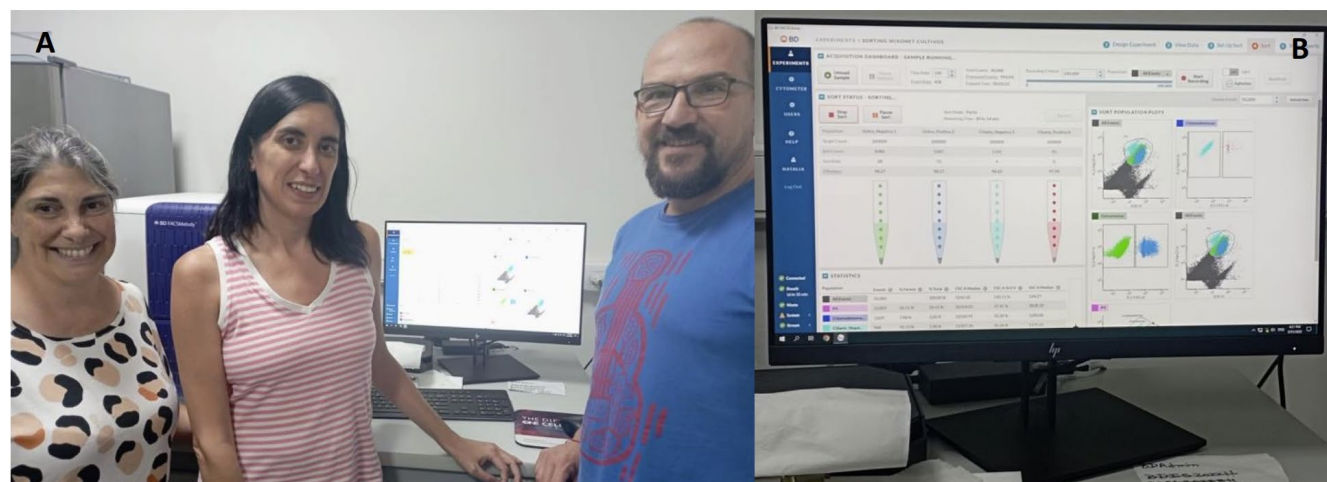
*MixONET Report - SCOR Annual meeting Oct 2023*

# Highlights: ToRs 2&3

## Repurposing extant & developing new methods

- Completed: SCOR exceptional funded project [Unrein & Santoferrara; March 2023]
- Integration of laboratory data with system dynamics modelling [CSC-funded PhD student: Tong & Mitra]
- Grant to study the mucus trap mechanisms of *Prorocentrum* [Mitra, Larsson et al. 2024]

“Exceptional” Call for SCOR Project and Working Groups Scholars







microorganisms



Article

**Mucus-Trap-Assisted Feeding Is a Common Strategy of the Small Mixoplanktonic *Prorocentrum pervagatum* and *P. cordatum* (Prorocentrales, Dinophyceae)**

Urban Tillmann <sup>1,\*</sup> , Aditee Mitra <sup>2</sup> , Kevin J. Flynn <sup>3</sup>  and Michaela E. Larsson <sup>4</sup> 





# Highlights: ToR4 Ocean Literacy

- Mixoplankton Module in 'Marine Microbiology & Biogeochemistry' OTGA training course [medium Spanish; prepared & delivered by Santoferrara]
- Special session hosted at ASLO 2023 in Palma Mallorca [featured in HAN article October 2023]



## Microbiología y Biogeoquímica Marina [online]

IOC/OTGA/STC Argentina/Iniciativa Pampa

Azul

Training Course

08 - 28 February 2023

Overview

Agenda

Participants

### Microbiología y Biogeoquímica Marina [online]

#### Summary

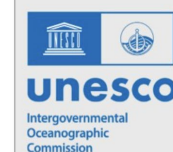
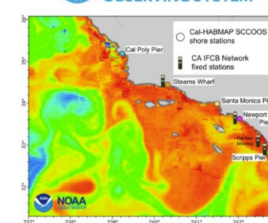
#### Descripción del curso/ resumen

El curso tiene una orientación técnica destinada a brindar los pasos fundan durante el desarrollo de actividades de investigación vinculadas a la Biogeoquímica campaña de investigación oceanográfica. Los contenidos permitirán abordar microorganismos que viven en la columna de agua o en dependencia de una contaminación por nano- y microplásticos. Se tratarán los pros y cons de los distintos objetivos, las fuentes de error y el equipamiento requerido para el

## Harmful Algae News

AN IOC NEWSLETTER ON TOXIC ALGAL BLOOMS  
No. 73 - October 2023 - <https://hab.ioc-unesco.org/>

**Rapid response to a massive marine mammal stranding event associated with domoic acid poisoning in central to southern California**



#### Content

**Featured article**  
Massive mammals stranding and domoic acid poisoning in California, *Clarissa Anderson* and colleagues

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International/National Conferences

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