

Welcome

Welcome to Ocean Bridges! We are a research group within the Mediterranean Institute of Oceanography (MIO). In this manual you will find general MIO information to navigate the administration and use of the labs. Next, you will find more precise information about how our research group works, including practical information such as orders and travel. Finally, the philosophy and code of conduct of our group is introduced, to which you will receive a more detailed explanation by Mar.

Should you have any questions or remarks about this manual, please contact Mar at mar.benavides@ird.fr

General information about MIO

MIO is a French public research institution gathering ~250 researchers, early career scientists and engineers from CNRS, IRD, AMU and Université de Toulon. MIO has four different locations: Luminy, La Seyne-sur-mer, Toulon and New Caledonia, although the great majority of MIO scientists are located in the main lab in Luminy.

The direction and structure of MIO is revised every 5 years via public audition (<u>HCERES</u>). Every epoch receives a number (MIO1-2-3...) . We are currently in MIO2 and heading towards MIO3, which will start in January 2024. The current director (Directeur d'Unité or DU) is Valérie Michotey <u>valerie.michotey@mio.osupytheas.fr</u>. The head of the administration is Juliette Espié <u>juliette.espie@mio.osupytheas.fr</u>

MIO3 is structured as:

- <u>5 research teams (équipes):</u> CYBELE, MEB, OPLC, EMBIO and CEM
- 4 transversal research axes: POMPE BIOLOGIQUE, ETE, COUPLAGE and CONTAM
- <u>9 research platforms:</u> SAM, PACEM, OMICS, CULTURE, MIM, MACROPHYTES, HPC, PRECYM, Radioactivité

Ocean Bridges is part of the CYBELE team.

Much of the information provided below is thoroughly explained in the MIO's manual.

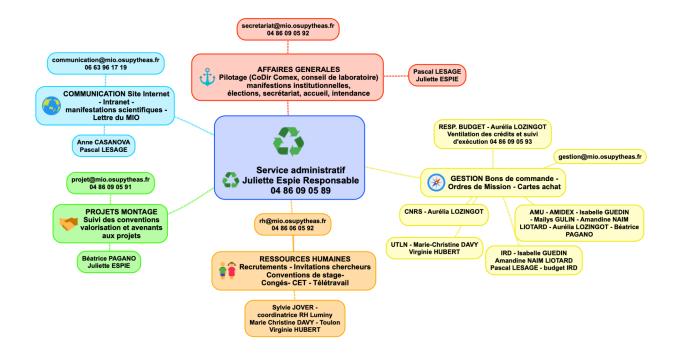
Administration contacts

For general administrative enquiries or obtaining an official signature of the DU contact secretariat@mio.osupytheas.fr

For human resources contact rh@mio.osupytheas.fr

For communication and media contact communication@mio.osupytheas.fr

For project proposals and funding applications contact projet@mio.osupvtheas.fr



Accessing MIO

MIO's front desk is open from 8 am to 4 pm. Before/after those hours or on holidays you will need to access the building using your badge, which you will get on arrival from the front desk (philomene.bereni@mio.osupytheas.fr). Philomene will also provide you with a key for your office. Ocean Bridges labs keys are shared among group members.

Settling in Marseille

The Euraxess AMU office provides information about how to open a bank account, getting your social security number, etc https://euraxess.univ-amu.fr/en/practical-information

Transport

The MIO OCEANOMED building is located here in the Luminy Campus. If arriving by:

- Plane: take bus L91 Airport-Saint Charles, metro line 2 to Rond-Point Prado and bus B21 or Jet to Luminy Campus-PN Calanques
- Train: Take metro line 2 to Rond-Point Prado and bus B21 or Jet to Luminy Campus-PN Calanques

The public transportation network (Réseau Transport Marseille or RTM) includes metro, tramway, buses and bikes. Public electric bikes can be rented for long-term periods here.

Time tables and line maps can be accessed via:

- RTM <u>ios app</u>
- RTM google play

You can get a public transportation monthly, quarterly or yearly pass <u>here</u>. For student discounts and IRD/AMU co-funding please contact <u>sylvie.jover@mio.osupytheas.fr</u>

E-mail

You will have an @mio.osupytheas.fr and @amu-univ.fr or e-mail upon arrival and over the duration of your contract. Access extensions beyond your contract need to be requested to sylvie.jover@mio.osupytheas.fr (please cc your PI).

You will also have an @oceanbridges.net e-mail to access the Ocean Bridges drive and shared calendar (see Ocean Bridges section below).

Printers and scanners

For installing printers check instructions <u>here</u>. For any troubleshooting contact the IT service (see below). Every printer can be used as a scanner. You can save your scanned files using an USB-key or send them from the printer directly to your e-mail address.

IT support

For any IT related problems contact the IT service by putting in a <u>ticket</u>. MIO server can be accessed here smb://srvstk0l.osupytheas.fr if at MIO or through <u>VPN</u> when you're not physically at MIO.

Lab/office maintenance troubleshooting

Any electrical, furniture, or plumbing repairs, contact kamel.idri@osupytheas.fr and put in a ticket

MIO letterhead

A template can be found <u>here</u>. You can edit as needed according to your contact details (make sure you save it under a different file name).

Lab and chemical security

For chemical/gas use/disposal contact frederic.vaultier@mio.osupytheas.fr
Please check general hygiene and security procedures here

Equipment, lab space, meeting rooms and car reservations

To book microscopes, culture rooms, meeting rooms or specific labs access $\underline{\mathsf{GRR}}$, select MIO-Luminy and the item/duration of your reservation.

The use of MIO <u>platforms</u>* requires prior authorization and signature of code of conduct ("charte") documents.

*Important: Please cc your PI in any correspondence with platform or analytical service responsibles. Everytime you plan to need such analyses, make sure you contact the engineer in charge and myself in advance to plan analyses schedules, engineer and equipment availability, methods and storage.

Platform	Paperwork* *all chartes and forms need to be signed by me	Contacts		
OMICS platform wetlab	Fill in <u>charte</u> Book in <u>GRR</u>	laurie.casalot@mio.osupytheas.fr lea.sylvi@mio.osupytheas.fr *you need to get lab security and hygiene training by Léa before using any OMICS platform labs *training among students/postdocs is not allowed, you must receive training directly from your PI or by OMICS platform personnel		
OMICS platform drylab	Fill in <u>charte</u>	fabrice.armougom@mio.osupytheas.fr		
MIM (microscopy) platform	Fill in <u>charte</u> Book in <u>GRR</u>	veronique.cornet-barthaux@mio.osupythe as.fr loic.guilloux@mio.osupytheas.fr		
Culture platform temperature-controlled rooms and mesocosms	Book in GRR	sylvain.davidson@mio.osupytheas.fr dominique.lefevre@mio.osupytheas.fr		
Culture platform cyanobacteria cultures, laminar flow hoods and culture media preparation procedures *users of any cell culture resources are required to contribute to culture lab cleaning procedures. Please contact mercedes.camps@mio.osupytheas.fr in advance for an introduction	Book thermostated culture rooms in GRR	mercedes.camps@mio.osupytheas.fr		
PACEM (analytical platform) *we use it only for DOC analyses or DOM extractions, as the rest (i.e. nutrients, IRMS, MIMS) is available from the CYBELE team -see below-)	Fill in <u>analysis</u> request form	catherine.guigue@mio.osupytheas.fr lea.guyomarch@ird.fr		
PRECYM (flow cytometry)	Fill in training request form	aude.BARANI@univ-amu.fr gerald.gregori@mio.osupytheas.fr		
	Fill in <u>analysis</u> request form	*you need to training by Aude before using any flow cytometer		
SAM (seagoing and oceanographic instrumentation)	Any service requests are taken every 6 months, you'll be notified by email when the call is open. For	nagib.bhairy@mio.osupytheas.fr deny.malengros@mio.osupytheas.fr micheL.lafont@osupytheas.fr		

	minor matters you may contact Nagib directly, anytime.	
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Other technical service besides platforms include those available in the CYBELE team*:

*Important: Please cc your PI in any correspondence with platform or analytical service responsibles. Everytime you plan to need such analyses, make sure you contact the engineer in charge and myself in advance to plan analyses schedules, engineer and equipment availability, methods and storage.

Analysis type	Paperwork* *all chartes and forms need to be signed by your PI	Contact
Nutrients, DON/DOP	Fill in analysis request form	sandra.nunige@mio.osupytheas.fr
MIMS	Fill in analysis request form	olivier.grosso@mio.osupytheas.fr
EA-IRMS	Fill in analysis request form	olivier.grosso@mio.osupytheas.fr

Accessing scientific literature

You can access scientific literature using <u>bibCNRS</u> and your MIO credentials. You may also install the <u>AMU Lama extension</u> on your browser and access using your AMU credentials.

MIO/AMU access to software and Cloud

Matlab MIO cloud AMU cloud

Microsoft office can be accessed using your AMU account Other software available via AMU are listed <u>here</u>

Coffee and meals

An espresso coffee machine is available on Pacifique building and paid on a consumption basis paid regularly via PayPal. To be added to the espresso machine user list please contact marc.garel@mio.osupvtheas.fr and christian.tamburini@mio.osupvtheas.fr

There are also vending and coffee machines available at the amphiteatre (lecture) hall (close to MIO's main entrance and reception) and in salle convivialité (first floor Mediterrannée building).

Microwaves and fridges to store your meals are available in salle convivialité and SAM kitchen (Mediterranée -1 floor). The latter may be closed after 4pm.

Food trucks are available at the entrance of Campus and next to MIO on a daily basis. Vegan food can be requested for delivery at MIO on Thursdays (ask elvira.pulido-villena@mio.osupytheas.fr, she also knows about a veggie basket delivery on Campus). A university canteen called "Crous" is open on academic calendar working days at the entrance of Campus. The library (Hexagone) also has a small café with sandwiches, salads and pastries.

Hanging out

We gather for lunch informally on most working days at MIO (outside if sunny) and meet regularly outside the lab for all sorts of activities including hiking, bouldering, diving, concerts, dinners, drinks... you name it! Nobody is forced to attend any of these events. We have a Whatsapp group chat to ease communication, preferable for leisure purposes (try prioritizing Slack for work-related purposes).

The Ocean Bridges group philosophy

We are a multidisciplinary group of young scientists focused on understanding the interactions between marine diazotrophs and their environment. From molecular to cellular interactions to the impact of marine microbes on global climate, microbial processes in the ocean are interconnected across the spatiotemporal spectrum:

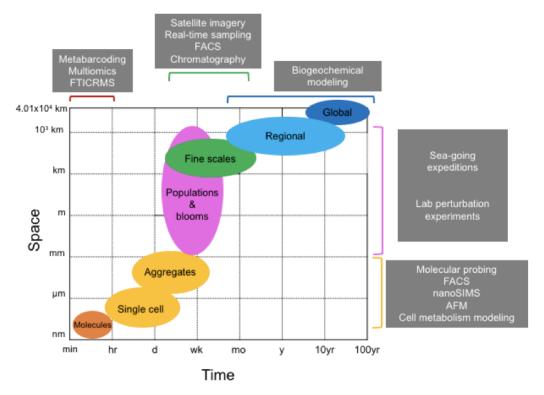


Fig. 1: The spatiotemporal scales of microbial processes in the ocean ranging from minutes to 100 years in time and from nm to 4.01×10⁴ km (the circumference of the Earth) in space. Colored ellipsoids represent processes at different spatiotemporal scales. Frames and text along axes indicate the techniques my group uses to investigate each given spatiotemporal scale.

Our goal is to <u>build bridges linking spatiotemporal scales</u> to understand the microbiological complexity of the contemporary ocean and predict how it will behave in the future. We combine stable isotope, molecular biology and biogeochemistry methods to unveil how microbes shape oceanic biogeochemical cycling.

A group vision statement presentation can be found <u>here</u>. Each new group member will be introduced to these concepts on arrival. This is a live working document, you are welcome to contribute to it with ideas and suggestions.

Code of conduct and roles

We aim at a friendly, respectful, diverse and fun research group. We come from different countries, so English is our preferred communication language. We do not tolerate racism, exclusion, harassment, racial or gender based phobias of any kind. Members are encouraged to promote a collaborative environment, helping and caring for each other in the group. Please report your Pl with any problems you are facing, conflicts between members or with other MIO scientists/engineers/students, as long as they imply a disruption in the cohesion of the group or your ability to work. These will be treated confidentially.

We are here to do excellent and ambitious science. We aim at being productive, but sustainable, maintaining a healthy work-life balance. You are encouraged to be creative. Scientific creativity is

boosted by reading scientific literature: knowing what's going on in your field is the only way to add something new to it. Be up-to-date with the scientific literature in your field.

Science is possible thanks to public funding. As such, we are committed to conduct responsible and respectful science, and to report our findings back to society. This is done by sharing scientific knowledge through academic publications, conferences and outreach actions.

In our commitment to society, group members are expected to produce high quality work and to share it. Keeping writing habits is essential, as most of our knowledge is transmitted by writing. Make writing a priority.

Most professional conflicts arise from a misunderstanding of roles. A research group is composed of various members, which include students, postdocs, engineers and the PI. Knowing your role, that is, your duties and rights, as well as that of the other group members is essential for a smooth and collegial functioning of the group.

PI's roles

- Respectful communication with all group members
- Providing funding for the group's research activities according to the objectives of each project
- Running group meetings once a week
- Holding follow-up meetings with each group member once a month
- Holding career perspective meetings with each group member once a year
- Facilitating access to labs and research platforms
- Revising written work, oral presentations, lab protocols and results if handed in in working days and with sufficient time in advance before deadlines
- Provide guidance and constructive critics
- Resolve potential conflicts among group members
- Providing support for personal issues as long as they imply a disruption of your professional tasks

Students' and postdocs' roles

*PhD students are handed a copy of the book <u>How to get a PhD</u> on arrival, which I find a very useful read and has inspired much of what is written below.

- Respectful communication with all group members
- Prepare for follow-up meetings and keep minutes
- Academic rigor: no data cheating, no microscope pictures without scale, no graphs without axis labels
- Participate in sea-going expeditions and lab experiments
- Be up-to-date with scientific literature
- Assist co-group members
- Keep lab benches and materials clean
- Respect MIO's labs and platforms rules
- Back-up your work once a week
- Communicating your PI before contacting other labs or scientists to propose a collaboration, use their equipment or proposing a visit
- Autonomy for logistics (orders, lab), organizing your lab and desk work
- Ask questions when something is not clear rather than taking unsure actions
- Ambition and creativity: adding ideas to your project is encouraged. Make sure you clearly
 explain to your PI what is the question you want to answer and why it is important to the
 field. We will discuss how to incorporate new objectives within the philosophy of the group
 and the resources available

Engineers' roles

- Respectful communication with all group members
- Assist PI, students and postdocs with their projects

- Participate in sea-going expeditions and lab experiments
- Run lab analyses
- Organize materials orders in coordination with MIO's administration
- Supervise lab cleanings
- Organize lab materials
- Keep inventories of consumables, reagents and samples
- Assist with sample shipments

Group functioning

Group meetings

Group meetings are held weekly, usually on Mondays 4:30 pm in the Aquarium meeting room located in Mediterrannée building ground floor. Please let myself and other members know if you're not coming or if you are late. Prepare for group meetings so that they are a fruitful learning experience for all of us.

All meetings start with a brief "tour de table" where every group member explains what they have been working on over the past week and what they intend to work on in the following one. This is aimed at keeping all members updated with what everybody is doing and to foster cooperation among members. After this brief tour de table, every week we alternate between:

- Presentations: a group member presents recent data, a presentation for a talk/seminar/meeting, an idea, an experimental setup... free format. Remember to request the HDMI/VGA projector to france.van-wambeke@mio.osupytheas.fr or elvira.pulido-villena@mio.osupytheas.fr in advance if it's your turn to present.
- Journal clubs: the member in charge chooses a scientific publication and sends it to all members at least 3 days in advance. On the group meeting day, this member presents the paper briefly (max 10min) and we all discuss what we like/don't like about the paper and what we can learn and apply to our own research from it. Papers outside our comfort zone (other disciplines) are encouraged for mind-opening and inspirational purposes. Be creative! Papers just in your reading list but not necessarily of interest for any other group members are strongly discouraged (please don't use the journal club as your sole chance to fulfill your reading duties).

Individual follow-up meetings

Individual follow-up meetings are held monthly. Dates/times for these will be arranged between each group member and the PI. Group members are responsible for booking a meeting room using <u>GRR</u>. If any group member is traveling or working from home, weekly group meetings are accessible via <u>our permanent zoom room link</u>. You may also program zoom meetings using your AMU credentials through <u>this link</u>. Make sure you tick-off "access to only AMU members" when scheduling zoom calls attended by external people.

Please prepare for the meeting by preparing an update of the following:

- Overview of long-term goals
- Detailed discussion of short-term goals (ongoing work)
- Open discussion (may include general comments, any misunderstandings/conflicts with other group members or your PI, etc)

If a monthly meeting frequency is too low or high for you, please ask your PI for a rearrangement.

Once a year, each group member can arrange career perspective meetings with the PI to look back and reflect about the progress done, professional goals and steps to accomplish them and other career strategies.

Communication

General comments/remarks can be communicated during weekly group meetings. For the sake of respecting each other's time, If your comment does not concern others in the room, please keep them for an appropriate meeting.

Group members are encouraged to gather their questions for the dedicated follow-up meetings held on a monthly basis. If you need to discuss with your PI in between monthly meetings, requesting extra meetings is preferred to unscheduled show-ups.

For practical/managerial matters and internal group daily communication please prioritize <u>our Discord channel</u> over email. Any communication including non-group members will necessarily need email.

Ocean Bridges drive

You can access from www.oceanbridges.net it using your @bridges.net credentials

The drive includes folders for each group member, administration and platform access resources, lab and analytical protocols, R code scripts, etc. You can also add your favorite songs to our Spotify Playlist.

Ocean Bridges shared calendar

You can access it from www.oceanbridges.net or here using your @bridges.net credentials. It has two calendars: "group calendar" and "Mar away". Adding it to your desktop calendar software is strongly recommended.

Make sure you enter your birthday! And add in any dates/times you're away (on a cruise, course, etc) for all group members to be aware.

Labs

We have a main lab located in Pacifique building ground floor (Bridges lab) and a storage room in Pacifique building first floor. The Bridges lab is shared with severine.martiny@mio.osupytheas.fr, so being respectful for bench space is required. Please do not leave any of your materials, lab coats, etc, on her side of the lab bench. She works with bioluminescence and may need to dim or turn off the lights in the lab sometimes. Make sure you check signs posted on the door before coming in. Both the Bridges and Bridges stock labs are opened with two different keys shared among group members. Most of the time they are open, but remember to close them when leaving for the weekend and extended periods of time such as holidays.

The Bridges lab is "live", meaning no aldehyde fixatives must enter the room. For any sample fixation please access the chemical hoods located in the mesocosm or culture platform labs. Reagent weighting and medium preparation can be done in the culture platform lab. Please contact mercedes.camps@mio.osupytheas.fr before using the culture platform lab or accessing any culture transfer laminar flow hoods.

Avoiding contamination: we use ¹³C and ¹⁵N-labeled substrates to trace microbial metabolism routes. Make sure you differentiate labeled from non-labeled materials. This applies to incubation bottles, tweezers, filtration tubing, swinnex, etc.

Sample storage

We have two -20C freezers:

- One in the Bridges lab used exclusively for reagents, primers and probes
- One in the Bridges storage room used exclusively for samples and DNA extracts

A common CYBELE -80C freezer is located in the Pacifique building ground floor. Cold rooms (4C) are available in many locations in the Pacifique building ground floor. A small 4C fridge is available in the Bridges lab and used for cold reagents/chemicals/microscopy dyes, etc. For culture media needing refrigeration please use the cold room just in front of the Bridges lab.

Lab cleaning: Umuganda

Inspired by Rwanda's popular and collaborative town cleaning efforts called <u>Umuganda</u>, we clean our lab on a monthly basis, usually before our group meeting. This is marked in the group's shared calendar.

Cleaning procedures include:

- Wear gloves for freezers, fridges and molecular biology cabinet
- Make sure there's no tube or container without labels
- No food or drinks in the lab
- Refill pipette tip boxes
- Empty normal trash, bench mini trash, bio trash, and chemicals if full
- Clean bench surfaces, pipettes, door/cabinet/freezer/fridge handles with EtOH
- Vacuum and wipe floor

Chemicals

A list of the chemicals and reagents of our group and their storage location can be found here. Remember no aldehydes must enter the Bridges lab. Acid and ethanol are to be handled under chemical hoods.

Data

Please backup your data on a weekly basis

It is requested from you to keep a copy of all data you produce here and in the Ocean Bridges MIO server folder accessible from here or via VPN (see above). Another copy is to be made on the group's external drive once a week.

A common Linux desktop computer is available for bioinformatics analyses. For computing power demanding analyses contact fabrice.armougom@mio.osupytheas.fr and/or contact me for putting in an AMU's Mesocentre computing time request.

Orders and work-related travel

Check this folder for various order/travel resources

Orders and travel management depend on the source of funding. Projects can be financially managed by IRD, CNRS or AMU. In Ocean Bridges as January 2023, our currently available funding is structured as follows:

IRD funding	CNRS funding	AMU funding
amandine.naim-liotard@mio.o supytheas.fr Billing address IRD DR SE 44bd de Dunkerque 13002 Marseille	aurelia.lozingot@mio.osupyth eas.fr Billing address CNRS SCTD, 2 rue Jean Zay 54519, Vandoeuvre Les Nancy Cedex,	mailys.gulin@mio.osupytheas.fr Billing address 3 place Victor Hugo 13003 Marseille
IDEFIX	France DEFINE2	MANIOC
DINDE	DEI INCE	FIESTA
SCAN		
NOTION		

Steps to put in an order:

- 1. Ask for a quotation using this <u>template</u> (make sure you use the right billing address depending on the project paying) and <u>supplier contact list</u>
- 2. If your supplier is new and has not worked with MIO before, they will need to enter their invoice through CHORUS (financial software). English instructions for doing so can be found here.
- Upload your quotation pdf to <u>SIGED</u> and make sure you select the correct funding source from the project table above. The administration may ask you for the <u>NACRES code</u> of a particular product.
- 4. Once your query has been put in, I will receive an email asking for approval of your order
- 5. The project budget administrator produces a "bon de commande" or "BC" (purchase order)

 please send it to me as soon as you receive it -
- 6. Now fill in the Ocean Bridges shopping list using the following color code:

 Blue font: ordered but not received
- Black font: received
- 7. Once items are received Philomène Bereni (MIO's welcome desk) sends an email to all of us
- 8. Go to the delivery room at MIO's main entrance, pick your package and store it where necessary (pay attention to conservation temperatures of any chemical or molecular bio products)
- 9. Scan the delivery note and send it to the corresponding project budget administrator according to the table above

Steps to request travel:

Just as with orders, travel can be paid by different entities depending on the funding. All travel requests ("ordre de mission" or OM) must be completed online providing all relevant details (e.g. reason of travel, dates, trajects, type of transport and expenses expected). Independently of which project your travel is charged on, you must report your travel (dates you will be outside of the lab) for security reasons to your employer. The list of people hired under each entity is provided in the last row of the table below:

IRD funding	CNRS funding	AMU funding
isabelle.guedin@mio.osupyth eas.fr	aurelia.lozingot@mio.osupyth eas.fr	isabelle.guedin@mio.osupyth eas.fr
Connect to FCM/Rydoo and find your flights/trains/hotels. *Note that lowcost travel is not allowed	Connect to FCM/Rydoo and find your flights/trains/hotels. *Note that lowcost travel is not allowed	Connect to FCM/Rydoo and find your flights/trains/hotels. *Note that lowcost travel is not allowed
Fill in an "ordre de mission" or "OM" via <u>SIGED</u> and add in the dedicated case the details of your travel (dates, flight codes, hotel, etc)	Fill in an "ordre de mission" or "OM" via <u>SIGED</u> and add in the dedicated case the details of your travel (dates, flight codes, hotel, etc)	"OM" via <u>SIGED</u> and add in the dedicated case the details
Fill in an "ordre the mission" or "OM" via Sorgho *Note that if you are hired by IRD but traveling with AMU funding, you still need to ask for an OM "sans frais" within Sorgho		
Hired on IRD Alba Filella Subhadeep Chowdhury		Hired on AMU Elena Cerdan Cora Hörstmann Christian Furbo Arthur Coët Cécile Carpaneto

Affiliation

Our official affiliation* for paper/poster presentations is:

¹Aix Marseille Univ, Université de Toulon, CNRS, IRD, MIO UM 110, 13288, Marseille, France

Intellectual property and publication authorship policy

All funding projects must be properly acknowledged in publications, conference posters and oral presentations. Please cross-check with your PI when writing this part of your paper, as different funding agencies may have specific requests on how funding is acknowledged in written scientific work and conferences.

We adhere to the <u>Vancouver Convention of Co-authorship</u>. The corresponding author of all scientific work produced within our group is the PI. Postdocs are co-corresponding authors with the PI if the journal allows multiple co-corresponding authors.

Social media

You are encouraged to contribute and make our research visible to the community through Twitter Ocean Bridges group account: @BridgesOcean

Password: groupoceanbridges2020

We have a GoPro available if you'd like to make videos to showcase your research.

Common e-mail account group@oceanbridges.net groupoceanbridges2020

²Turing Center for Living Systems, Aix-Marseille University, 13009 Marseille, France

^{*}note that at MIO only Ocean Bridges members are part of the Turing Center for Living Systems