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Abstract

This deliverable describes the outcomes of the trans-national access programme (TNA) offered at EMBRC France, in terms of: installations available, applications received and user's projects performed (through on-site and / or remote access), users' profile and other stats (country of origin, career profile, type of organization, satisfaction of the services used).



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1. Introduction

Transnational Access in ASSEMBLE Plus is provided to a total of 36 marine stations in 15 countries. In the whole consortium, the stations provide access to a high diversity of marine environments; from the high Arctic (IOPAN) and Antarctic (UKRI-BAS) to the tropics (IUI and NIOZ-CNSI) and the mid-Atlantic ridge (CCMAR and IMAR). Within mainland Europe, access is provided to the Mediterranean, the Atlantic and the Baltic seas. Habitats comprise estuaries (e.g. SZN, ISMAR, CCMAR, AWI, IOPAN, UG), mega-tidal seas (SBR), cold-water coral reefs (KMRS, NUIG, SAMS), brackish seas and sea ice communities (IOPAN, TSZ, ARI, HBS), near-shore deep sea (HCMR, IMEV, NUIG, UGOT, SAMS) and volcanic seeps (high CO₂ – low pH; HCMR, SZN, IMAR). The TA-providing stations (access providers) have modern research laboratories and a wide array of specialized research facilities to support internal and external users. Several of these also have technological backup of nearby university institutions.

This deliverable describes the outcomes of the trans-national access programme (TNA) offered at EMBRC France, in terms of: installations available, applications received and user's projects performed (through on-site and / or remote access), users' profile and their stats (country of origin, career profile, type of organization, satisfaction of the services used).

2. Objective

This deliverable intends to show the outcomes of the transnational access programme executed at EMBRC France (intended here as the three marine stations of Sorbonne University – CNRS: Station Biologique de Roscoff, SBR; Institute de la Mer de Villefranche-sur-mer, IMEV; Observatoire oceanologique de Banyuls-sur-mer, OOB) hence contributing to the ASSEMBLE Plus objectives:

- Enhance transnational access to a coordinated set of state-of-the-art European infrastructures for marine biology and ecology;
- Improve service provision by these infrastructures in line with their areas of excellence in marine biology and ecology, with emphasis on developing novel key enabling technologies and data solutions;
- Strengthen complementarity and interoperability within the consortium and with related infrastructures;
- Lay the logistical and strategic foundations to expand the coverage of the European Marine Biological Resource Centre (EMBRC) in both its scope and its geographical distribution and to consolidate its long-term sustainability.



3. Outcomes of the Transnational Access programme

3.1 Overview of the access provider(s)

EMBRC France is organized into an integrated national marine biological resource centre, access being coordinated via a single-entry point. Through its 3 installations, EMBRC France provides access to Atlantic (SBR) and Mediterranean (OOB, IMEV) ecosystems, and to their biota. The infrastructure provides a wide range of cultured marine organisms (bacteria, micro- and macro-algae, zooplankton, metazoans such as sponges, acoels, crustaceans, tunicates, cnidarians, Amphioxus, and some vertebrates) as well as eukaryote and prokaryote genetic resources. The 3 stations have developed specialized high-tech imaging technology platforms, including expertise in marine biological sample preparation. Each installation comprises teaching facilities and research units providing high quality science.

3.2 Installations offered

EMBRC France offered access to the three marine stations of Sorbonne University – CNRS, with a specific set of installations:

3.2.1 Roscoff (SBR)

- **Access to ecosystem:** Coastal Research Vessel: 1 research vessel *Neomysis* (length 12 m), for coastal fishing, dredging, plankton net, hydrology, etc. sampling gears and instrumentation available on board. This unit operates up to 30 miles off shore. Two lighter boats (length 6 m) versatile and transportable, these units provide access to the coastal waters (< 5 miles), including on very shallow depths (ex. estuaries). Used in particular for diving operations. Scuba diving facilities: Implementation of visual inspection methods, sampling protocols or experiments. Collection and supply of local marine flora and fauna specimens done on foot at low tide, by diving or by boat. Most of the specimens can be provided on site or remotely.
- **Experimental facilities:** Dry and wet laboratories with sea running water for observation and molecular biology. The laboratories are fully equipped and basic consumables and reagents are also provided. Access to open/closed circuit running seawater experimental infrastructures - Aquaria/tanks from 15 to 4000L; Regulation of temperature, pH, salinity, tide, etc. possible, and expertise.
- **Marine model cultured: Macro-organisms** Dogfish (*Scyliorhinus canicula*) eggs, Ascidiars (*Ciona intestinalis*, *Phallusia mammilata*), Sea urchin (*Paracentrotus lividus*), Acoel (*Symsattigifera roscoffensis*). Access provided on site and remotely.
- **Roscoff Culture Collection:** (RCC) maintains over 5000 strains of marine phytoplankton, bacteria and viruses. Cryopreservation and identification of strains. Microalgae: cyanobacteria *Synechococcus* and *Prochlorococcus*; prasinophytes *Ostreococcus tauri*, *Bathycoccus prasinos* and *Micromonas pusilla*; coccolithophore *Emiliana huxleyi*.
- **Merimage Platform:** Imaging (Confocal, Fluorescence, Transmission Electron Microscopy).
- **Expedition:** Shipment for Biological Resources.

3.2.2 Villefranche-sur-mer (IMEV)

- **Marine models culture IMEV:** the Aquariology Service of Villefranche (SAv) is the research support service, providing and managing marine biological resources for the scientific community. The biological resources come from the natural environment or are cultivated in the laboratory. The Aquariology



Service also provides experimental space and equipment to the users. It supports research teams wishing to develop new models but also on the implementation of experimental projects. The Aquariology Service is committed to a quality approach for the last 3 years, aiming to improve services and the traceability of the resource.

- **CCPv:** The Centre for Planktonic Collections of Villefranche sur Mer (CCPv), created in 2013 is a unique European facility open to the scientific community. It hosts today about 30 000 plankton samples collected in all oceans and preserved either in Formaldehyde at room temperature, in alcohol or frozen. The oldest samples are more than 100 years old. The CCPv uses an internal management protocol using unique barcodes for a complete traceability of the sample history and the management of all successive operations.
- **MCCV:** The Mediterranean Culture Collection of Villefranche (MCCV), created in 2010, is a collection of marine microplanktonic organisms isolated mainly from the Mediterranean Sea and the Bay of Villefranche. This collection includes auto, mixo or heterotrophic protists and focuses mainly on diatoms and dinoflagellates. The MCCV also maintains unicellular benthic organisms that are self or mixotrophic, such as the toxic genus *Ostreopsis* and the associated microalgal consortium. The MCCV is integrated into EMBRC which provides access to biological resources to the scientific and industrial communities for basic and applied research.
- **Ecosystem access:** IMEV's research vessels and team of professional divers provide access to the coastal and offshore marine ecosystems, playing a key role in the Institute's activity. The equipment at sea allows the collection of organisms of all size ranges, as well as the monitoring of physico-chemical parameters of the water column. The access to the marine coastal ecosystem is provided by the vessels « Sagitta III » (chartered by the French Oceanographic Fleet) and « Pelagia ». These vessels allow to deploy instruments (sensors, planktonic nets, profilers) and to support diving activities. Experts on marine coastal environment and marine habitats, professional divers provide the marine resources collection. The diving service also cooperate to deployment and to the maintenance of the observation buoys and several oceanographic instruments.
- **Zooscan / flowcam IMEV:** the access to the quantitative imaging instruments is provided at the IMEV by the Quantitative Imaging Platform (PIQv). The platform uses very specific imaging and processing tools developed by the Oceanography Laboratory of Villefranche sur mer, and it provides different services, such as:
 - Analysis of plankton samples by imagery (FlowCAM/ZooScan)
 - Trainings (FlowCAM/ZooScan/UVP/EcoTaxa)
 - Instrument inter-calibration (UVP)
 - Rental of in-situ imaging instruments (UVP)
 - Hosting of scientists for samples analysis using instruments and software of the platform
 - Hosting and classification of images and data in the EcoTaxa application
- **Imagery IMEV:** The Microscopy Platform (PIM) provides for the researchers' community (local and visitors) an access to state-of-art microscopes, supporting research projects providing microscopes dedicated for live marine samples (i.e. 18°C microscopy rooms). The equipment includes both photonic microscopes (widefield and confocal) and environmental scanning electron microscopy suited non-conductive biological samples. The platform also proposes image analysis and sharing microscopy images using Omero service.
- **Host space IMEV:** Different kind of work spaces are offered to the visitors at the IMEV: wet and dry lab are available to the hosting, including consumable supply on the bases of the visitor's requirements. A CMR work space is also available, equipped with a chemical hood, in order to allow the use of the Carcinogenic, Mutagenic and Reprotoxic chemicals (abbreviated as CMR chemicals) and to ensure chemical safety.



3.2.3 Banyuls-sur-mer (OOB)

- **Cytometry OOB:** Flow cytometry (Analysis and sorting), Transmission electron microscope (Chemical prep, and cryopreparation of microbial samples), Fluorescence microscopes Wide Fields (Cameras + contrast imaging), Laser scanning microscope (spectral, temporal gating, HyD, PMT).
- **Bio2mar OOB:** Extractor ASE 350, Genevac EZ2-HCl, freeze dryer, HPLC-DAD-Fluo-CAD-ELSD, UHPLC-HRMS Qexactive, QTOF, LC-MS GC-MS, GC-FID, RMN.
- **Lab space OOB:** 1 lab and dry lab equipped for observation (Binocular and microscope, incubator, fridge, freezer, small aquarium), for molecular biology (fume hood, PCR machine, nanodrop), 2 offices.
- **Marine models culture OOB:** *Branchiostoma lanceolatum*, tunicates (e.g., *Phallusia mamillata*), annelids (e.g., *Ditrupa arietina*), cnidarians (e.g., *Corallium rubrum*), *Paracentrotus lividus* (eggs), *Aurelia aurita* (polyps and ephyrae), Zebrafishes (eggs and larvae), *Amphiprion ocellaris* (eggs and larvae), *Pocillopora damicornis* (frags and eggs), Dogfish *Scyliorhinus canicula* (eggs) and Banyuls Bacteria Culture Collection: ca. 2500 living strains of marine bacteria.
- **Ecosystem OOB:** 1 research vessel Nereis (length 12 m.) for coastal fishing, dredging, plankton net, hydrology, etc. Basic sampling gears and instrumentation available on board, as well a wet laboratory for samples processing. This unit operates up to 30 miles offshore and around Banyuls. 1 lighter boats (length 6 m). Versatile and transportable, these units provide access to the coastal waters plus scuba diving facilities.

4. Applications received

4.1. Origin country of applicants

EMBRC France has received a total of 197 users in the nine calls of TNA. Among these, 154 applicants were based in European countries while 43 applicants came from other non-European countries.

4.2. Applicants profile

4.2.1. Home institution type

Applicants were mostly based in academic institutes (universities: 64,9%; research organizations; 34,5%, SME 0,5%).

4.2.2. Career status

The most recurring career profile of the applicant was senior researcher for 40,6%, Post doc 23,9%, PHD 20,8%.

5. User hosted and their stats

5.1. Projects completed

Overall, EMBRC France has hosted 183 projects for a total of 197 users, 154 projects were carried out on-site, 29 in remote access. Remote access was used by researchers who needed samples from different station or could not access the station because of Covid.

The list of projects completed at EMBRC France is available in "[Appendix 1 – List of user-projects completed](#)" further below.



5.2. Installations used

Depending of the Station the installations used varies a little. Access to the Marine Biological Resources is at the heart of every project (For SBR 1 169 individual animals, 353 hours of collection by feet, boat and diving, 89 plankton strains – IMEV Marine models 36, Ecosystem access OOB 45) Imaging platform (SBR 98, IMEV 68). Common used space for on-site project is the lab (dry or wet) which was used for every project (617 days/ SBR; 331 days/OOB; 252 days/IMEV a bench space is compulsory for every project).

5.3. User satisfaction

Overall, users have positively evaluated the services offered (Very good: 75.9%; Good: 14.9%). In general, comments from the users were very positive.

Examples of user feedback: The service provided by our host institution (Station Biologique Roscoff) was excellent, and they took time both before and during our visit to understand our scientific needs and suggest solutions for what we wanted to do (e.g. suggesting possible field sites and suitable equipment on site, setting up a video call before our visit). IMEV Perfect experience in Villefranche! OOB I think the "Good" appreciations would have been "Very good" under normal sanitary conditions.

5.4. Projects not completed or cancelled

In OOB due to the retirement of a technician the assistance in Microscopy and support for the project was not available anymore after the COVID period.

In SBR, only 1 project could not be carried out. It had been postponed twice because of the COVID and the applicant change the dates at the last minute very close to the deadline of the end of July the services pre-booked for the project were not available during the week the applicant wanted to come.

6. Use of resources

Beneficiary / Linked Third Party	PM	short name of the installation(s)	explanations of tasks



7. Conclusion

Experiences gained regarding giving access to users

Great collaborations and meeting researchers. All services gain in experience from supporting ASSEMBLE+ project. In SBR we didn't have many internal collaborators involved. Scientific and technical support were mainly by the services and some users were not marine biologist expert.

Difficulties encountered and overcome

It was hard to organize a precise schedule sometimes when calls were coming back every 6 months. Communication with the applicant was essential to make sure we could support with success their project. Exchange of emails, video calls and host contract well settled are very important. The use of conf call used a lot during the Covid period to discuss the project upon arrival is a good practice we have introduced and kept in our procedures.



8. Appendices

8.1. *List of user-projects completed at EMBRC France*

- Project title: Assessment of amoeboid protists in a planktonic community of the Bay of Villefranche (PIAmoebae). Users: Alexander Kudryavtsev, Ekaterina Volkova (Zoological Institute, Russian Academy of Science, RU). Services used: Organisms collected in the wild; Aquaria and tanks
- Project title: Characterization of the Ascidian Xenobiotic Transporter System (TunicTrans). Users: Amro Hamdoun, Catherine Schrankel (Scripps Institution of Oceanography, US). Services used: Wet laboratories; Marine model organisms; Organisms collected in the wild; Aquaria and tanks; Dry laboratories; In-house catering; Imaging
- Project title: Comparative eco-toxicological study on different ascidian models (AscEco). Users: Antonietta Spagnuolo, Maria Concetta Eliso (SZN, IT). Services used: Organisms collected in the wild; Aquaria and tanks
- Project title: Development and Evolution of Enteroendocrine cells in cnidaria (Cnidarian Endocrine System). Users: Volker Hartenstein, Amelia Hartenstein (UC Los Angeles, US). Services used: Dry laboratories
- Project title: Development of neuroglia in amphioxus (AmphiGlia). Users: Simona Candiani, Matteo Bozzo (University of Genoa, IT). Services used: Aquaria and tanks; Organisms collected in the wild
- Project title: Establishing Clytia hemisphaerica as a model for oocyte development and polarization (CLYTOOCYTE). Users: Peter Lenart, Jasmin Jakobi (MPIMM, DE). Services used: Imaging; Marine model organisms; Wet laboratories
- Project title: Imaging and traditional taxonomy: an integrated approach for copepod biodiversity on the Southwestern Atlantic Ocean (COPINTAX). Users: Erica Caroline Becker Maria, (Universidade Federal de Santa Catarina, BR). Services used: Wet laboratories; Biobanks; In-house catering
- Project title: Picophytoplankton contribution to marine biological pump (PCMBP). Users: Pedro Flombaum, Pooja Sukunimeton (Universidad de Buenos Aires Facultad de Ciencias Exactas y Naturales, AR). Services used: Data sets
- Project title: Regulation of larval metamorphosis in the jellyfish Clytia hemisphaerica (ClytiaMet). Users: Elizabeth Williams, (University of Exeter, GB). Services used: Aquaria and tanks
- Project title: Role of Olig transcription factors in amphioxus neural development (MotoGliEvo). Users: Simona Candiani, (University of Genoa DISTAV, IT). Services used: Organisms collected in the wild; Aquaria and tanks; Dry laboratories; Imaging
- Project title: Study of Mediterranean holopelagic medusa helps to gain insight into life cycle evolution (MedusaEvo). Users: Yulia Kraus, (Lomonosov Moscow State University, RU). Services used: Organisms collected in the wild; Aquaria and tanks



- Project title: Tunicate Bioadhesion (TuniGlue). Users: Ute Rothbacher, (University of Innsbruck, AT). Services used:
- Project title: Unveiling the responses of planktonic microalgae to environment changes by correlating gene expression and ultrastructure (PhytoCorr). Users: Yannick Schwab, (EMBL Heidelberg, DE). Services used: Coastal research vessels; Sampling equipment
- Project title: ATAC to highlight the role of Nitric Oxide during amphioxus pharyngeal development (NOgeneATAC). Users: Salvatore D'Aniello, Lorena Buono (SZN, IT). Services used: Bioassays; Structural and chemical analysis
- Project title: Bioluminescence in the octocoral *Pennatula rubra* (OctoLux). Users: Warren Francis, (University of Southern Denmark, DK). Services used: Scientific diving
- Project title: Evo-devo of the deuterostome hematopoietic system (EVOBLOOD). Users: Juan Pascual-Anaya, (University of Málaga, ES). Services used:
- Project title: First ecotoxicological assessment of different nano and microplastics in the clownfish, *Amphiprion ocellaris* (NemoPlast). Users: Manuela Piccardo, (SZN, IT). Services used: Marine model organisms; Aquaria and tanks; Wet laboratories; Imaging
- Project title: Heat stress effects on black corals (HESTECO). Users: Mathilde Godefroid, Lorenzo Bramanti (Université Libre de Bruxelles, BE). Services used:
- Project title: Isolation of new giant DNA viruses infecting the marine zooplankton *Cafeteria burkhardae* (CMAGIC). Users: Matthias Fischer, Anna Koslova (Max Planck Institute for Medical research, DE). Services used: Coastal research vessels; Imaging
- Project title: Light quality responses in a picoeukaryote (LightQual). Users: Isabelle Carre, Betty Sands (University of Warwick, GB). Services used:
- Project title: Microbiome composition of sea urchin *Paracentrotus lividus* from different populations (Mediterranean, Atlantic) (PALIMI). Users: Georgia Tarifa, (HCMR-IMBBC, GR). Services used:
- Project title: Mouth development in chordates. Study of Nitric Oxide signaling pathway during amphioxus embryogenesis. (Mouth Evolution in Chordates). Users: Filomena Caccavale, Giovanni Annona (SZN, IT). Services used: Organisms collected in the wild
- Project title: Parasite diversity of an alien marine species, the ringneck blenny (Actinopterygii: Blenniidae) in the French Mediterranean (AliensPar). Users: Volodimir Sarabeev, (Zaporizhzhya National University, UA). Services used: Coastal research vessels; Aquaria and tanks;
- Project title: Polychaete phylogeny (PolPhy). Users: Fredrik Pleijel, Arne Nygren (University of Gothenburg, SE). Services used: Aquaria and tanks; Wet laboratories
- Project title: Potential role of coralline algae and substrate-associated microbial communities on settlement and post settlement survival of temperate gorgonian larvae (ARIEL). Users: Elisabetta Manea, Lucia Bongiorno (ISMAR, IT). Services used: Sampling equipment



- Project title: Reconstruction of the gene network downstream Nitric Oxide during amphioxus pharyngeal development (NOgeneNET). Users: Filomena Caccavale, Filomena Caccavale, Lorena Buono (Stazione Zoologica Anton Dohrn, IT). Services used: Marine model organisms
- Project title: Shedding light on the reproductive strategies of *Antipathella subpinnata* (Ellis & Solander, 1786) (BLACOREP). Users: Martina Coppari, Marzia Bo (University of Genoa, IT). Services used: Aquaria and tanks
- Project title: Skeletal growth mechanisms in elasmobranch fishes (ElasmoSkel). Users: Mason Dean, Julia Chaumel (Max Planck institute of Colloids & Interfaces, DE). Services used: Aquaria and tanks
- Project title: Understanding Coral Colony Morphology via Stochastic Modelling (UNICOMS). Users: Ozan Kahramanogullari, (Università degli Studi di Trento, IT). Services used: Aquaria and tanks; Dry laboratories; Scientific diving; Wet laboratories
- Project title: Visualisation and analysis of dynamics in a cross-infection experiment of *Ostreococcus* sp. and its viruses from the Baltic and Mediterranean Sea (crossVirO). Users: Luisa Listmann, (Institute for marine ecosystem and fishery science, DE). Services used: Culture collections; Wet laboratories
- Project title: Adapting to a new host: Coevolution and phylogeography of the European green crab and its castrating parasite (ADAPT). Users: Henrik Glenner, (University of Bergen, NO). Services used:
- Project title: Ambiguous genetic codes in marine meiofaunal ciliates (KaryoCode). Users: Brandon Seah, Aditi Singh (Max Planck Institute for Developmental Biology, DE). Services used:
- Project title: Analysis of the chromosomal evolution in the dog whelk *Nucella lapillus* (NLA Chrom Evol). Users: Daniel Garcia-Souto, (University of Santiago de Compostela, ES). Services used: Aquaria and tanks; Culture collections; Dry laboratories; Sampling equipment; Wet laboratories
- Project title: Assessment of The Ecosafety of Nanomaterials using Sea urchin gamete and embryo Assays (ATENSA). Users: Maria Consiglia Esposito, (SZN, IT). Services used: Imaging
- Project title: Bilaterian cell type evolution (Entoprocta). Users: Tim Wollesen, (European Molecular Biology Laboratory, DE). Services used: Coastal research vessels; Aquaria and tanks
- Project title: Bio-optical and Biogeochemical properties of Atlantic Phytoplankton (BAP). Users: Peter Croot, (NUIG, IE). Services used: Culture collections
- Project title: Cdk5, from physiological neurodegeneration to Alzheimer's disease onset (PANDOrA). Users: Silvia Mercurio, (Università degli Studi di Milano, IT). Services used: Organisms collected in the wild
- Project title: Cell types of Entoprocta (Kamptozoa) (Ente). Users: Tim Wollesen, (University of Vienna, AT). Services used:
- Project title: Characterization of hydrostatic pressure sensation in *Ciona* larvae (PRESSCIONA). Users: Luis Alberto Bezares Calderón, (Exeter University, GB). Services used: Imaging; Wet laboratories



- Project title: Comparative eco-toxicological study on different ascidian models (AscEco). Users: Antonietta Spagnuolo, (SZN, IT). Services used: Organisms collected in the wild; Aquaria and tanks
- Project title: Comparative photophysiology in the three-system culture of the toxic dinoflagellate Dinophysis (PHOTODINO). Users: Francisco Rodriguez Hernandez, (Instituto Español de Oceanografía, ES). Services used: Dry laboratories
- Project title: Detecting gene flow between French and Spanish populations of Littorina species: filling the Biscay Bay gap (BISBAYLITGAP). Users: Rui Faria, James Reeve (CIBIO/InBIO, PT). Services used:
- Project title: Discovering Isochrysidales diversity in the "Common Era" (DICE). Users: Linda Amaral-Zettler, Erik Zettler (Royal Netherlands Institute for Sea Research and Utrecht University, NL). Services used: Culture collections; Aquaria and tanks
- Project title: Dissecting the Role of DNA Methylation in Annelida (AnneMethyl). Users: Keroshini Guynes, (Queen Mary University of London, GB). Services used:
- Project title: Does seaweed-pathogen interaction vary across populations and seasons? (DIPS). Users: Mahasweta Saha, (Plymouth Marine Lab, GB). Services used:
- Project title: Ecological interactions between marine habitats structured by rhodolith seabeds and marine biodiversity: amphipods as indicators of global environmental changes (MARS). Users: Sandra Navarro, Fransisco Otero Ferrer (Instituto Universitario ECOAQUA, ES). Services used: Molecular biology and omics
- Project title: Establishment of cell fates in the early branching annelid Owenia fusiformis (OweniaCELFATE). Users: Jose Maria Martin Duran, (Queen Mary University of London, GB). Services used: Organisms collected in the wild
- Project title: Evaluation the status of within species genetic clades of a cosmopolitan colonial ascidian (ESGC Ascid). Users: Eitan Reem, (Israel Oceanography and Limnological Research (IOLR), IL). Services used: Scientific diving; Aquaria and tanks
- Project title: Evaluation the status of within species genetic clades of a cosmopolitan colonial ascidian-second part (ESGC ascid 20). Users: Eitan Reem, (Israel Oceanography and Limnological Research (IOLR), IL). Services used:
- Project title: Evolution and Development of Molluscan Nervous Systems (EvoDevMNS). Users: Elisabeth Zieger, Christian Baranyi (University of Vienna, AT). Services used: Wet laboratories; Organisms collected in the wild
- Project title: Evolution of boring bryozoans (boringBryo). Users: Thomas Schwaha, (University of Vienna, AT). Services used: Aquaria and tanks; Coastal research vessels
- Project title: Evolution of meiofaunal cnidarians and annelids (MeioEvo). Users: Alexandra Kerbl, Lenke Toedter (University of Hamburg, DE). Services used: Coastal research vessels; Dry laboratories; Wet laboratories



- Project title: Evolutionary Developmental Biology of Palaeonemertea (EvoDevoPal). Users: Jörn von Döhren, Thomas Bartolomaeus (University of Bonn, DE). Services used: Wet laboratories; Aquaria and tanks; Dry laboratories; Imaging; Sampling equipment
- Project title: Exploring the cellular localisation of the iodine store in *Laminaria digitata* and its impact on coastal seawater chemistry (Iode Rosko). Users: Frithjof Kuepper, Christos Katsaros, Carl J. Carrano (University of Aberdeen, GB). Services used: Scientific diving; Imaging
- Project title: Genetic and ecological drivers of successful bioinvasion by *Agarophyton vermiculophyllum* (INVASION). Users: Florian Weinberger, (GEOMAR Helmholtz Centre for Ocean Research Kiel, DE). Services used:
- Project title: How will future conditions alter phytoplankton nutritional quality? (OW-OAcocco). Users: Roberta Johnson, (Universitat Autònoma de Barcelona, ES). Services used: Wet laboratories; Culture collections; Imaging; Aquaria and tanks
- Project title: Hypoxia signalling in multicellular brown algae (PhaeOx). Users: Warren Francis, (University of Southern Denmark, DK). Services used: Experiment design
- Project title: Invasive and cryptic ascidians: discovery and integrative taxonomy (ASC-DISC). Users: Federica Montesanto, Marika Salonna (University of Bari, IT). Services used: Wet laboratories; ; Marine model organisms; Data sets; Data analysis tools and software; Data analysis tools and software; Scientific diving
- Project title: Investigating diversity and biochemical composition of calcareous marine microalgae: novel insights for coccolithophore biology and ecology (DiverCE). Users: Naomi Villiot, (Heriot-Watt University, GB). Services used:
- Project title: Investigation of *Franzenella* cf. *limicola* (Franzlimevol). Users: Thomas Schwaha, (University of Vienna, AT). Services used: Sampling equipment; Scientific diving; Wet laboratories
- Project title: Marine pollution from microplastics: effects on ascidians development (MARMEID). Users: Silvia Messinetti, Silvia Mercurio (University of Milan, IT). Services used: Aquaria and tanks
- Project title: Maternal transcriptomic basis of equal vs unequal spiral cleavage in annelids (ANEGDIV). Users: Patrick Beckers, Conrad Helm (Queen Mary University of London, GB). Services used:
- Project title: Meiofauna of Roscoff (Meiofauna_Roscoff). Users: Nadja Møbjerg Jørgensen, (University of Copenhagen, DK). Services used: Coastal research vessels; Dry laboratories; Imaging; Sampling equipment; Wet laboratories
- Project title: Molecular and morphological analyses of polychaetes (Mol-morph polychaetes). Users: Fredrik Pleijel, Arne Nygren (Gothenburg University, SE). Services used: Organisms collected in the wild
- Project title: Regain of head appendages in Annelida (ScaliEvol). Users: Conrad Helm, Paul Halke (University of Goettingen, DE). Services used:



- Project title: Sampling fresh material for the research project (Sample_InvertOmics). Users: Torsten Struck, Alberto Valero Gracia (University of Oslo, NO). Services used: Coastal research vessels; Sampling equipment; Scientific diving; Wet laboratories
- Project title: Sampling of Habitat Forming Octocorals for comparative genomics at population and species levels (SAM_CoGeCo). Users: Jean-Baptiste Ledoux, (CIIMAR, PT). Services used:
- Project title: Sea spider collection & nervous system anatomy and regeneration studies (SeaSpidCNS). Users: Georg Brenneis, (Universität Greifswald, DE). Services used: Aquaria and tanks; Wet laboratories; Sampling equipment
- Project title: Searching for Colours in the Marine Environment (STRUCOLR). Users: Raditijo Hamidjaja, (Hoekmine BV, NL). Services used: Organisms collected in the wild; Culture collections; Scientific diving; Aquaria and tanks
- Project title: Single-cell Metabolic Profiling of Microalgae with LDI-MS (SIMPA). Users: Marine Vallet, Filip Kaftan (Max Planck Institute for Chemical Ecology, DE). Services used: Wet laboratories; Coastal research vessels; Sampling equipment; Culture collections
- Project title: Species-specific effect of diatoms on larval settlement in the marine worm *Platynereis dumerilii* (SPEC-ID). Users: Elizabeth Williams, (University of Exeter, GB). Services used:
- Project title: The acoel and the algae's divorce: separating acoel cells from their symbiotic algae by single-cell transcriptomics (AcoelSC). Users: Jordi Solana, Arnau Sebé-Pedrós (Oxford Brookes University, GB). Services used: Organisms collected in the wild; Aquaria and tanks
- Project title: The role of MAPK signalling in *Owenia fusiformis* D-quadrant development (OweniaDq). Users: Océane Seudre, Jose M. Martin-Duran (Queen Mary University of London, GB). Services used: Organisms collected in the wild; Dry laboratories

